

UK National Action Plan for the Sustainable Use of Pesticides (Plant Protection Products)

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UK national action plan for the sustainable use of pesticides (plant protection products)

Purpose

1.1 This is the UK's National Action Plan (NAP) to meet the obligation on Member States under Article 4 of EU Directive 2009/128/EC establishing a framework for Community action to achieve the sustainable use of pesticides¹ which has been transposed in the UK by the Plant Protection Products (Sustainable Use) Regulations 2012 (the PPP (SU) Regulations 2012; SI 2012 No' 1657)².

1.2 It has been developed following consultation with stakeholders, including the public, as required by the Directive.

Background

Legislative background

2.1 Regulation (EC) No 1107/2009 regulates the marketing of plant protection products in the EU (and repealed and replaced previous rules in Council Directive 91/414/EEC on 14 June 2011). The Regulation aims to harmonise, as far as possible, the overall arrangements for authorisation of plant protection products within the EU. It sets out rules and criteria which must be met for EU approval of pesticide active substances, and for member State authorisation of pesticide products. The Regulation, which is supported by domestic enforcing regulations, sets out common rules and guidance on data requirements; data evaluation; risk assessment; the protection of commercial information (data protection); and public access to information on pesticides.

2.2 In addition, EC Regulation 396/2005 provides a harmonised system of setting Maximum Residue Levels (MRLs) for all foods treated with pesticides. MRLs are not safety limits but reflect the largest amount of pesticide which the regulatory body setting the MRL would expect to find in that crop when it has been treated in line with good agricultural practice.

2.3 In addition to these controls, the EU Directive on the sustainable use of pesticides, published in 2009, provides a framework to achieve a sustainable use of pesticides, specifically by "reducing the risks and impacts of pesticide use on human health and the environment and promoting the use of integrated pest management and of alternative approaches or techniques such as non-chemical alternatives to pesticides." To facilitate implementation of the Directive, Member States are required to develop and submit NAPs to the European Commission.

¹ Official Journal L309/71 24.11.2009

²<http://www.legislation.gov.uk/ukSI/2012/1657/contents/made>

2.4 The NAPs are to be developed with public participation, and in addition to any periodic public consultations, comments are welcome on the UK Plan at any time. The Directive requires NAPs to be reviewed at least every five years.

Scope of the Plan

Products

3.1 Pesticide is a general term that includes a variety of chemical and biological products used to kill or control living organisms such as rodents, insects, fungi and plants. The definition of pesticide in Article 3 of the Sustainable Use Directive follows this broad general term. However Directive currently only applies to plant protection products, defined under Regulation (EC) 1107/2009 as those pesticides used to protect plants and plant products from pests, diseases and weeds (essentially agricultural, amenity and home garden pesticides). This NAP therefore only covers such products. It does not cover 'biocides' (such as wood preservatives or disinfectants) or veterinary medicines (such as sheep dip chemicals) which are subject to separate policies and regulatory requirements. Where the term "pesticides" is used in this document it refers only to plant protection products.

Geographical coverage

3.2 As this is a UK Plan it covers England, Scotland, Wales and Northern Ireland. Devolved governments have contributed to its development and will be involved in its review. Annex 1 gives current information on pesticide use in the UK regions. The terminology for current schemes used in this strategy is accurate at the time of publication. However, the devolved governments (and Defra in England) may develop in the future parallel but different agricultural or environmental schemes to reflect priorities within their territories.

Life-cycle

3.3 This Plan covers those stages of the pesticide life-cycle relevant to the requirements contained in the Sustainable Use Directive. It therefore includes legislative and other controls on the marketing of pesticides, on the use of pesticides and on pesticide residues in foods and other areas affected by pesticides degradation and disposal. As required by the Directive, the Plan takes account of the health, social, economic and environmental impacts of pesticides (whether potentially positive or negative) to protect the health of people (operators who apply pesticides, other workers, residents and bystanders and consumers) and the environment (water and aquatic environment and biodiversity).

Strategic background

4.1 The Plan builds on the actions and experience gained from the two previous pesticides strategies but reflecting the priorities of the Coalition Government, particularly in reducing the burdens on business and reducing the costs, and, where appropriate, the activities of Government. The Plan follows the direction of travel set out in the 2010 document "Consultation on the implementation of EU pesticides legislation; summary and government response" of 15 December 2010.

4.2 The NAP stands in its own right as the central vehicle for continuing to deliver the responsible use of pesticides. However, it also supports wider Government objectives for health protection, the environment and for agriculture. For England, these include:

“Improving the productivity and competitiveness of food and farming businesses, with better environmental performance”;

“Helping to enhance the environment and biodiversity to improve quality of life”;

“Adopting a proportionate approach to regulation and removing unnecessary burdens”.

4.3 The Scottish Government (SG) is also actively trying to reduce the burden of bureaucracy on Scotland’s rural land managers. A review is underway to consider how to reduce the red tape associated with farming and help farmers free up time for farming.

Delivery of the UK plan

5.1 The Plan will be managed by the Chemicals Regulation Directorate (CRD) of the Health and Safety Executive as the UK pesticides regulator. Strategic oversight will be maintained by Defra who have responsibility for pesticides policy, in collaboration with policy units in devolved governments. Other Government Departments may also have an interest in specific elements of the Plan.

5.2 The Plan can only be delivered through Government working in partnership with a wide range of stakeholders including the crop protection industry and the wider agriculture, horticulture and amenity interests and other non-government organisations. The Government is keen to ensure that regulatory burdens on businesses are kept to a minimum and reduced/removed wherever possible. For pesticides, this means that the Plan aims for non-regulatory approaches to be adopted as much as possible, and looks to stakeholder partners to deliver these. Of particular relevance in delivering the non-regulatory measures in the Plan are the two key stakeholder organisations, the Voluntary Initiative³ for pesticides for agriculture and horticulture, and the Amenity Forum⁴.

5.3. All pesticide users, and especially professional users, have a key role to play in ensuring the success of the Plan in reducing the risks and impacts from pesticides on human health and the environment by:

- adopting an integrated approach, drawing on all available techniques to tackle pests, diseases and weeds;
- complying with all relevant regulations and record keeping requirements for pesticides;
- complying with any Codes of Practice and following guidance – including that from industry groups such as the VI - for using pesticides;
- supporting the measures in this plan relevant to their sector.

³ <http://www.voluntaryinitiative.org.uk/>

⁴ <http://www.amenityforum.co.uk/>

Stakeholder oversight

6.1 Development of this Plan has included consultation with UK stakeholders including the public. Ongoing stakeholder input and oversight will be carried out by the UK Pesticides Forum, a stakeholder group, which has provided advice on responsible pesticide use to government and industry for many years (see Annex 2 for more information on the Forum). The Forum will keep the Plan under continual review, and where necessary, in consultation with Government, will set up short-life expert working groups to consider specific issues which arise or are identified. The Forum will produce an Annual Report on developments in the Plan.

