

## PAN UK's response to the draft UK National Action Plan for the Sustainable Use of Pesticides (NAP) consultation



### **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 assumption that high levels of protection for human health and the environment are in place is false. While it is often trumpeted that the UK has a highly robust regulation system that goes beyond what is required by many countries and therefore delivers sufficient protection, the reality contradicts this. Birds, mammals, bees and wild flowers are in decline, our rivers and water courses are polluted with pesticides, the majority of our food is contaminated with pesticide residues and people are exposed to and poisoned by pesticides on a daily basis. Now is the time to really make sure that the UK regulatory system is fit for purpose and introduce far-reaching, visionary measures that will protect the people and environment of the UK from the harmful effects of pesticides now and into the future.

The inclusion of the following sentence in the draft NAP - *“We will continue to be led by the best available scientific knowledge to develop our regulatory system while also continuing to follow the precautionary principle where there is uncertainty over levels of risk.”* - is both welcome and problematic. PAN UK welcomes the assurance that the precautionary principle will continue to underpin the UK regulatory system. However, the phrase “levels of risk” gives us cause for concern.

There has been much debate about the merits of hazard or risk based approaches to the regulation of pesticides. The system that the UK has been under since 2009 has been a more hazard based approach looking at the intrinsic properties of an active substance and regulating accordingly. Whilst not a perfect system in terms of providing protections for human health and the environment, it is a far more precautionary and therefore effective approach than a purely risk based regulatory system.

PAN UK is concerned that the UK will revert to a risk based regulatory system under the misconception that almost any risk to human health or the environment from a particular active substance can be effectively managed. We have seen repeatedly that this is not the case and needlessly exposes people and the environment to the harms of pesticides.

Moreover a risk based approach adds several layers of complexity to the system which would undermine the NAP's stated goal of simplifying the regulatory system. This is because the risk based model places greater emphasis on assessing and managing risks and involves the deployment of specific checks and measures to keep risks below acceptable levels. For example, if a pesticide is particularly harmful to human health, under a hazard-based approach it might be banned while a risk-based approach would introduce measures such as Personal Protective Equipment (PPE) for users or instructions not to spray near residential areas. Ensuring a high level of protection under a risk-based approach requires the implementation and enforcement of multiple processes and systems to ensure that the controls are adopted and working. This adds complexity and cost and if any of these systems break down, the potential impacts on human health and the environment are high and sometimes irreversible. A hazard based approach provides a higher level of protection and a less complicated

regulatory and practical approach which is easily understandable to end users, decision makers and the general public.

In addition PAN UK is highly concerned by the sentence; *“In doing so we will ensure that the risks and impacts of using pesticides are understood and controlled in a proportionate fashion based on the latest scientific understanding and principles.”* This is a cause for concern in a number of areas. Firstly, the phrase *‘controlled in a proportionate fashion’* introduces ambiguity and a potential loophole which opponents of pesticide regulation or bans can use to argue against additional restrictions being introduced. Secondly, this sentence also harks back to the notion of ‘science based’ decision making. The ‘science-based approach’ is a term used by the pesticide industry and other pro-pesticide advocates such as the US Government as a veiled and publicly palatable way through which to attack the precautionary principle. While on paper, science based decision making seems like the most robust way forward it all depends on which science the decision is based upon. As was clearly the case with neonicotinoids before the UK Government changed course in 2018, the science being listened to was that of the pesticide manufacturers which showed no harm, whilst independent studies clearly revealing evidence of harm were ignored. PAN UK wants to see assurances in the NAP that any decisions on pesticides will take into account the work of independent scientific studies, both prior to and post-approval for use.

The current regulatory system is too fragmented. The chain of command and the responsibility for pesticides as it currently stands is opaque, confusing and ill defined. In terms of which bodies actually regulate pesticides there is a need for change. Split between the HSE / Department of Works and Pensions and Defra with the Chemical Regulation Directorate sat in the middle makes for a confusing approach to regulating, monitoring and enforcing pesticide regulations. And while this confusion is present there is a glaring omission that needs to be addressed in the NAP as a matter of urgency – the inclusion of the Department of Health and Social Care (DHSC) in pesticide monitoring, regulation and enforcement. For too long pesticides have been viewed as an agricultural or environmental issue with the health aspect neglected, meaning that the decision-making around pesticide regulation has almost entirely rested with Defra. If we are to achieve the NAP’s aim of producing crops with *“zero detrimental human health effects”*, then we urgently need to bring the DHSC and other health bodies into the regulatory system and the debate more broadly.

There is currently also confusion around legal requirements vs guidance and this is exacerbated by the muddle over regulation, best practice and voluntary approaches. It is abundantly clear that voluntary approaches do not work as evidenced by the continuing failure of the Voluntary Initiative to make any positive impact on reducing the harmful environmental effects of pesticides. Similarly it is clear that reliance on best practice guidance fails to deliver any real change. If we really want to simplify the regulation of pesticides, then we need to abandon best practice guidelines and industry self-regulation and instead introduce clear legislation that will regulate the behaviour of all pesticide users and enable those that don’t comply to be punished.

**PAN UK is calling on the Government to;**

- **Ensure that the precautionary principle is central to the regulatory regime and underpins all decision-making on pesticides.**
- **Maintain a hazard based approach to the regulation and approval of pesticides.**
- **Ensure that decisions on approvals and post-approval monitoring take into account independent scientific studies showing harm to human health or the environment.**
- **Create an entirely new body drawing together Defra, HSE and DHSC to look at all aspects of pesticide use including environmental and occupational and wider human health issues.**

## **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 greater transparency in the decision making process around various aspects of the pesticide regulatory regime. In fact, the current lack of transparency has created deep mistrust on both sides of the pesticides debate and led to a polarisation of opinions. This is particularly the case around the authorisation process. Given that the UK is now running its own standalone authorisation system for active substances to replace the EU system, now is the perfect opportunity to instigate a clearly transparent system. With access to the data underpinning decisions such as authorisations and emergency derogations, all stakeholders will have a better understanding of how decisions are made and therefore increased trust in the system itself.

Specifically, there must be third party access to the data submitted when an active substance is put forward either for approval or renewal that would allow for peer review of the data. Public consultation should be instigated for pesticides that pose a more than negligible risk to either human health or the environment.

Where independent scientific studies have shown a possible harmful outcome from the use of a pesticide there must be a suspension of use until further research can be carried out to either prove or disprove the harmful effects – a precautionary approach.

Regarding the derogation system, the recent furore over the approval of the banned neonicotinoid thiamethoxam for use on sugar beet has clearly shown that the system needs an overhaul and greater transparency. Applications for 'emergency' derogations must be made public and there must be an opportunity for concerned parties to make submissions on the suitability, or otherwise, of the derogation.

### **PAN UK is calling on the Government to;**

- **Instigate a transparent authorisation system for active substances and pesticide products that would allow third party scrutiny of toxicological data supplied by the manufacturer.**
- **Adopt a system whereby an active substance or product would be suspended from use, pending further investigation, should independent scientific studies indicate harm to either human health or the environment from its use.**
- **Publish all applications for emergency use derogations of active substances or pesticide products and allow comment and analysis from interested parties prior to any decision to grant an approval.**

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

A point that needs clarification in the NAP is the definition of 'innovation'. In the current draft, innovation is not defined but the examples given are all technology based not nature-based. This reflects the fact that, for many, innovation means solely the development of new pesticides or new ways of applying pesticides. Reference to the use of robots and drones or greater use of precision farming are often discussed under the title of innovation. And while these techniques are potentially useful in terms of making the use of pesticide application more precise, they cannot alone drive the required reductions in pesticide use or pesticide-related harms.