6.2 The Forum will be assisted in its work by three standing working groups covering the amenity and amateur uses of pesticides and wider agricultural and horticultural grower issues.

Key issues to be addressed in the Plan

7.1 This Plan takes account of legal obligations and ensures that implementation will be done in accordance with the government's wider policy objectives. The measures which are developed are intended to be proportionate to the risks which exist. The Pesticides Forum has developed a suite of indicators to monitor how pesticides are being used and the impact they are having. Their most recent reports⁵ conclude that overall pesticides are being used in accordance with the authorised conditions of use, by a skilled workforce, using well-maintained equipment. However, there are areas where a need for further action has already been identified:

- Protection of water. Residues of some pesticides, particularly those in slug pellets and herbicides applied to autumn sown cereals and oilseed rape crops are detected in water in certain parts of the UK with a frequency and concentration that may compromise the UK's ability to meet its obligations under the Water Framework Directive;
- Whilst there are many examples of best practice amongst amenity and amateur users, overall these sectors are not operating to the same high standards employed in agriculture;
- Whilst virtually all users adopt some elements of an integrated approach to managing pests, weeds and diseases there is scope, and a need in view of the declining number of pesticide products, to develop a greater range of viable techniques and ensure these are adopted by users.

7.2 The UK NAP will focus, initially, on these areas. However, the impact of pesticide use will be kept under review through the Annual Reports and new priorities/ actions developed if and when necessary.

⁵ <http://www.pesticides.gov.uk/guidance/industries/pesticides/advisory-groups/pesticides-forum>

Objectives, targets, measures and timetables

8.1 The regulatory risk assessment and risk management process is very effective at identifying and mitigating risk. However the process relies upon the fact that pesticides are used responsibly. If products are not used responsibly, this has the potential to undermine assumptions made in the risk assessment process. This NAP and the controls developed under it promote risk reduction as set out in the Sustainable Use Directive. The Government does not consider that focussing on use reduction is effective in reducing risk as the correlation between the two is often weak.

8.2 The Government has used numerous sources of information to underpin the development of this plan. These include surveys of pesticide usage and practice in the agricultural and non-agricultural sectors (including non-professional use); results of inspections of agricultural users; cropping statistics and availability of methods of control; rates of adoption and impact of industry initiatives; monitoring of the impacts of pesticide use on human health, water quality and wildlife.

8.3 It is important to monitor progress on risk reduction and a lot of work has been done in this area by the Pesticides Forum. This work has shown that it is not possible to understand changes in the impacts of pesticide use solely on the basis of mathematical calculations/ modelling from the chemical properties of pesticides, but that information is also needed on user practice. The Forum's current suite of indicators will continue to be developed to help understand the scale of risks and their trends. This will be done in a manner that is proportionate to the risks which exist. Production of indicators can be costly and time-consuming, and it would be counter-productive to divert valuable stakeholder and Government resources away from activities designed to reduce risk.

8.4 Progress in the priority areas will be looked for over the five years of the Plan. Indicators will be examined annually in the Pesticides Forum report to provide the quantitative measure of this progress.

Measures and actions

Training of users, distributors and advisors

Overview

9.1 Ensuring that those who use or advise on the use of pesticides are trained is key to ensuring that these chemicals are used sustainably. Training programmes are a mechanism to ensure that users are aware of their legal obligations and are able to identify and mitigate risks associated with pesticide use.

9.2 There is a healthy market which sustains the private sector supply of initial and on-going training for users, distributors and advisors, driven by a long-standing regulatory requirement in the UK for users, advisors who work for distributors, and storekeepers to be trained and certificated.

9.3 Market demands also ensure that independent advisors are trained, as those who require the use of pesticides (particularly farmers) will not risk the loss of valuable crops, reduced crop yields or prosecution by taking advice from unqualified sources. The advisor role is a highly specialised and responsible profession and one where it is essential to be appropriately qualified. The industry supports this in that, for example, all members of the

Association of Independent Crop Consultants⁶ (AICC) must be suitably qualified and BASIS Professional Register members.

Additional Training

9.4 In addition to statutory training, non-statutory industry initiatives going beyond the minimum legal requirements have resulted in over 20,000 users participating in on-going training programmes. These users apply pesticides to over 80% of agricultural area treated with these chemicals.

9.5 Comprehensive non-statutory arrangements are in place to provide additional training to advisors in the form of a programme of Continuous Professional Development, and there are over 4,000 individuals following this. UK Crop Assurance schemes require that where an advisor, consultant or trade representative advises on pesticide usage on farm, they must be a member of the BASIS Professional Register. To employ an advisor who is not a member of the BASIS Professional Register is recorded as a major non-compliance and a 'critical failure' for schemes such as the Red Tractor assurance schemes for farms⁷. This is also a key requirement for many retailer protocols. The requirement of membership of an industry recognised and supported continuing professional development (CPD) scheme are important in ensuring that an advisor's knowledge is kept up to date with current legislation, technology and methodology, and helps to meet the requirement that 'guidance recognises that users need to take into account the appropriate level of pest, weed or disease control necessary in particular situations when deciding their control strategy.

Regulatory measures

9.6 The existing comprehensive regulatory framework for training and certification of those who work with pesticides means that additional extensive regulation is not required. Rather, a slight reframing of these arrangements in the PPP (SU) Regulations 2012 is adequate to establish the arrangements envisaged in the Directive.

9.7 Initial training and certification for users is provided by regulated private sector organisations and institutions such as agricultural colleges. Training is delivered in accordance with a syllabus developed by the City and Guilds Land-based Services⁸. The training is modular – with compulsory core elements and specialised training available depending upon the type of application equipment employed by the user.

9.8 Initial training and certification for distributors and advisors is also provided by regulated private sector organisations and institutions such as agricultural colleges. Training is delivered in accordance with a syllabus developed by BASIS (the Certificate in Crop Protection).

9.9 The PPP (SU) Regulations 2012 require all users of pesticides authorised for professional use to hold a certificate evidencing training, apart from those who were historically allowed to rely on an age-based exemption under the previous UK law. These exempt users, known as "grandfather rights holders" will be subject to the requirement to hold a certificate from 26 November 2015. The Regulations also provide that the government shall designate bodies competent to award or withdraw certificates.

⁶ <http://www.nationalrural.org/organisation.aspx?id=0eb463d7-3200-4d29-89ed-2814ef4c0d92>

⁷ <http://redtractor.org.uk/why-red-tractor/>

⁸ <http://www.cityandguilds.com/57580.html>

Non-regulatory initiatives

9.10 Ongoing training for users is provided by private sector organisations and institutions such as agricultural colleges. Training is delivered in accordance with a syllabus developed by the City and Guilds Land-based Services National Register of Spray Operators (NRoSO). Members of the register must accumulate and maintain 'points' over specified time period (NRoSO allocates points to training events).