In contrast, nature-based agroecological farming is innovative, low risk and sustainable. Supporting the development of agroecological farming practices would greatly decrease the regulatory burden on the Government by reducing the need for pesticides and thus the need for regulation. It would also

support farmers to move towards more sustainable farming practices and help the Government meet its commitments under the 25 Year Environment Plan. Similarly, greater support for organic agriculture should form a key component of the NAP, particularly since there have been huge innovations within the organic sector in terms of dealing with pests and diseases. It's crucial that the NAP, and Defra more broadly, expands what it sees as 'innovation' to also recognise the huge role that could be played by nature-based solutions.

In addition, given that regulation, no matter how good, will always lag behind scientific developments there is a need to ensure that such developments do not make the regulatory framework obsolete. This is a frequent issue for pesticide regulation where changing chemistries outpace the risk assessment process meaning that new actives and products cannot be adequately assessed for their potential to harm either human health or the environment. There are two recent examples of this, neonicotinoid treated seeds and endocrine disrupting chemicals (EDCs).

In the case of neonicotinoid treated seeds many of the routes of exposure and subsequent impacts on non-target organisms were missed by the risk assessment process because it was not designed to properly assess what was, at the time, both a new chemistry and method of delivery. This led to immense and unintended harm to bee and other pollinator species and drove the EU to overhaul the way in which pesticides are assessed to better identify impacts on pollinators. In the case of EDC chemicals, the regulatory system continues to lack a robust definition or set of criteria. This makes it impossible to definitively classify pesticides suspected of being EDCs, meaning that they are allowed to remain in use and expose vulnerable human populations to their harmful effects.

In order to combat the unavoidable shortcomings in any regulatory system there is a need to put several measures in place. In the first instance there needs to be greater acceptance of the precautionary principle when independent science shows post-approval harms from pesticides. Secondly, there need to be clearly defined criteria for what constitutes a hazardous pesticide. PAN International has developed a well-regarded list of Highly Hazardous Pesticides (HHPs) and we urge the UK Government to use it as the basis upon which to adopt an HHP approach to pesticide regulation. This is an approach recommended by the UN Food and Agriculture Administration (FAO) and also something that major parts of the retail industry are starting to adopt globally, including the majority of major UK supermarkets.

Finally, the UK's new regulatory system for pesticides must include within it the principle of candidates for substitution. This is a system whereby hazardous pesticides are identified and alternatives to them are sought as a matter of priority. Identifying which pesticides pose the greatest risk to human health and the environment provides the regulatory system with a clear method for prioritising which to phase out. This will result in the use of less hazardous pesticides as a matter of course and help drive the demand for, and therefore innovation into, non-chemical alternatives. The UK has already been subject to this system under EU regulation and this must be carried over into our new standalone system once developed.

**PAN UK is calling on the Government to;**

- **Clearly state that innovation includes nature friendly farming, agroecology and organic approaches (and does not just refer to developments in technology) and invest in R+D accordingly.**
- **Ensure that independent scientific studies are properly considered at the approval stage and post-approval.**

- **Ensure that there are a robust set of hazard criteria (carried over from the EU) that pesticide approvals are measured against – this must include a definition of EDCs (endocrine disrupting chemicals).**
- **Adopt an HHP approach to pesticide regulation.**
- **Maintain the system of candidates for substitution to ensure that we are always looking to use the least harmful substance available.**

**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 to support and promote the development of biopesticides as they can deliver protections from pests and diseases with a much lower potential for harm to non-target organisms than synthetic pesticides.

Biological, rather than chemical, products are increasingly recognised as the future for sustainable pest management. Products in this biological sector include: biopesticides (based on microorganisms); natural chemical signalling compounds released by insects (pheromones) or plants; botanical extracts; and other natural substances. Market growth for these products is growing at double the rate for conventional pesticides, driven by retailer and consumer demand for residue-free produce and food sector commitments to environmentally friendly practices.

These biological products generally pose very much lower or negligible risks to humans and non-target organisms. Farmers will benefit from more biologicals in their pest control toolbox, by having more options to deal with problems of pest, disease and weed resistance to existing chemicals, and for replacing withdrawn hazardous pesticides. Yet only around 35 biopesticide products are currently available in the UK.

To support a rapid increase in the availability of safe and effective biological products for British users, the UK Government should invest in, and implement, a flexible but robust fast tracking procedure for approval of biological and other non-chemical products. As with any pesticide there is a need for a rigorous approval process and biopesticides should in no way be treated to a less robust approval system. This could include: an automatic provisional approval for products which meet agreed low-risk criteria; putting biologicals 'at the front of the queue' for evaluation and review; greatly reduced or waived fees for applicants; and more appropriate data requirements.

To increase uptake and reduce the threat of hazardous pesticides, bio-pesticides could become the first choice replacement when a pesticide is identified as being a candidate for substitution as outlined in the previous answer. This would help to support the development of bio-pesticides and ensure that the least toxic option is being used to replace hazardous pesticides.

**PAN UK is calling on the Government to;**

- **Maintain a robust regulatory system for biopesticides.**
- **Introduce a fast track system for data collection on biopesticides.**
- **Introduce provisional approvals for products meeting low-risk criteria.**
- **Introduce reduced regulatory approval fees for SMEs involved in developing biopesticides.**

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

If regulation is to succeed then it must be possible to measure the impact it is having and the changes it is driving (intentionally or otherwise) in relatively real time. This is particularly true in the case of pesticide use in agriculture which is highly dependent on context and therefore impacts can be changeable from one season to the next.

In terms of monitoring impacts on biodiversity the most pressing need is to establish a set of baseline data for a wide variety of taxa including birds, mammals, aquatic organisms, insects and plant species. Some of this is already underway and for some species reasonably accurate data is available. But biodiversity monitoring in general needs scaling up, particularly for species that are most threatened by the impacts of pesticides. Current biodiversity monitoring focusses almost entirely on short term effects and more research is required looking at long-term and sub-lethal impacts of exposure to pesticides. Similarly there needs to be a focus on the combinatory (or synergistic) effects of pesticide exposure which is currently lacking entirely – how do different classes of pesticide work together to increase harmful effects over both the short and long term. The impacts of pesticides also need to be researched at different scales with a particular focus on the landscape scale.

From the point of view of human health impacts, the research needs are very similar. There needs to be a greater focus on the combinatory and low dose effects of pesticides, particularly in relation to those actives that are classified as Endocrine Disrupting Chemicals (EDCs).

A better understanding of how pesticides work in combination, at low doses and for biodiversity at a landscape level will help guide better regulatory decisions.

In addition, there needs to be more efficient and comprehensive data collection of pesticide usage. This is covered in greater detail in our response to question 22 of this consultation.

Sales data is a very valuable indicator of actual pesticide usage and can help identify changes in the use of pesticides. The collection and publication of sales data for all pesticides would assist in providing a clearer picture of the impact that new regulations are having on pesticide use. Sales data is publicly available in countries such as France and would be a useful introduction in the UK.

Finally, more research and data collection needs to be undertaken on pesticide contamination of water. There have been some advances in the approach to such data collection and monitoring but it needs to be expanded. In particular, river catchment monitoring of pesticides can help to identify both problematic uses and types of pesticide and provide useful information on the impact that regulatory changes are having.

Without a comprehensive monitoring and research programme, the UK will continue to legislate 'in the dark' with only a shallow understanding of the true impacts of both pesticide use and pesticide-related regulatory decisions.

**PAN UK is calling on the Government to;**

- **Expand biodiversity monitoring schemes to cover a wide variety of taxa.**
- **Expand monitoring of river catchments for pesticide contamination.**
- **Expand research into the long-term effects of pesticides on human health, including combinatory and low dose effects.**
- **Support greater research into the combinatory effects of pesticides on biodiversity and human health.**
- **Research and monitor the impact of pesticides at a landscape level.**
- **Collect and publish sales data for pesticides.**

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

There needs to be an effective system of checks and balances in place to monitor, scrutinise and assess decisions that are taken on pesticides. Leaving the EU has removed many of the UK regulatory system's in-built checks and balances and therefore resulted in a loss of effective oversight with no effective method for questioning decisions taken.

At present there is a closed loop as the recent approval of a derogation for thiamethoxam has clearly demonstrated. It is not acceptable that a decision such as this should be reviewed by the same body that made the decision.

Whilst the Expert Committee on Pesticides (ECP) does undertake a great deal of work in assessing and advising Government Ministers on key decisions regarding pesticides, it is too small and under-funded to carry out its expanded role as the UK develops its own regulatory system. An expansion of and a change to the terms of engagement for members of the ECP will be required if they are to perform effectively in dealing with an inevitably increased workload.

PAN UK also has concerns regarding the independence and transparency of the ECP. At present it is governed by Defra, reports to the Defra Minister and its operating remit is set by Defra. We would like the ECP to become a truly independent advisory body with its own operating budget that would allow it to undertake the many tasks it will need to perform moving forward. In terms of transparency there is a need for all meetings of the ECP to be either open to the public or for full meeting minutes to be made immediately available. The rationale for and evidence underpinning ECP decisions needs to be published in a timely manner so that independent scrutiny by relevant stakeholders can take place.

The Pesticides Forum, a notionally independent advisory body, either needs a radical overhaul or dissolution. At present the membership is overly skewed towards the pesticide industry and other vested interests that undermine its independence. The ineffectiveness of the forum was highlighted by the resignation of all civil society members in 2019. Over the years of its existence it has provided little in the way of constructive advice on reducing the pesticide burden. If the UK is going to meet its objectives under the 25 Year Environment Plan then a body such as the Pesticides Forum needs to focus its efforts on reducing pesticide use and eliminating the harms caused by pesticides – a role it does not currently fulfil.

In summation, the UK needs to develop bodies that can provide advice truly independent from the pesticide industry on decisions being made within all areas of the pesticide regulatory system. And the focus of all stakeholders must be on how to reduce the use and impact of pesticides in the UK.

### **PAN UK is calling on the Government to;**

- **Expand the capacity of the ECP in order to cope with an increased workload by increasing its budget and personnel.**
- **Allow the ECP to set its own agenda and areas of interest alongside its scrutiny of pesticide approvals.**
- **Increase the transparency around ECP decisions, meetings and advice provided to Ministers on pesticide issues.**
- **Disband the Pesticides Forum or reform it significantly to focus on reducing both pesticide usage and impacts.**
- **Create an independent body of stakeholders from across the spectrum on interests related to pesticides that can advise and scrutinise decisions made by the Government.**

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

One of the most important elements missing from the current NAP draft is the development and adoption of a clear definition of what IPM actually means in practice. The opening section on definitions gives a very broad outline of some aspects of IPM but fails to make it clear that IPM should be focused on reducing the use of pesticides.

The final draft of the NAP should adopt the internationally-accepted UN FAO's definition of IPM which may appear only subtly different from the definition included in the current draft NAP but actually has some very meaningful differences. The UN FAO definition states:

*"Integrated pest management means careful consideration of all available plant protection methods and subsequent integration of appropriate measures that discourage the development of populations of harmful organisms and keep the use of plant protection products (pesticides) and other forms of intervention to levels that are economically and ecologically justified and reduce or minimise risks to human health and the environment. 'Integrated pest management' emphasises the growth of a healthy crop with the least possible disruption to agro-ecosystems and encourages natural pest control mechanisms."*

To avoid overstating the uptake of IPM and ensure that the concept of IPM cannot be used as a smokescreen to obscure a 'business as usual approach', it is also necessary that a clear definition of what IPM is not is provided in the NAP. Manipulation of IPM to mean all things to all people is currently a big problem in the UK where it is often claimed that 80%+ of UK farmers have adopted IPM. This is an inaccurate account of the scale of IPM uptake in the UK. As the text in the draft NAP briefly mentions, many users will only be utilising one or two IPM techniques and this is not enough to say that they have adopted an IPM approach. The fact that the area of land treated with pesticides and the frequency with which many crops are sprayed are both rising in the UK proves that IPM adoption rates are much lower than touted by some pro-pesticide advocates. If IPM is to drive pesticide reduction then it is crucial to define it carefully.

At present there seems to be little true understanding expressed within the draft NAP that IPM is a suite of techniques that need to work together to deliver real change. IPM is not one technique but a whole range of tactics that can be used in a holistic way before, during, and after the growing of a specific crop or crops. IPM techniques range from low-tech methods, such as field walking (crop scouting or monitoring) to identify possible pest, weed and disease problems by sight, to high-tech approaches, such as sophisticated computer modelling designed to predict pest levels or disease risk in specific locations. The aim is to maintain pests, diseases and weeds below economically damaging levels by integrating a range of IPM tools. This does not mean eliminating every pest, insect or unwanted weed, plant or disease-causing organism. These points should be included in the final NAP to help pesticide users understand IPM.

PAN UK is also concerned that the draft NAP states that the current Integrated Pest Management Plan (IPMP) template developed and promoted with the Voluntary Initiative (VI) will be the model followed. In practical terms the IPMP, which has been in use for several years, has not delivered an increase in IPM uptake or reduced the use of pesticides. The IPMP is little more than a questionnaire and therefore falls far short of providing the research, training and advisory support, market incentives and regulatory deterrents required to drive a significant increase in uptake of IPM. Given that it is completed by individual farmers online, and there seems at present to be no method for checking the veracity of the information provided, the IPMP can be criticised as a box-ticking exercise which



drives little change in farming practices but meanwhile overstates of the level of IPM uptake in the UK. This is hardly surprising since the VI has failed to reduce the use or impact of pesticides on the environment.

Research and extension services focussed specifically on IPM and agroecology are vital to the uptake of IPM and other techniques. The Government should develop farmer-led research services and free extension and advice services for farmers as is the case in other countries such as France. A good example can also be found in Denmark which has led the way in developing a dedicated IPM and pesticide reduction advice service for farmers. Danish farmers can receive heavily subsidised advice on IPM focused on farmers' specific crop protection challenges. Farmers sign a two-year agreement to receive a total of six to twelve hours of advice (six hours for farms less than 100 hectares, and one hour per 50 hectares to a maximum of twelve hours). When special challenges arise on a particular farm, the agreement may be extended by one year. The project funded 1,400 'IPM advisory packages' in 2010-2015. In total, advice was supplied to farmers cultivating approximately 15 per cent of Denmark's arable land.

The Government also needs to develop a set of crop and sector specific IPM protocols that could be shared and disseminated amongst the farming community. This could be best achieved by establishing farmer field schools and grower groups similar to those already operated by some of the main UK retailers. Focussing on crop specific or geographically similar areas would allow the development of IPM techniques that would be of specific use to farmers in those sectors or areas. Such an approach has been shown to drive IPM uptake and push pesticide use down, whilst benefitting farmers financially.

Farmers and other pesticide users also need clear goals and rewards for changing the way that they operate. There is a need for a time bound IPM uptake target so that changes can be monitored and problem areas addressed if the targets are not met. As an example, Germany has introduced a target of 30% of farms to work to published IPM guidelines by 2021 and 50% by 2023. A similar target for the UK would help boost the uptake of non-chemical alternatives to pesticides and show a clear direction of travel for UK agriculture.