Sales of pesticides

Overview

10.1 The vast majority of pesticides for professional use are sold 'on account'. This means that the purchaser is known to the distributor in most cases. Where the user is not known, a responsible distributor will make further enquiries before making any sales. Pesticides used in agriculture are usually purchased on the basis of recommendations from professional agronomists. Figure 1 [at the end of the document] shows a diagrammatic representation of the pesticides supply chain.

Regulatory Measures

10.2 The PPP (SU) Regulations 2012 require:

- distributors (other than micro-distributors) who sell to end users to have available sufficient staff holding a certificate demonstrating that knowledge of the subjects listed in Annex I of the Sustainable Use Directive (as appropriate) in order to provide relevant information to customers;
- that any person who purchases a pesticide must ensure that the end user will hold a certificate or work under the supervision of someone holding such a certificate;
- distributors selling products for non-professional use to provide general information on risks, good practice and low-risk alternatives; and
- that anyone who stores pesticides takes 'reasonable precautions' to ensure that storage does not endanger human health and the environment.

Non-regulatory arrangements

10.3 The key industry initiative is the BASIS⁹ nominated storekeeper certificate of competence which covers: legislative requirements (including pesticides, environmental and worker protection); and managing the store (best storage practice, transportation and emergency procedures).

10.4 Information is provided to non-professional (amateur) users through product labels which have been designed to be clear and simple and which are required to set out information on product identity, correct usage and safety information. The information has been and will continue to be supplemented by initiatives developed by Government and other stakeholders working together. All products available to amateur users can be used safely without particular training or equipment.

⁹ <http://www.basis-reg.com/professionalregister/default.aspx>

Information and awareness-raising

Overview

11.1 Government and other stakeholders employ a variety of measures to share general and specific information on the risks and benefits of pesticide use with the general public. A wide range of comprehensive advice and information on pesticides is available on CRD's website¹⁰. Information on pesticides also comes through the monitoring systems in place to provide pesticide indicators (see later section on indicators). The most common situation in which members of the public require information on pesticides is through the purchase and use of non-professional products. The controls on this are explained in more detail later in this Plan.

Regulatory Measures

11.2 Regulatory measures will be used wherever they are an appropriate mechanism for sharing information or raising awareness of sustainable ways of using pesticides. For example in recent years, changes have been made to the labelling and packaging of non-professional slug pellet products to reduce the risk of spillages, and to the labelling of professional products for use on hard surfaces to help ensure products are applied in a way which corresponds to assumptions made in the risk assessment process.

Non-regulatory initiatives

11.3 Government and industry representative organisations will encourage distributors to remind purchasers of their legal obligation to hold a certificate appropriate to the use of the product they are purchasing. Storekeepers undertake training so that distributors can demonstrate that they have taken 'reasonable precautions' to avoid endangering human health and the environment.

11.4 Part of the CRD section of HSE's website is dedicated to providing information on pesticides to non-professional users, to ensure they consider the use of a pesticide is really necessary, and if so, what risks may arise from pesticide use and how to mitigate these.

11.5 The National Farmers Union has developed a 'Good Neighbour' Initiative in recognition that some members of the public would appreciate more information on pesticide applications. This initiative advises farmers on ways in which they can communicate with other members of the public and how to identify and mitigate risks, in particular reducing spray drift. The 'Good Neighbour' initiative applies in England only.

11.6 In Northern Ireland a pesticide working group involving the Agriculture sector, Water Industry and the Northern Ireland Environment Agency has been formed to promote good practice in the use and handling of plant protection products and to raise awareness.

¹⁰ www.pesticides.gov.uk

Inspection of application equipment

Overview

12.1 There is a healthy market which sustains a sector scheme for inspection of application equipment (see below). The UK has long-standing voluntary arrangements for annual inspection of application equipment which has resulted in approximately 14,000 inspections being carried out each year on equipment applying pesticides to over 80% of agricultural area treated with these chemicals.

12.2 The inspection arrangements have been in place for a number of years and an analysis of the data has enabled the scheme operators to identify consistent patterns in features resulting in failure of inspection. Work is being undertaken by the industry to ensure owners of machinery are made aware of the reasons for these failures.

Regulatory Measures

12.3 The PPP (SU) Regulations 2012 require all users of pesticide application equipment to ensure it is inspected: once before 26 November 2016; at intervals of no more than 5 years until 2020; and at intervals of no more than 3 years thereafter. New equipment must be inspected within 5 years of the date of purchase. Only equipment that has passed inspection must be in use after 26 November 2016.

12.4 The regulations also require that the competent authority designates bodies competent to administer the inspection scheme and keep a register of inspectors qualified to conduct inspections and grant certificates for equipment that has passed inspection.

12.5 Equipment that represents a very low scale of use, including that which is not used for spraying pesticides, must be inspected by 26 November 2015 and at intervals of no greater than 6 years thereafter. A list of equipment in this category is attached at Annex 3, and this will be updated as appropriate.

12.6 Professional users must conduct regular calibrations and technical checks of the plant protection product application equipment they use. The Directive allows handheld equipment and knapsacks to be exempt from inspection providing operators are trained for the proper use of that equipment, including the need to change accessories regularly, and informed of the specific risk to that equipment. This derogation has been applied in the UK.

Non-regulatory initiatives

12.7 Some Farm Assurance protocols in place in the UK require machinery to be inspected on an annual basis under a system developed by the National Sprayer Testing Scheme (NSTS) which is administered by the Agricultural Engineers Association. Annual inspection is recommended as best practice.

12.8 The Amenity Forum has developed guidance for users in the amenity sector on the importance of conducting regular inspections, outlining how this can be done.

Aerial Application of pesticides

Overview

13.1 Aerial application of pesticides is not extensive in the UK. Applications tend to be limited to aerial spraying of herbicides to control bracken in upland areas. Aerial spraying operators must comply with aviation legislation.

Regulatory Measures

13.2 The PPP (SU) Regulations 2012 prohibit aerial spraying, allowing it only where specifically permitted by a competent authority. The Regulations provide that the competent authority may only permit applications if it has approved the Application Plan and ensured that conditions set out in the Directive are fulfilled. Permits may be withdrawn or amended in particular circumstances. Operators are also subject to the wider requirements of this legislation – in particular that requiring them to take ‘reasonable precautions’ to protect human health and the environment when applying the pesticide.

13.3 Operators of aircraft are also subject to the requirements of the Air Navigation Order 2005 which includes requirements on safe flying practice when applying pesticides from an aircraft, including vertical and horizontal distances to be maintained between the aircraft and potentially populated/inhabited areas.

13.4 Landowners of conservation areas or authorities permitting the application of pesticides to such areas are subject to the requirements of the Wildlife and Countryside Act, 1981 and the Conservation of Habitats and Species Regulations, 2010. This legislation requires that an appropriate assessment must have been made of the effect of applying the pesticide and that an appropriate consent or agreement permitting the application is in place.