Finally, farmers must be supporter and rewarded for making positive changes and so replacement payments for the CAP must be based, at least in part, on pesticide reductions and uptake of IPM. The current draft states that *"...we expect IPM to be part of Environmental Land Management"* but this appears to be far from guaranteed. PAN UK would like to see the final draft NAP include a commitment that the new ELM system will link payments to uptake of IPM.

**PAN UK is calling on the Government to;**

- **Adopt a clear definition for IPM based on the current FAO definition.**
- **Develop crop specific IPM protocols.**
- **Establish crop specific and geographically linked farmer field schools and grower groups.**
- **Develop an independent IPM / agroecology research and extension service for farmers.**
- **Establish an IPM uptake target focused on increasing uptake of non-chemical alternatives to pesticides.**
- **Link future farm payments via the new ELM scheme with pesticide reduction and IPM uptake.**

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

The best way to make the case for the benefit of IPM is for farmers to hear from other farmers about their own experiences, whether they be in the UK or elsewhere. Farmer field schools and grower groups could form an important part of disseminating this message. The messaging has to be on income benefits for farmers as well as the environmental benefits that can accrue as a result of adopting IPM and other nature-friendly techniques on farm.

In terms of practicalities, again this is something that can best be delivered by farmers using IPM. Whilst IPM and agroecology are fairly broad definitions there is a need for sector specific considerations to be brought in. An arable farmer in the east of England is going to have very different needs to a cabbage farmer in the south, and this needs to be made clear. Development of extension services and farmer field schools whereby farmers in similar situations can share information and advice should form a core strategy for the UK's approach to developing and supporting IPM.

There should also be an emphasis on bringing organic growers into the discussion. Organic agriculture has had to be innovative in its approach to controlling pests and diseases while still producing healthy crops and remaining profitable. Much could be learned from organic growers and be incorporated into developing IPM systems. It is essential that the extensive knowledge of the organic sector is tapped into and made available to non-organic farmers. Events such as the Organic Arable Crops Day organised by Organic Farmers & Growers (OF&G) are excellent opportunities to showcase the benefits of organic agriculture for those not currently in the sector.

**PAN UK is calling on the Government to;**

- **Develop farmer field schools and grower groups, outreach and extension services focussed on IPM and other techniques that will reduce pesticide use and promote more sustainable farming methods.**
- **Support events that will bring non-organic farmers into contact with organic growers to learn from their experiences of non-chemical weed and pest management.**

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

It would be possible to instigate a labelling system for IPM based on the adoption of IPM techniques. However, the effectiveness of such a scheme would be wholly dependent upon the public understanding what IPM is and what benefits it brings. In an already crowded labelling scene, an IPM label would inevitably get lost in the noise. But if the label were to be awarded for reaching a high standard of IPM and the result was a higher return for the farmer or grower for their produce then it might be an effective method for driving IPM uptake.

In the amenity sector this issue is less clear. The Amenity Assured system has been an abject failure and, in fact, the Amenity Forum itself has done little or nothing to actually drive any change. The pesticide reductions in the amenity sector of the past few years have been as a result of action by forward thinking local councils and other land managers, public pressure, and the efforts of companies offering alternatives.

The amenity sector does not need an IPM standard - it needs to phase out the use of pesticides. The public do not want pesticides to be used in the places where they live, work and play and nearly one hundred councils across the UK have already taken action to reduce or end their use of pesticides. Given that the use of pesticides in the amenity sector is the second most common route of pesticide exposure for the public (after diet), and the fact the vast majority of amenity pesticide use is for cosmetic reasons, means that there is no need for pesticide use in urban areas and therefore promoting a standard for IPM is an obsolete idea.

PAN UK's position is that there should be a phase out of the use of amenity pesticides for all but a few uses related to maintaining public safety and the control of certain invasive species. A phase out would serve several purposes – reducing exposure to pesticides for those living in urban areas, greater protection and enhancement of urban biodiversity and encouragement for SMEs that are offering non-chemical, sustainable alternatives to chemical pest and weed control – thus helping to kick start the green economy.

As stated, supported by the public, many councils are already phasing out or reducing pesticide use off their own bat. The UK Government should be providing them with both leadership and support for their efforts, both of which are currently entirely lacking. PAN UK would like to see a clear commitment and timeline in the NAP for ending the use of amenity pesticides.

**PAN UK is calling on the Government to;**

- **Phase out the use of non-agricultural pesticides.**
- **Provide leadership and support for local authorities to adopt pesticide phase out and reduction plans.**
- **Greater support for companies offering non-chemical alternatives to amenity pesticide use**

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

For farmers, amenity users and the general public to understand IPM it needs to have a clear definition which distinguishes it from 'business as usual'. As long as the Government defers to the industry definition, people will not understand it let alone be inspired to adopt it. Therefore the central pillar of any IPM campaign should be to explain that, in its simplest form, IPM means 'pesticides as a last resort'. Any communications campaign more complicated (or watered down) than this will be doomed to failure.

In addition, any clear communication strategy must outline the benefits of adopting IPM which, in the case of farmers, must include the business/financial case as well as a description of the environmental and health benefits.

**PAN UK is calling on the Government to;**

- **Ensure that IPM is explained as 'pesticides as a last resort' in any Government communications campaign.**

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

The Government could help to support and offset risks associated with IPM by introducing a pesticide tax or levy. The introduction of a pesticide tax has been proven to be an effective tool for helping to reduce the use of pesticides in a number of other countries.

Denmark first introduced a pesticide tax in 1996. In 2013, its tax was adjusted so that it no longer just reflected a proportion of the price paid but is calculated on the basis of the toxicity to health and environment of specific pesticide products. In other words, the amount of tax applied to pesticides varies according to the potential each substance has for harming the environment and/or human health. The most toxic pesticides – those that haven't been filtered out by the hazard criteria during the initial risk assessment, or those that drive the most damaging impacts such as contaminating water courses – have the highest rate of tax applied to them. In fact, in Denmark, the exact amount of tax is calculated based on a Pesticide Load Indicator. Given the excellent proposal in the draft NAP to introduce a UK Pesticide Load Indicator, the system needed to underpin a UK pesticide tax would already be in place.

A pesticide tax based on toxicity has the strong advantage of providing farmers with a financial incentive to use pesticides that are the least toxic. It also ensures that farmers using substances that present the greatest risk to the environment are made to pay the most (thereby embedding the Polluter Pays Principle). The approach also drives innovation in developing non-chemical alternatives and can provide funds to pay for the development of an IPM advisory body to reduce farmers' reliance on pesticides.

As part of a pesticide reduction strategy, therefore, a pesticide tax can be an invaluable tool. Revenues raised could help to meet any shortfall resulting from the loss of CAP payments while delivering public goods and a more sustainable UK agricultural system by supporting farmers to adopt IPM and funding an IPM extension and advice services for farmers.

Another option is to introduce crop insurance schemes for those adopting IPM to ensure there is no financial loss from any change in yield resulting from trialling new techniques. Farm payments linked to IPM uptake, as discussed previously, could be used to offset any risks associated with trying and adopting new pest and disease control methods.

**PAN UK is calling on the Government to;**

- **Introduce a pesticide tax based on levels of toxicity (the UK Pesticide Load Indicator).**
- **Introduce a crop insurance scheme for farmers adopting new IPM or agroecological methods of pest and disease control.**

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

The Government should establish a research facility that focuses solely on IPM and agroecological pest and disease prevention methods. It should be farmer led to ensure that it is able to respond to real life problems facing growers on the ground. In the meantime, before a new body is established, the Government needs to provide adequate funding to existing institutions for research into the development of IPM techniques.

There is already a wealth of knowledge available for farmers on how to reduce their use of pesticides. However, the issue is centralising and disseminating it to those that need it. Working with already established IPM research institutes as well as the organic agriculture bodies such as the Soil Association, Organic Farmers and Growers and the Organic Research Centre, would be a step forward. Organic agriculture is the Gold Standard of the IPM approach and what we should all be aiming to implement. Sharing of knowledge and information is a vital component to advance the IPM agenda and the barriers between 'conventional' farming and other systems need to be broken down. The Government could play a role in this by creating a research facility as mentioned above and by holding or facilitating events such as the Organic Farmers and Growers open days.

**PAN UK is calling on the Government to;**

- **Establish an independent research facility focussed specifically on IPM and agroecological methods.**
- **Increase IPM research funding for existing research institutions.**
- **Support events that will bring organic knowledge to non-organic farmers.**

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

In addition to developing a clear definition for IPM it's also crucial that pesticide users clearly understand how to adopt IPM techniques initially and how to use IPM on an ongoing basis to continue reducing their pesticide use. With this aim in mind, PAN UK has developed a framework that we call the 'IPM Ladder'. The Ladder is based on four guiding principles:

1. Grow a healthy crop in a production system which is less prone to insect attack, disease infection or highly competitive levels/ types of weed
2. Encourage maximum biological control processes for pests and diseases and weeds
3. Enhance decision making and producers' agroecological management skills
4. Prefer non-chemical methods of pest, disease, weed control when possible

Many organisations and retailers have found our IPM 'Ladder' concept useful to understand how producers can assess their current level of pesticide reliance, work out at what 'rung' their practices currently fit on the generic IPM ladder and what steps to take to continue on in their journey of pesticide reduction. Specific ladders for pest, disease and weed IPM can be developed for a specific crop, via producer, agronomist, researcher or stakeholder consultation, to identify where efforts should be made to deepen IPM methods based on the IPM principles above.

An area currently missing from the draft NAP is a commitment to phase out home and garden use of pesticides. There is no economic reason for the public to have access to potentially harmful pesticides in their homes and gardens. There are many ways in which the amateur grower can combat pests and diseases without resorting to pesticides. This is an area that the Government can support by providing information on alternatives and IPM tailored specifically to amateur needs. It could become a focus for the HSE run Amateur Liaison Group. Information supplied to amateur growers can assist in speeding a complete phase out of amateur pesticides. Proving that it is possible, France phased out all non-agricultural pesticides in 2019 without incurring any significant problems.

**PAN UK is calling on the Government to;**

- **Provide clear guidance to pesticide users on how to implement IPM on an ongoing basis.**
- **Phase out the sale of amateur use pesticide products.**
- **Use the Amateur Liaison Group to develop and disseminate messaging on IPM techniques for amateur growers.**

**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 is more a question of enforcement than awareness raising. Currently there is little effective enforcement for non-compliance around pesticides, whether that be for using professional pesticides without a certificate or using pesticides illegally or in breach of regulations. Too much of the requirements around pesticides are based on best practice guidelines which are neither mandatory nor enforceable. There needs to be more regulation surrounding the use of pesticides and the ability to enforce such legislation and penalise those that do not adhere to it. Currently, the deterrents against misuse are weak to non-existent.

PAN UK is contacted regularly by members of the public reporting the misuse of pesticides. Many of those who get in touch have previously contacted the CRD or HSE but there has been little or no follow up action taken. Not only does this impact on those affected it also undermines the creditability of the CRD and HSE in dealing with pesticide use infractions. It also allows those that are determined to ignore best practice guidance to continue using pesticides in a dangerous and harmful manner. In the rare cases where an investigation results in prosecution, the fines are too low and punishments meted

out too weak to create an effective deterrent. The failure to enforce and punish those that break the law undermines the entire pesticide regulatory regime.

**PAN UK is calling on the Government to;**

- **Make the best practice guidance, as laid out in the HSE and Defra Pesticides Codes of Practice, legally mandatory.**
- **Increase fines and penalties for those acting in contravention of legal requirements, including for anybody operating professionally without certification.**
- **Increase the capacity of the HSE to investigate pesticide issues when reported by the public.**
- **Develop an adequate reporting system for the public and others to report incidents.**
- **Publish information and data annually on the number and type of complaints pertaining to misuse of pesticide.**

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

To answer this question it would first be necessary to ascertain what the certification process would involve. If it is merely to maintain the status quo then having certified agronomists would be of little value.

It is clear that, at present, agronomic advice to farmers is mostly focussed on maintaining the use of pesticides with little in the way of advice targeted at pesticide reduction or increasing IPM uptake. This is largely due to the way in which the agronomy system works in the UK with the majority of agronomists working for, or linked to, pesticide companies or distributors and much of their income based on commission from sales of pesticides and other inputs.

The UK agronomy system needs a wholesale shake up if it is to deliver on the goals of pesticide reduction and the uptake of IPM. Farmers need truly independent advice that is focussed on the two aforementioned goals and for that to happen agronomists need to be fully trained in IPM and alternative pest and disease control strategies that do not use synthetic pesticides. Training needs to start at the various colleges and training institutes for agronomists and continue as their professional careers develop.

While the current draft NAP does acknowledge the importance of farmers being able to access independent advice from agronomists not linked to sale of products, its proposed solution is to *“...support industry to develop its advisory model to better support the uptake of IPM.”* As shown by the failure of all the various industry-led voluntary approaches that already exist in the UK to drive any reduction in either pesticide use or pesticide-related harms, asking the industry to lead the efforts on pesticide reduction is a futile exercise. In fact corporate structures oblige the pesticide industry to push for more sales and therefore profits. If the UK Government is serious about ensuring that farmers can receive agronomic advice genuinely aimed at pesticide reduction, then it must ensure that this advice is entirely decoupled from pesticide industry influence.

So to answer the question, if the training for certification were to be focussed on IPM and other alternatives to pesticides, and certification only awarded following the completion of such a course, then it would indeed be of benefit. Farmers would know that the advice they get is independent and focussed on reducing the use of pesticides, which would benefit farmers' incomes in addition to the environment and human health.

**PAN UK is calling on the Government to;**

- **Make training in IPM and other non-pesticide pest and disease techniques mandatory for agronomic advisers.**
- **Introduce a certification scheme for agronomists focussed, in part, on pesticide reduction.**
- **Decouple agronomists from pesticide companies and distributors and ensure that they are paid for giving advice and not for selling products.**

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

PAN UK is calling for a phase out of the use of amateur home and garden pesticides. There is no justification for their continued use and a phase out is both possible and necessary to reduce the overall use of pesticides in the UK and subsequently the exposure of both humans and wildlife to potentially hazardous chemicals.

In the meantime there are a number of measures that retailers can and should take to help better inform the general public about both the dangers of pesticides and alternatives to pesticides for home and garden use. Every retailer that sells pesticide products should have a member of staff trained in pesticide issues and available to answer questions from the public. There should be clear warning signs about the harmful effects of synthetic pesticides both where pesticides are displayed and offered for sale and at checkouts. Information on alternatives to synthetic pesticides should also be clearly displayed in all areas where pesticides are offered for sale.

The draft NAP states that *“The Crop Protection Association [and Horticultural Trades Association] have established online training for amateur pesticide retailers”*. Outsourcing this task to the Crop Protection Association (CPA), which represents the pesticide industry, dooms it to failure. It is not in the interest of the CPA or its members to advise gardeners to adopt IPM techniques, thereby undermining sales of their products. If the Government is serious about providing advice to amateur gardeners to encourage them to purchase less toxic products then it needs to end the involvement of the CPA in this endeavour.

Only retailers that focus specifically on gardening or DIY should be permitted to sell pesticide products. The sale of pesticides in shops that sell food, clothing and other unrelated products should be banned.