Non-regulatory initiatives

13.5 The UK Aerial Application Association has developed ‘Operating Standards’ to advise operators how they can demonstrate due diligence in complying with their legal requirements.

Measures to protect the aquatic environment and drinking water

Overview

14.1 UK stakeholders work closely together to minimise the risk of pesticides polluting the aquatic environment and drinking water sources. The monitoring activities of environmental regulators and water companies has enabled us to identify, for example, surface and groundwaters at risk of failing their Water Framework Directive requirements due to pesticides, and those pesticides responsible for potential non-compliance. Research and development work has enabled us to identify the key pollution pathways and how risks can be mitigated.

14.2 Many of the pesticides that have most frequently polluted water are no longer authorised for use. Of those that are currently in use, the most frequently occurring in surface waters are *metaldehyde*, *propryzamide*, *carbetamide*, *chlorotoluron*, *2,4-D*, *mecoprop-P* and *MCPA*. In groundwater, the most frequently occurring products currently used are *bentazone* and *mecoprop-P*.

Regulatory Measures

14.3 The pesticide regulatory risk assessment devotes a significant degree of attention to identifying and mitigating risks to water by considering the risk to groundwater and surface water for each product and use and the surface water assessment specifically looks at the risk to aquatic life. Particularly noteworthy aspects are:

- use of a specific predictive computer model (HardSpec) to determine the risk of run-off to water from applications of pesticides to hard surfaces; and
- application of the Local Environmental Risk Assessment for Pesticides (LERAP)¹¹ scheme which enables users to reduce the size of certain buffer zones imposed as a condition of use where the local situation differs from the model on which exposure is calculated.

14.4 The PPP (SU) Regulations 2012 provide that users must:

- take 'all reasonable precautions' to protect the environment. The environment is defined within the Regulations as including waters which would be used for the purposes of drinking water;
- confine pesticide applications to the target areas;
- ensure that the amount used and the frequency of use should be as low as is reasonably practicable; and
- so far as is reasonably practicable, use products not classified as dangerous for the aquatic environment nor containing priority hazardous substances¹².

14.5 This is supplemented by a wide range of water protection legislation across the UK. Particular mechanisms include source protection zones and safeguard zones for groundwater protection and water protection zones for surface and groundwater protection. Drinking water is also protected by the designation of drinking water protected areas. More details of the legislation and mechanisms are in Annex 4.

Incentives

14.6 Government uses financial incentives to encourage farmers to adopt practices which will help to reduce the risk of pesticides reaching water. For example, one of the requirements of the Single Farm Payment Scheme is that pesticides must not be applied within 2m of a watercourse or field ditch. Also Environmental Stewardship Schemes provide incentives for farmers to use measures which tackle the source of pollution such as under-sowing spring cereals, use of winter cover crops, slowing pathways (in-field grass areas) and 6m or 12m buffer zones to protect watercourses.

¹¹ <http://www.pesticides.gov.uk/guidance/industries/pesticides/topics/using-pesticides/spray-drift/leraps/local-environment-risk-assessment-for-pesticides-leraps>

¹² Compliance with Priority Substance standards will be used to define 'good chemical status' for the Water Framework Directive (WFD). Concentrations of Priority and Priority Hazardous Substances in water must meet the WFD environmental standards by 2015 in order to achieve 'good chemical status'. In addition Priority Hazardous Substances emissions must be phased out by 2025.

Government-led non-regulatory initiatives

14.7 The Government has established Codes of Practice for both the use and storage of plant protection products. These are to be updated in due course to meet the new legal basis and requirements. Until then, users who continue to follow the advice in these Codes will have a good basis for demonstrating due diligence in meeting their legal requirement to take reasonable precautions to protect the environment.

14.8 The Catchment Sensitive Farming programme educates farmers in areas with specific water pollution problems on the measures they could take to minimise risks. This government-led programme has contracts with industry bodies to provide advice on best practice in those areas where pesticides are a pollutant of concern. The programme provides capital grants to enable farmers to invest in infrastructure which will reduce the risk of pollution (examples include features such as the installation of biobeds or construction of roofs above machinery washing areas).

14.9 In addition, the Single Farm Payment and Environmental Stewardship Schemes provide subsidy payments to farmers to adopt practices which will protect water including use of particular cropping techniques, slowing pollution pathways in fields and use of buffer zones adjacent to watercourses or ditches.

Industry Initiatives

14.10 The crop protection and farming industries have developed a number of initiatives specifically designed to protect water. Key amongst these are:

- The Crop Protection Association's H2OK? Campaign, supported by the Voluntary Initiative, which provides farmers and sprayer operators with information on how pesticides can reach water along with the options available to protect water. These are supported by specific measures such as annual testing of spray equipment and continuous training of operators, which contribute to, or provide an opportunity to share knowledge on practice, which will reduce the risk of pollution. The Voluntary Initiative also has a database of Environmental Information Sheets which provide clear information on the potential environmental impacts of pesticides, enabling users to readily compare products.
- The Campaign for the Farmed Environment, a multi-stakeholder initiative, which includes encouragement for farmers to use buffer zones next to watercourses.
- The Amenity Forum which provides guidance on identifying and mitigating risks to water and minimising use on hard surfaces.

14.11 In addition to the wider industry initiatives described above, there are also a number of stewardship campaigns on specific substances or products. An example of these is the Metaldehyde Stewardship Group's 'Get Pelletwise' campaign which provides advice for users, distributors and advisors on careful use of slug pellets including the use of integrated controls, calibration of machinery, and how and where to apply the products.

Research and development

14.12 A research requirements document sets out the research needed across the entire Defra pesticides R&D programme¹³. Within this programme is work to develop an understanding of the fate and behaviour of pesticides in the environment so that procedures for approval of pesticides and the regulatory and administrative guidance and instructions for their safe use, storage and disposal on farms and holdings take the potential risks to humans, wildlife or the environment into account. This work focuses on farming systems that ensure that pesticides are delivered accurately to their targets and which minimise the migration of pesticides into the broader environment, such as water, thereby supporting best practice in the use of pesticides. An example of this is a project that developed the use and long-term operation of bio-beds for the safe disposal of dilute pesticide waste and equipment washings. This provided practical help and advice for farmers to help them avoid polluting their local environment and in particular any water systems.

Reduction of risk in specific areas

Overview

15.1 Measures are in place to reduce the risks associated with the use of pesticides in: public spaces; conservation areas; and areas recently treated with pesticides which are accessible to agricultural workers.

15.2 Protection of wildlife generally (and not just in conservation areas) from the adverse effects of pesticides is supported and promoted through a variety of measures and mechanisms, including:

- the Wildlife Incident Investigation Scheme (and its associated publicity campaign);
- provision of subsidies to farmers who adopt a range of land management practices which benefit wildlife (including buffer zones adjacent to ponds, waters and hedgerows, un-cropped field margins, un-cropped areas for ground-nesting birds, reduced herbicide cereal crops, hedgerow tree buffer strips and in-field beetle banks); and
- a range of industry initiatives to protect health and the environment.