**PAN UK is calling on the Government to;**

- **Phase out the sale of home and garden pesticides completely.**
- In the meantime;**
- **Require retailers to have trained staff to advise on alternatives.**
  - **Require retailers to provide clear information about the harmful effects of pesticides on human health and the environment at point of sale.**
  - **Require retailers to provide clear information about alternatives to pesticides for customers.**
  - **Restrict the sale of pesticides only to retailers such as garden centres and DIY outlets.**

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

At present the reporting system for pesticide incidents is difficult to access for the general public, lacking in its ability to follow up if a complaint has been made and lacking in capacity to monitor, investigate or enforce pesticide incidents. The CRD is not set up to effectively investigate and remedy

pesticide-related incidents. This has resulted in a major accountability gap within the UK pesticide regime. Too often PAN UK has heard from members of the public who have tried to report an incident but whose report has been ignored or mishandled. There needs to be a dedicated enforcement unit, separate from the CRD or HSE, which can monitor complaints and undertake investigation and enforcement actions.

**PAN UK is calling on the Government to;**

- **Create an incident reporting system that is easy to access and clearly understandable by the public.**
- **Establish a separate unit focussed solely on dealing with pesticide-related incidents which has the power and capacity to investigate and enforce legislation.**

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

In terms of professional use pesticides, particularly those for agricultural use, it should be made mandatory that the company that either manufactures or distributes the product has a legal duty to collect or receive used containers or obsolete (no longer approved) pesticide products. This scheme should be run at no extra cost to pesticide users including farmers.

Once collected, containers should be reused or recycled wherever possible as the majority are made of plastic and reducing plastic pollution is a key objective of the Government. As an incentive, the Government should consider introducing a deposit scheme for pesticide containers.

**PAN UK is calling on the Government to;**

- **Instigate a mandatory return and collection scheme for manufacturers and distributors of pesticide products.**
- **Instigate a deposit scheme for pesticide containers to incentivise farmers and other users to return empty containers in an appropriate manner under the scheme outlined in the point above.**

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

In an ideal world the public would not have access to pesticide products that could cause problems for human health or the environment. However, until we introduce a ban on non-agricultural pesticides, it is crucial that there are effective ways of informing the public when a product is no longer approved for use. This can be broadcast via the gardening media (magazines, TV and radio) and perhaps, more importantly, in garden centres and other retail outlets where pesticide products are sold.

In addition to needing to know when a pesticide has been banned or taken out of use, the public also needs to be able dispose of non-approved pesticides in a safe manner. Every council in the UK must be legally required to provide a facility for the disposal of home and garden pesticides for the general public. Retailers should also offer the public the option to return unused pesticides and empty containers to the shop where they purchased the product.

**PAN UK is calling on the Government to;**



- **Make it mandatory on councils and local authorities to provide safe disposal sites for pesticides and for these to be clearly advertised and accessible to all.**
- **Introduce an amnesty for six months for the public to dispose of any unapproved pesticide product.**
- **Require retailers selling pesticide products to display information informing the public when a product has been withdrawn from use, including instructions outlining how people can safely dispose of it.**
- **Require retailers to introduce a return system for pesticide products, whereby the public can return empty containers of unused products to the point of purchase.**

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

This is one area where the UK has been proactive and maintained a higher standard than that required by the EU Directive on the Sustainable Use of Pesticides. This needs to be retained and a compulsory annual sprayer testing regime should be in place for all users, with the exception of knapsacks.

**PAN UK is calling on the Government to;**

- **Maintain the requirement that pesticide sprayer equipment is tested annually.**

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

The notion that pesticides can be used safely is false – they are poisons and their job is to kill living organisms. If we want to change then a paradigm shift in our approach to pesticides is required. Reducing and ultimately ending the use of pesticides in all sectors should be the goal of the UK Government if it wants to reverse biodiversity losses, protect soil and water and ensure a safe environment for all that live in the UK.

New safety measures should be introduced in the final revised NAP including mandatory public prior notification of spraying. The NAP should introduce a requirement for all professional users of pesticides to notify surrounding residents before spraying. With regards to non-agricultural pesticide use, signage in parks and green spaces should inform members of the public when spraying will take place so people can choose to avoid the area, especially if accompanied by young children or pets who are particularly vulnerable.

In addition, the public should have access to spray records upon request. We have a right to know which pesticides are being sprayed and when, but this information is not currently available in the UK. If someone suspects that they have been exposed to pesticides it is vital that they know which specific pesticides have been used. Adoption of such a basic measure could aid in the swift diagnosis of a health problem following a pesticide exposure incident. The current draft NAP says nothing about prior notification nor access to spray records.

**PAN UK is calling on the Government to;**

- **Work towards a major reduction, an ultimate end, to pesticide use by introducing ambitious and time bound pesticide reduction targets.**
- **Commit to phase out, and ultimately ban, the use of pesticides in the amenity sector (including urban pesticides).**
- **Commit to ending the sale of pesticides to the public**
- **Introduce mandatory prior notification for the public, signage for parks and green spaces detailing spray schedules.**

- **Grant the public access to spray records.**

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

If we are to effectively tackle pesticide-related harms, it is vital that accurate and timely data is made available for all areas where pesticides are used. Furthermore, this data needs to be presented in a transparent and clear manner that is freely available to all interested parties including the public, researchers, academics, journalists and civil society organisations.

The current PUSSTATS system does not fulfil that function. It is slow to present data (currently much of its data has not been updated since 2016), has large data gaps and is cumbersome to use, particularly for a casual reader. Similarly the information provided in the Pesticides Forum annual report is not clearly presented and not widely advertised and therefore difficult to access for the general public. There needs to be a major overhaul of how data on pesticide use is collected, presented and disseminated.

Farm spray records must be made available to interested parties and accessible to the public. In addition to assisting with assessing both the efficacy and post-approval impacts of specific pesticides, providing public access to farm spray records could help provide significantly more effective responses to pesticide exposure incidents. PAN UK receives many calls from members of the public who have been exposed to pesticides and are now suffering the health impacts but aren't able to find out what exactly they have been exposed to. Their inability to identify the active substance greatly reduces their chances of receiving effective medical treatment.

Greater detail on ongoing issues of efficacy also need to be monitored and reported on. Currently there is no way of knowing how much of pesticide use is effective, let alone necessary. Better monitoring of efficacy, and the publication of efficacy data, will help identify where pesticides are being overused and also highlight areas where resistance may develop as a result.

In addition, PAN UK has for many years been calling on the Government to provide access to pesticide sales data. Until now this information has been hidden behind the shroud of commercial confidentiality. However, many other countries do collect and disseminate such data and there is no reason why the UK should not do so.

There are a number of areas that could and should be improved in order to present a more useful set of statistics for those that use them. They include:

- Mandatory access to farm spray records for all interested parties, including the public.
- A mandatory requirement for all local authorities to publish data on pesticides that are used by both their own staff and contractors they employ to carry out spraying.
- A mandatory requirement that all professional pesticide users in the amenity sector submit their spray records and that these are compiled and published on an annual basis.
- Specifically, in terms of PUSSTATS, PAN UK recommends the following improvements are made:
  - More detailed geographical information – ideally down to field level but, as a minimum, this should be county level rather than the current regional approach
  - Presentation and dissemination of the raw data should be made available to users and the tables and graphs should be downloadable to enable analysis
  - An annual report of findings should be published, as is the case with reports from the Expert Committee on Pesticide Residues in Food (PRiF)

- Addition of data on treatment frequency
- Addition of data on the variety of pesticides being used e.g. how many different active substances
- Greater frequency of reporting with a shorter lag between surveys and publishing the results
- Information on active / crop combinations rather than the current class / crop combination

All of these measures would make the information more accurate and usable and present a clearer picture of pesticide use in the UK. The current lag in reporting, and the fact that not all uses are reported at the same time or in a consistent manner, means that the current statistics are really just an incomplete snapshot in time. The information needs to be both more dynamic and more robust.

Making field level reporting of pesticide use in real time a mandatory requirement for all users would help considerably in addressing the issues raised above. In this digital age it is not really too much of a stretch to make this happen. Understandably with paper records that would not have been possible but this is no longer the case.

**PAN UK is calling on the Government to;**

- **Make reporting of and access to farm spray records mandatory**
- **Make reporting of and access to amenity use pesticide data mandatory**
- **Overhaul the PUSSTATS database so that it includes the measures outlined above**
- **Provide information on pesticide sales data**
- **Provide information on pesticide efficacy post-approval**

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

Three strands should be seen as priority areas; biodiversity, soil and water. Monitoring of all three at local, landscape and national scales is vital if we are to truly understand both the impact of pesticide use and any gains that might be made following the introduction of measures under the revised NAP.

For soil and water it is important that levels of pesticides are monitored, pre, during and post use. The information generated would help in better understanding issues of persistence and pesticide mobility. For biodiversity it is important that data from a wide range of taxa, including wild plants and insects, is considered when monitoring impacts. For all wildlife, both lethal and sub-lethal impacts should be taken into consideration

In terms of research there needs to be a focus on how pesticides work in combination to impact the environment, and particularly aquatic and terrestrial biodiversity. At present the research focus is largely on how single active substances affect the environment but this is not the real world situation in which pesticides appear in millions of different combinations in varying concentrations in our landscape.

There is an urgent need for better monitoring of amenity pesticide use and how this impacts on our urban environments, particularly urban biodiversity and water quality. Hard surface application of pesticides can be particularly problematic in terms of runoff to water courses resulting in the contamination of aquatic environments and subsequent entry of pesticides into drinking water sources. Little is also known about the impact on urban flora and fauna from the use of amenity pesticides – a research gap that urgently needs to be filled.

The current draft NAP does include proposals on environmental monitoring but largely relies on existing schemes which have proved to be inadequate. As just one of a number of examples, the draft mentions the Wildlife Incident Investigation Scheme (WIIS) which does provide some useful data on illegal pesticide use but is ineffective in terms of investigation and follow up. The 'Pollinating Insects' section on page 45 of the draft lists a number of plans but does not propose any new initiatives, despite the urgency of reversing pollinator declines. It mentions the National Pollinator Strategy (NPS) as a solution, but the NPS currently makes no firm commitments to support pesticide reduction and simply links back to the NAP. Ensuring that the NPS and the NAP link coherently together to both monitor impacts on and protect pollinators from pesticides is crucially important.

**PAN UK is calling on the Government to;**

- **Adopt a system for monitoring pesticide contamination of soil and water.**
- **Increase monitoring of the impacts of amenity use pesticides and how it impacts on the environment, urban biodiversity and water quality.**
- **Ensure that the WIIS scheme is adequately resourced and more attention is paid to investigating reported incidents.**
- **Ensure that the NAP and the NPS work together to develop systems for monitoring and protecting pollinator populations across the UK.**
- **Develop wider biodiversity monitoring that goes beyond farmland birds and incorporates other taxa and includes both lethal and sub-lethal impacts.**

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

There is an urgent need to conduct research on a number of topics which are major gaps in our understanding of how pesticides impact health: the chronic effects of pesticide exposure on the general public (including via diet), the impacts of occupational exposure for spray operators, and the impact of direct exposure on vulnerable groups such as children, pregnant people and the elderly.

In addition, there needs to be much more focussed research on two key areas impacting human health; low dose impacts of pesticides and combinatory/synergistic effects (also known as the 'cocktail effect'). There is a growing body of evidence showing that low doses can have elevated effects compared to the more common assumption that 'the greater the dose the greater the poison'. This is particularly the case for Endocrine Disrupting Chemicals (EDCs) which should be an area for urgent focus. Similarly, the cocktail effect remains poorly understood and safety assessments continue to be carried out for one pesticide at a time. However, in reality people are exposed to a wide range of chemical mixtures in their daily lives. The current approach of looking at individual active substances in isolation neither reflects real life circumstances nor allows us to properly understand the health impacts of pesticides.

In addition to significantly expanding pesticide research, the UK also needs an improved health monitoring system which would provide invaluable insights into how pesticides are affecting human health. The current health 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. 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 is still one very clear problem specific to the UK that needs to be addressed. Namely, the lack of involvement of the Department of Health and Social Care (DHSC). Despite years of effort by PAN UK

and other organisations to engage the DHSC in pesticide issues, it continues to assert that it is not part of its remit. If we are to effectively tackle health harms caused by pesticides then we need a clear acknowledgement from the DHSC that pesticides are not only an environmental issue but are equally an issue of great importance for human health. We then need the DHSC's focus to expand accordingly to include work on pesticides.

**PAN UK is calling on the Government to;**

- **Support research on the human health impacts of pesticides including but not limited to the following areas; chronic effects, occupational exposure, dietary exposure, impacts of direct exposure on vulnerable groups, low dose and combinatory effects.**
- **Develop a robust monitoring system that will look at the effects of pesticides on human health.**
- **Ensure that the DHSC expands its focus to include pesticides.**

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

PAN UK is hugely supportive of the commitment in the draft NAP to *“Establish a clear set of targets for reducing the risks associated with pesticide use by the end of 2022”*. These targets will be the key vehicle to drive progress and against which the success of the NAP can be measured on an ongoing basis.

Setting clearly defined targets is recognised as a useful policy tool for establishing aspirations and driving action. National targets have already been laid down in other policy areas to help tackle important environmental issues such as carbon emissions and landfill waste

National targets are particularly appropriate in the field of UK pesticide policy because of the wide variety of actors involved in monitoring and regulating pesticide use across a range of sectors. UK pesticide policy is currently set using a siloed approach which fails to take into account, let alone mitigate, the cumulative impacts of the various pesticides that are being deployed. The introduction of pesticide targets would provide an over-arching framework to co-ordinate the work of multiple stakeholders and ensure that the various measures complement each other and contribute to a common goal. It would help consolidate the wide range of existing Government activities on pesticides, ensuring that they deliver outcomes that are more than the sum of their parts.

Crucially, it would also provide UK farmers with clarity as to the Government's direction of travel in terms of pesticide use, enabling them to make long-term decisions.

The targets could be devised and framed in a variety of ways. PAN UK recommends that targets be set for both use and risk reduction. Including a measure of toxicity to humans and wildlife will ensure that the pesticides known to be most directly harmful are reduced first and fastest. But cutting overall use is also needed to ensure that indirect and poorly understood effects from pesticides are reduced. For example, some herbicides may not be categorised as highly toxic, but by wiping out all wild plants – not just specific problematic weeds – they remove important sources of nectar and pollen that bees and other insects depend upon.

Focusing on setting reduction targets for the use of Highly Hazardous Pesticides (HHPs), those that have the greatest potential for harm to human health or the environment, should be the priority.

In order to effectively measure pesticide usage in the UK, and to assist as an indicator for a pesticide use reduction plan, the UK Government should adopt a more sophisticated monitoring system that is able to better assess how overall pesticide use might be impacting human health and the

environment. There are a number of such systems currently in use in other countries which the Government should explore in order to see which would be most appropriate to the UK context. The details of these monitoring systems differ but (as mentioned above), crucially, each is underpinned by metrics which take into account the toxicity of pesticides being used, rather than solely monitoring by weight of active substance applied.