Regulatory Measures

15.3 The pesticide regulatory risk assessment process assesses the risk to human health (operators, consumers, bystanders and residents). Where appropriate, risk management measures are imposed so as to mitigate any risk. For example, re-entry levels are set for workers going into treated crops, and there is a specific risk assessment for pesticides used in public places.

15.4 The PPP (SU) Regulations 2012 provide that users must:

- take 'all reasonable precautions' to protect or avoid endangering human health when using, storing and handling pesticides;

¹³ <http://www.pesticides.gov.uk/guidance/industries/pesticides/user-areas/research>

- confine pesticide applications to the target areas;
- ensure that the amount used and the frequency of use should be as low as is reasonably practicable in specific areas.

15.5 This is supplemented by legislation such as:

- the Control of Substances Hazardous to Health Regulations 2002 requires those responsible for the use of hazardous chemicals to manage risks to human health (both employees and non-employees).
- The Wildlife and Countryside Act, 1981 and the Conservation of Habitats and Species Regulations, 2010 (and for Scotland, the Nature Conservation (Scotland) Act 2004 and the Conservation (Natural Habitats, &c) Regulations 1994) require landowners and public authorities to obtain agreement or consult nature conservation authorities before applying pesticides to protected areas identified for the purposes of conservation established under the Water Framework Directive, Sites of Special Scientific Interest, or Natura 2000 sites. In each case an assessment is made of the conservation objectives of the site and potential impact of pesticide use. Agreements to use a pesticide are developed in accordance with the guidelines laid down in 'The Herbicide Handbook' which details alternative and integrated approaches to vegetation management. Work to update the guidelines is underway.

Industry Initiatives

15.6 The crop protection and amenity contracting industry have developed the Amenity Forum, an initiative designed to improve the practice of users where products are used in public spaces. The Forum has developed a series of best practice guides for users and those who contract the use of pesticides to, for example, help minimise use and adopt integrated approaches.

15.7 Training providers have developed initiatives such as:

- the BASIS Advanced Amenity Contractors Scheme which provides for continuing professional development amongst users in the amenity sector;
- the National Amenity Spray Operators Register, which provides for continuing professional development amongst users in the amenity sector; and
- the Amenity Assured Scheme which provides a framework and standards enabling those who employ pesticide application services to ensure that a range of weed control options have been considered and that practices have been employed to identify and mitigate risks and minimise use.

Research and development

15.8 The government will continue to fund appropriate research activities to promote the sustainable use of pesticides in specific areas. Examples of recent research include:

- an analysis of emerging herbicide resistance in amenity weed control situations; and

- a project to ascertain the environmental impacts, costs and effectiveness of a range of weed control options on roads and pavements.

15.9 Regular surveys of use and practice in the amenity sector have been incorporated into the government's pesticide usage survey programme.

Handling and storage of pesticides and treatment of their packaging and remnants

Overview

16.1 Handling, storage and disposal of pesticides is generally conducted to a high standard to meet the requirements of measures such as the Red Tractor farm assurance schemes. However, there are certain parts of the user community who seem to be aware of and adopt best practice measures to a greater degree than others so there is a need for greater consistency in this area.

Regulatory Measures

16.2 The pesticide regulatory risk assessment process assesses the exposure to human health and the environment from handling and storage operations. Mitigation measures are imposed to ensure exposure falls within acceptable limits (for example, requiring the use of closed transfer systems where appropriate).

16.3 In relation to the handling of non-professional products, products which require the use of protective equipment for safe use are not authorised and consequently non-professional products are developed with low toxicity, ready to use formulations and with limited pack sizes.

16.4 The PPP (SU) Regulations 2012 require that those who use, store or dispose of pesticides authorised for professional use must:

- take reasonable precautions when handling, storing and disposing of pesticides in order to ensure that such operations do not endanger human health or the environment;
- refrain from mixing two or more anticholinesterase products unless this is expressly permitted by an authorisation;
- refrain from mixing two or more products unless the conditions of authorisation and product label can be complied with;
- ensure that storage areas are constructed in a way as to prevent unwanted releases.

16.5 This is supplemented by legislation such as:

- the Environmental Protection Act 1990 makes it an offence to dispose of controlled waste in a way likely to pollute the environment or harm human health;
- the Hazardous Waste Regulations 2005 set out requirements for handling and disposing of wastes designated as hazardous;

- the Waste Management (England and Wales) Regulations 2006 which brought agricultural waste within the scope of the wider waste legislation framework; and
- the Waste Management (Miscellaneous Provisions) (England and Wales) Regulations 2007 which detailed requirements relating to the construction of biobeds;
- the Carriage of Dangerous Goods (Road) Regulations, 1996 which set out precautions to be taken when transporting pesticides;
- the Control of Major Accident Hazard Regulations 1999 which requires those storing specified amounts of dangerous substances to establish policies to guarantee a high level of protection for human health and the environment;
- the Building Regulations 2010 which require buildings to be structurally sound.

Non-regulatory government initiatives

16.6 The Government's Code of Practice on the Storage of Plant Protection Products¹⁴ provides guidance on how those handling or storing pesticides can demonstrate due diligence in meeting their legal obligations. This will be updated to meet the new legal basis and requirements.

16.7 The Catchment Sensitive Farming programme advises farmers in areas with specific water pollution problems of measures they could take to minimise risks. This government-led programme has contracts with industry bodies to provide advice on best practice in those areas where pesticides are a pollutant of concern. The programme provides capital grants to enable farmers to invest in infrastructure which will reduce the risk of pollution (examples include features such as the installation of biobeds or construction of roofs above machinery washing areas).

16.8 The Pesticides Forum established a short-life Container Management Working Group to identify, document and promote expertise and best practice in relation to the design, storage and disposal of pesticide containers and packaging. Its recommendations outlined best practice in container design, management, recycling, disposal advice and areas for further research.

Industry Initiatives

16.9 In the professional sector:

- The Voluntary Initiative has undertaken research to establish user practice in relation to the handling, storage and disposal of pesticide products. This research was used to inform the production of guidance material which also draws upon guidance developed by the TOPPS project¹⁵ (**T**rain **O**perators to **P**romote best **P**ractices and **S**ustainability). This demonstration project was initiated by the European Crop Protection Association (ECPA) and its partners and focussed on promoting best practices for the use and application of pesticides in a sustainable way in order to protect natural water resources.

¹⁴ <http://www.pesticides.gov.uk/guidance/industries/pesticides/topics/using-pesticides/codes-of-practice/codes-of-practice-home>

¹⁵ <http://www.topps-life.org/>

- This guidance is incorporated into the BASIS store inspection scheme which sets out standards relating to the siting, structure and organisation of pesticide stores (including assessing site sensitivity, construction in accordance with British Standards, containing spills, safe loading and unloading practice, managing waste, emergency planning and pollution control and prevention).
- Crop Assurance protocols require that stores should be sound, have emergency facilities to deal with spillages, be able to deal with spillages or have an adequate sump to prevent contamination of watercourses.
- The Amenity Forum has developed guidance on the handling, storage and disposal of pesticides which is relevant to the amenity sector.