France, for example, uses the metric of Number of Unit Doses (NODU) which makes it possible to estimate an average number of treatments per hectare and thereby measure how intensely pesticides are being used. Denmark, meanwhile, used Treatment Frequency Index (TFI) for many years which, when combined with actual use data, made it possible to calculate the difference between the applied dose of a pesticide and its recommended dose, allowing a clearer picture of the intensity of pesticide treatment for a given crop area to be measured.

Recently however, Denmark has adopted a new metric – the Pesticide Load (PL) – which has replaced TFI as its official ‘pesticide risk indicator’. The PL consists of three sub-indicators for human health, ecotoxicology and environmental fate. In addition to being used to monitor trends in pesticide use and load, it is also used for setting quantitative reduction targets. PAN UK is highly supportive of the proposal in the draft NAP to adopt a Pesticide Load Indicator and urges the UK Government to look closely at the Danish model which could be applied here.

Prior to leaving the EU the UK adopted an approach to monitoring pesticide use based on a set of ‘Harmonised Risk Indicators’ that take into account both sales and usage levels of active substances. The approach includes a ‘hazard quotient’ that is applied to individual active substances. The hazard quotient divides approved active substances into three categories; those that are deemed low risk, those that are approved and ‘normal’ risk, and those that are considered candidates for substitution (meaning that they are of particular concern due to their negative impacts on health or environment and therefore a less toxic alternative should be found). There is also a category for actives that are not approved but which might be used under certain exceptional circumstances, such as an emergency use derogation. This system should allow changes in usage levels of different classifications of pesticides to be monitored and assist in designing policies and programmes to support farmers to reduce usage accordingly. Given that the nuts and bolts of this particular system are already in place it would seem worth considering maintaining it as part of any overall monitoring system.

**PAN UK is calling on the Government to;**

- **Introduce ambitious and time bound pesticide use and impact reduction targets as a priority.**
- **Introduce a monitoring system based on toxic load and treatment frequency of pesticides.**
- **Introduce the Pesticide Load Indicator proposed in the draft.**
- **In the short term at least, use the Harmonised Risk Indicator system carried over from the EU regime.**

**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?**

It is important that there is a system for oversight of the NAP implementation and a body that can work toward developing the measures such as reduction targets prior to the implementation phase. However, at present there is no adequate body in place to achieve either of these ambitions. The Pesticides Forum and the Voluntary Initiative are both unfit for the purpose for a variety of reasons, not least the over concentration of vested pesticide industry interests that sit on both bodies.

But there is a clear need for such a body and perhaps that which offers the best model at present is the advisory committee of the National Pollinator Strategy (NPS). This is made up of a fair balance of

civil society, farming and associated industry and academic representatives. It would need to have regular meetings scheduled and a clear agenda in place for dealing with NAP related issues.

**PAN UK is calling on the Government to;**

- **Establish a stakeholder forum that properly represents all concerned with pesticide issues to lead on delivery of the NAP. If a new body is not created, consider giving this task to the NPS advisory committee.**

**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?**

Now is the time for the UK to bold in tackling the issues of pesticides if we are to go forward farming sustainably and ensuring a healthy environment for people and biodiversity. The NAP needs to set ambitious measures that will dramatically change the way in which pesticides are used and perceived among the farming community and other users, decision makers and the public at large.

We have seen, and the data backs it up, that the current approach to pesticide regulation falls short of providing effective protections. It needs to be clearly stated that a reduction in the use of pesticides and the harms that they cause are the goals of this and future Governments.

There are some positive measures put forward in the draft NAP but there is also an over reliance on measures and approaches that have consistently failed to address the very real problems associated with pesticide use in the UK. In many areas the draft continues to rely on voluntary approaches and industry self-regulation to drive change. However, as best highlighted by the failure of the Voluntary Initiative to drive a reduction in pesticide-related harms, this approach has actually seriously hampered the development of a progressive agenda on pesticides in the UK over the past years as pesticide use has continued to rise.

Another major and related stumbling block is the lack of understanding that those making pesticides have a vested interest in maintaining the status quo. Despite their profit motive, the pesticide industry continues to be treated as a partner in efforts to reduce both usage and harms. This is an approach which has repeatedly undermined efforts to improve pesticide regulation in the UK and will continue to do so unless altered.

The new NAP must make it clear that the best way to achieve the objective of reducing the use and harms caused by pesticides is to introduce regulation clearly focused on achieving that goal. We have tried both voluntary approaches and industry self-regulation for many years and they have failed. The UK must learn from its mistakes and change its approach.

While PAN UK recognises that agricultural use of pesticides is the main cause of problems there is a lack of focus on non-agricultural pesticide use in the draft NAP. This is a missed opportunity which needs to be addressed. Again, in the amenity sector, it seems that the draft NAP is relying on industry self-regulation to achieve its objectives. The Amenity Assured scheme operated by the Amenity Forum is not fit for purpose, instead relying on a weak set of standards that do not in any way promote a reduction or end to the use of amenity pesticides. It is in effect merely another industry body opposed to developing measures that would reduce, let alone eliminate, the use of pesticides in the amenity sector.

As PAN UK has pointed out repeatedly there is no need whatsoever for using pesticides in the amenity setting. Many other countries and numerous towns and cities in the UK have already shown that it is possible to either severely reduce the use of pesticides or eliminate it altogether. Instead of relying on

the industry to police itself the UK needs to introduce a plan to phase out and end the use of pesticides in the amenity sector. Introducing a target and timeline for this to happen, as well as supporting SME's that are providing non-chemical alternatives for the amenity sector, would be a much more efficient and effective way of reducing, an ultimately ending, the harms caused by amenity pesticides.

A related area that also gets little mention in the draft NAP is the use of home and garden pesticides. The draft NAP states that pesticides are "*...likely to remain useful tools for many gardeners*". While this might be true, pesticides do not remain necessary for home gardeners and presenting them as such shows a disappointing lack of Government leadership. The Government should be working towards ending the sale of pesticides to the home and garden market and providing information on how gardeners can combat pest and diseases without the use of potentially harmful chemicals.

Other key areas that are missing from the draft NAP and should be included in the final version include:

- No mention of support for organic agriculture or plans for helping non-organic farmers to learn from organic growers' knowledge on managing pests and diseases without pesticides.
- Forestry use of pesticides is not mentioned. As there is a race to meet tree planting targets, this will increasingly become an issue and we recommend that a section is added on how foresters will be supported to implement IPM and reduce reliance on harmful pesticides.
- The aquaculture sector is a significant user of pesticides and a contributor to the contamination of water bodies, both marine and freshwater. There is no mention in the draft NAP of how the Government is looking to address what is a significant environmental risk from these uses.
- There is nothing in the draft NAP about restricting the use of pesticides around areas of habitation such as rural homes and schools in order to protect human health.
- There is nothing about supporting research and development of nature-based solutions for dealing with pests and diseases. Undertaking such research and disseminating it to farmers will not only help to reduce the use of pesticides but will also benefit farmers in terms of meeting any future environmental requirements under the ELM scheme.

**PAN UK is calling on the Government to;**

- **Be 100% clear that its aim is a major reduction in both pesticide use and pesticide-related harms, and introduce ambitious measures accordingly.**
- **End the reliance on voluntary approaches and industry self-regulation and replace all such initiatives with enforceable regulation.**
- **Be realistic about the pesticide industry's profit motive and stop treating it like a partner in pesticide reduction, thereby allowing it to undermine efforts to reduce pesticide-related harms.**
- **Phase out amenity and amateur pesticide use.**
- **Introduce mandatory buffer zones around residential buildings in rural areas.**
- **Ensure the following omitted topics are included in the final revised NAP:**
  - **Forestry**
  - **Aquaculture**
  - **Support for organic**
  - **Bringing organic and non-organic growers together to share learnings**
  - **Research and development on nature-based solutions and agroecological methods for managing pests and diseases**