16.10 In the non-professional sector the BASIS Guardian Certificate in Garden Care certificates¹⁶ advisers and selling of garden pesticides on: pest, weed and disease, identification and impacts; control options; legislation; plant health; and environmental issues.

Research and development/evidence gathering

16.11 Regular surveys of use and practice in the amenity sectors have and will continue to be undertaken by government. New arrangements for the pesticide usage surveys in agriculture include periodic amenity surveys.

Integrated Pest Management (IPM)

Overview

17.1 Many users, particularly in the agricultural and horticultural sectors, adopt practices which are in line with the general principles of IPM, particularly due to the requirements of farm assurance schemes, retailer requirements or other national or international production standards.

Regulatory Measures

17.2 The PPP (SU) Regulations 2012 require all users to be trained. Only courses for users and advisors which provide training on integrated approaches will receive accreditation.

Non-regulatory initiatives and Incentives

17.3 Assured Food Standards Schemes require growers to adopt practices which promote practices which are consistent with the general principles of IPM. Specific standards are set for individual crops. Work is underway with the key industry stakeholders to develop an IPM self-assessment tool for farmers (an IPM Plan) to encourage the use of IPM tools and techniques such as decision support systems and pest and disease monitoring systems. This tool will also be developed in a way which enables use by amenity pesticide users.

17.4 In woodland, initiatives such as the UK Woodland Assurance Scheme and the Forestry Commission's Practical Guide to Reducing Pesticide Use in Forestry promote

¹⁶ <http://www.the-hta.org.uk/page.php?pageid=133>

practices consistent with the aims of the Directive and national policy, but specifically require owners/managers to implement effective IPM strategies.

17.5 The Amenity Forum is developing guidance on the use of integrated approaches within the different parts of the amenity sector. Government and industry experts meet regularly with representatives of local authorities to explain how integrated approaches and other measures which promote sustainable use of pesticides can be given practical application.

17.6 Government also provides support to farmers wishing to convert to organic methods of production under the Organic Entry Level Scheme. The production of organic food must be done in accordance with Council Regulation 834/2007 and enforced under the Organic Products Regulations 2009. Growers are inspected by private Defra-licensed Organic Inspection Bodies each year.

17.7 In view of the range of non-Government incentives and initiatives in place, and the broader regulatory measures described it is not considered necessary to provide specific Government incentives to encourage the use of integrated approaches.

Research and Development

17.8 The Defra-funded pesticides R&D programme managed by CRD has a significant programme of work to reduce reliance on chemical pesticides by developing novel alternative technologies that do not pose unacceptable risks to human health, non-target organisms, and the environment. This provides the scientific basis to enable industry to develop further measures for integrated or biological control in arable and horticultural commodities, thereby encouraging sustainable crop protection and potentially also benefitting other production systems such as organic production. Technologies being developed for controlling insect pests typically involve disruption of natural processes of feeding, reproduction and development. A specific project is looking at integrated approaches in amenity weed control on hard surfaces (roads, footpaths etc). This will provide practical information on the applicability and costs of weed control methods (chemical and non-chemical) which will be of use to contractors and amenity managers such as local authorities in ensuring the sustainable use of pesticides and sustainable vegetation management.

Indicators

Overview and approach

18.1 The UK has a mature and sophisticated approach to using indicators to help assess the impact of pesticide use on human health and the environment. The Annual Indicators Report of the Pesticides Forum reviews patterns of pesticide usage; user practice; impacts on human health and the environment and the availability of methods of controlling pests, weeds and diseases.

18.2 Harmonised indicators will be adopted and produced once adopted by the EU. However it is important that any indicators of sustainable use determine the context in which pesticides have been used and the degree to which risks were likely to have been identified and mitigated. There are a number of monitoring programmes (described below) in place in the UK which contribute information/data to the regulatory controls on pesticides and are used as part of the suite of UK pesticide indicators.

Regulatory Measures

18.3 The EU regulation on pesticides statistics (Regulation 1185/2009¹⁷) sets requirements on member States for the collection of pesticide usage statistics over a five year reference period and for the collection of annual sales statistics. In the UK usage data is collected through a long-standing system of pesticide usage surveys which gathers data from farmers on a cyclical basis according to the crops under survey. The key UK broad-acre crops are surveyed every two years. Sales data is gathered through an annual trade survey managed by the UK Office for National Statistics.

18.4 As mentioned earlier, EU legislation controls levels of pesticide residues in food through a system of Maximum Residue Levels (MRLs). The UK has a comprehensive residue monitoring programme to meet the EU requirements which checks level of pesticides in food and assesses any risk to consumer safety. This is overseen by a Defra expert scientific committee on Pesticide Residues in Food¹⁸.

18.5 There are a number of programmes in place in the UK to capture any human health effects of pesticides

- Pesticide Users Health Survey (Health and Safety Laboratory);
- Human Health Enquiry & Incident Survey (HHEIS) (via pesticide approval holders);
- The Health and Occupation Reporting network (THOR) at the University of Manchester;
- UK Hospital Episode Data through the NHS;
- Pesticides Incident Appraisal Panel (PIAP) through the National Poisons Information Service.

18.6 Pesticides Adverse Health Effects surveillance has been reviewed by a sub-group of the independent Advisory Committee on Pesticides and a report is due to be published on this.

18.7 The European Commission is developing a strategic guidance document on monitoring and surveying of impacts of pesticide use on human health and the environment by 26 November 2012. CRD have been providing information into this work on the UK approaches.

Non-regulatory measures

18.8 There is a long-standing Wildlife Incident Investigation Scheme (WIIS) which makes enquiries into the death or illness of wildlife, pets and beneficial invertebrates that may have resulted from pesticide poisoning. The scheme has two objectives:

- to provide information to the regulator on hazards to wildlife and companion animals and beneficial invertebrates from pesticides; and
- to enforce the correct use of pesticides, identifying and penalising those who deliberately or recklessly misuse and abuse pesticides.

18.9 In practice “companion animals” usually refers to cats and dogs, and “beneficial invertebrates” refers to honeybees, bumble bees and earthworms. Also included in the Scheme are suspect baits, where it is thought that pesticides have been inappropriately

¹⁷ Official Journal L324/1 10.12.2009

¹⁸ <http://www.pesticides.gov.uk/guidance/industries/pesticides/advisory-groups/PRiF>

applied or used, and spillages of pesticides where this poses a risk to wildlife or companion animals. The Scheme is essentially a monitoring tool to inform the pesticide approval process. However, where there is clear evidence of a breach of pesticide law enforcement action may be taken. The Scheme is operated independently in all four countries of the United Kingdom and the reporting of results is co-ordinated and reported by CRD.

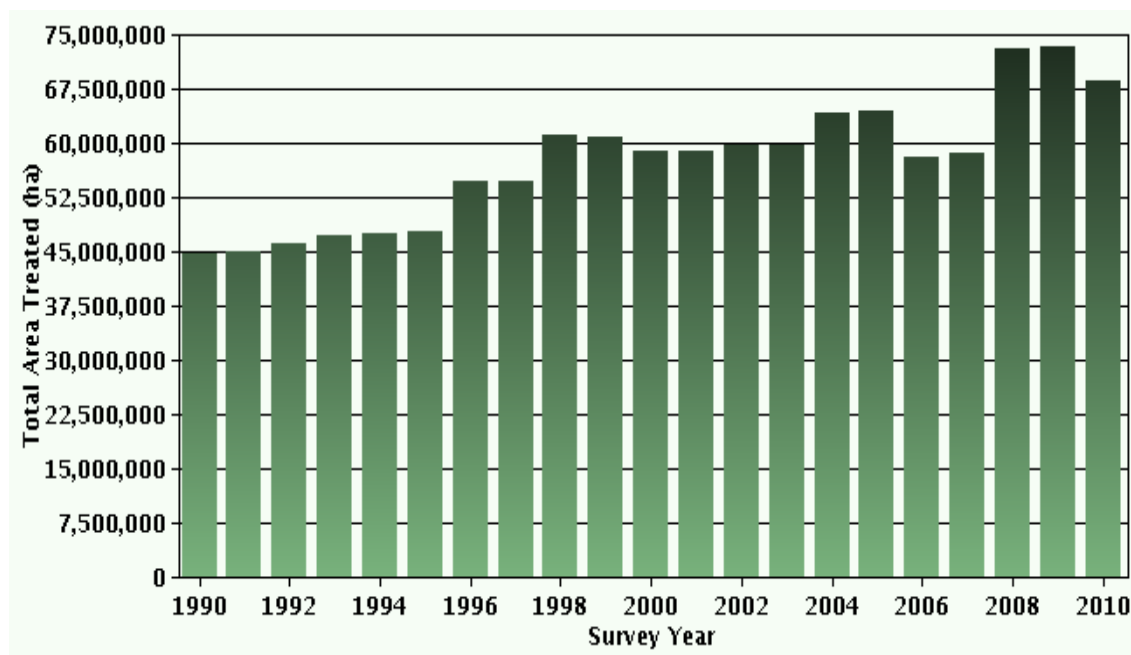
Research and Development

18.10 A project under the Defra funded R&D programme is currently looking at existing pest, weed and disease reporting mechanisms to develop a new reporting system which provides information more closely matched to the needs of the sustainable use Directive.

Annex 1: Use of pesticides in the UK

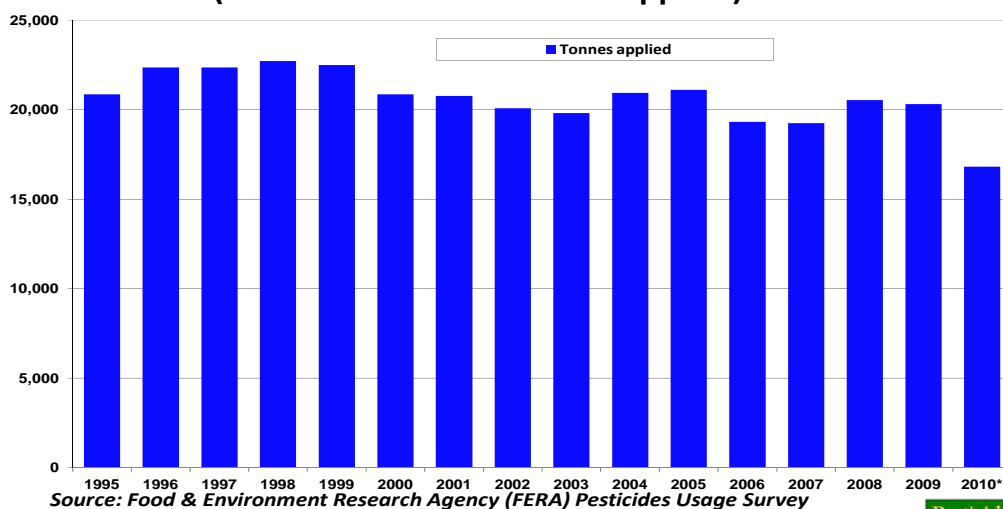
The charts below illustrate the overall patterns of pesticide use in Great Britain (UK usage figure for 2010). It can be seen that while the treated area has shown a steady increase, the weight of active substance applied is fairly stable, except for a significant decline to 2010 largely due to the expiry of authorisations for two major herbicide active substances. The majority of use occurs in England with a small amount used in Scotland and very small amounts in Wales and Northern Ireland.

Pesticides treated area in Great Britain



Note: The “treated area” is essentially a multiple of the area of crop grown and the number of times it is treated.

Estimated annual pesticide usage for all crops (tonnes of active substance applied)



Source: Food & Environment Research Agency (FERA) Pesticides Usage Survey

* 2010 figures include Northern Ireland

For more information see: www.pesticides.gov.uk/pesticides_forum_home.asp



Annex 2: The Pesticides Forum – brief description and role

The Pesticides Forum has the following terms of reference:

- To bring together the views of those concerned with the use and effects of pesticides;
- To identify their common interests;
- To assist the effective dissemination of best practice, advances in technology, and research and development results.
- To advise Government on the development, promotion and implementation of its policy relating to the responsible use of pesticides.

The Forum membership is made up from a wide-range of organisations from those within the agriculture and horticulture industry (including the crop protection industry, farmers and growers including the organic sector and the training and advisory sector); those involved in the sale and distribution of foodstuffs including the major retailers who organise many of the crop assurance schemes); those interested in human health (including PAN-UK, consumer groups and the Trades Union looking after sprayer operators); through to those interested specifically in environment and conservation issues (including wildlife groups). The Forum is also supported by a wide range of Government and Non-Governmental Organisations either involved directly in the approval of pesticides in the UK through to those with interests in the impacts of pesticide use.

List of Forum member organisations

ADAS
Advisory Committee on Pesticides
Agricultural Engineers Association
Agricultural Industries Confederation
Agriculture and Horticulture Development Board
Amenity Forum
BASIS (Registration) Ltd
Co-operative Farms
Country Land and Business Association
Crop Protection Association
Environment Agency
Fresh Produce Consortium/British Retail Consortium
Game and Wildlife Conservation Trust
Linking Environment and Farming (LEAF)
National Farmers' Union
National Farmers' Union Scotland
Pesticides Action Network UK
SAC (Scottish Agricultural College)
Scottish Natural Heritage
SUSTAIN [Formerly Foodaware]
Unite
Voluntary Initiative for pesticides
Wildlife and Countryside Link
Women's Food and Farming Union

Annex 3: List of pesticide application equipment subject to a six year inspection interval in the UK

- Ground crop sprayer (mounted/trailed) boom less than 3m
- Granule applicator
- Boat mounted applicators (boom less than 3m)
- Boat mounted granule applicators
- Fogging, misting and smoking equipment
- Batch dipping equipment
- Seed treating equipment
- Conveyor, roller table, other moving equipment
- Sub-surface liquid applicator

Other equipment may fall into this category. CRD will provide advice on these on request.

Annex 4: Further information on UK water legislation

- The Water Environment (Water Framework Directive) (England and Wales) Regulations 2003 make provision for implementation of key provisions of the Water Framework Directive¹⁹. They require the Environment Agency to characterise the River Basin Districts of England and Wales and review the impact of human activity on the status of surface and ground waters and monitor the status of water bodies against a number of parameters including the ecological and chemical quality. They also require public bodies in exercising their functions to have due regard to the River Basin Management Plans.
- Part III of The Water Resources Act 1991 covers control of pollution. The Act allows Ministers to establish water quality objectives in order to maintain and improve the quality of controlled waters and makes it an offence to knowingly permit any polluting matter to enter controlled water, unless a relevant licence/permit is held.

The Act also allows Ministers to designate an area as a water protection zone and through use of an Order prohibit or restrict the 'carrying on' of activities or impose requirements on those undertaking those activities. Imposing requirements on those undertaking activities is permissible only for the purpose of enabling the UK to comply with its obligations under the WFD in relation to environmental objectives.

The Act provides that where it appears to the Environment Agency that polluting material has entered or likely to enter controlled waters or that controlled waters are likely to be harmed, a 'works notice' shall be served on a responsible person. The works notice requires the person on whom it is served to carry out specific works and operations.

- The Environmental Permitting (England and Wales) Regulations 2010 provide that persons who operate regulated facilities that are installations (this includes pesticide manufacturing and formulating plants as well as potato or fruit washing plants) may only dispose of polluting material in accordance with an environmental permit issued by the Environment Agency.
- The Groundwater (England and Wales) Regulations 2009 make it an offence to discharge any hazardous or non-hazardous pollutant that might contaminate groundwater unless it is carried out under and in accordance with a permit issued by the Environment Agency. Permits are granted for the purpose of implementing the Water Framework Directive and Directive 2006/118. Pesticide washings applied to a target crop within label specifications do not require a permit, but these Regulations do, nevertheless, provide a mechanism for controlling discharges.
- The Surface Waters (Dangerous Substances) (Classification) Regulations 1998 prescribe a system for classifying inland waters with a view to reducing pollution of these waters. The Environment Agency is required to monitor the effect of discharges on these waters.

¹⁹ [Water Framework Directive](#)

- The Water Supply (Water Quality) Regulations 2000 implement the EU drinking water directive in England and Wales. They are designed to protect human health from the adverse effects of any contamination by ensuring drinking water supplied to consumers is wholesome and clean. The regulations specify maximum concentrations in tap water for a number of chemicals, including pesticides. The Water Supply (Water Quality) (Scotland) Regulations 2001 implement the EU Drinking Water Directive in Scotland.

- **Water Environment and Water Services (Scotland) Act 2003**

The Water Framework Directive (WFD) was transposed in Scotland by the Water Environment and Water Services (Scotland) Act 2003 (WEWS Act). The WEWS Act gave Scottish ministers powers to introduce regulatory controls over water activities, in order to protect, improve and promote sustainable use of Scotland's water environment. This includes wetlands, rivers, lochs, transitional waters (estuaries), coastal waters and groundwater.

- The Water Environment (Controlled Activities)(Scotland) Regulations 2011 place controls over water activities, in order to protect, improve and promote sustainable use of Scotland's water environment. This includes wetlands, rivers, lochs, transitional waters (estuaries), coastal waters and groundwater. Scotland plans to introduce within this legislation a general binding rule which will place controls on the use of pesticides in proximity to the water environment.

- **The Water Environment (Water Framework Directive) Regulations (Northern Ireland) 2003.**

These Regulations makes provision for implementation of key provisions of the Water Framework Directive. They require the Department of the Environment for Northern Ireland (DOE NI) to characterise the River Basin Districts for Northern Ireland and review the impact of human activity on the status of surface and ground waters, and monitor the status of water bodies against a number of parameters including the ecological and chemical quality. They also require public bodies in exercising their functions to have due regard to the River Basin Management Plans.

- **The Water (Northern Ireland) Order 1999** allows the Department of Environment Northern Ireland to establish water quality objectives in order to maintain and improve the quality of waters and makes it an offence to knowingly permit any polluting matter to enter a waterway or underground stratum, unless a relevant consent or authorisation is held.

- The Order also provides that where it appears to the DoE NI that polluting material has entered or likely to enter a waterway or underground stratum, and that the waters are likely to be harmed, an 'enforcement notice' shall be served on a responsible person. The enforcement notice requires the person on whom it is served to carry out specific works and operations.

- The Groundwater Regulations (Northern Ireland) 2009 make it an offence to discharge any hazardous or non-hazardous pollutant that might contaminate groundwater unless it is carried out under and in accordance with an authorisation issued by the Department of the Environment for Northern Ireland. Authorisations are granted for the purpose of implementing the Water Framework Directive and

Directive 2006/118. Pesticide washings applied to a target crop within label specifications do not require a permit, but these Regulations do, nevertheless, provide a mechanism for controlling discharges.

- The Surface Waters (Dangerous Substances)(Classification) Regulations 1998 prescribe a system for classifying inland waters with a view to reducing pollution of these waters. The Environment Agency is required to monitor the effect of discharges on these waters.
- **The Water Framework Directive (Priority Substances and Classification) Regulations (Northern Ireland) 2011** provide a statutory basis for classification schemes in order to support the implementation of Directive 2000/60/EC, establishing a framework for Community action in the field of water policy (the Water Framework Directive). Further, these Regulations specifically implement Directive 2008/105/EC, on environmental quality standards in the field of water policy (Priority Substances Directive), which aims to protect the water environment from the impacts of dangerous chemicals.
- **The Water Supply (Water Quality) Regulations (Northern Ireland) 2007** (as amended) and **the Private Water Supplies Regulations (Northern Ireland) 2009 (as amended)** implement the EU drinking water directive in Northern Ireland. They are designed to protect human health from the adverse effects of any contamination by ensuring drinking water supplied to consumers is wholesome and clean. The regulations specify maximum concentrations in tap water for a number of chemicals, including pesticides. The regulations also have a regulatory requirement to have risk assessments undertaken for these drinking water supplies covering the water supply chain from the catchment used for abstraction purposes to the point where the water is made available to consumers.

Water protection mechanisms

Groundwater is protected by mechanisms such as Source Protection Zones (SPZs) which are used to influence stakeholder behaviour. Around 2,000 SPZs have been designated by the Environment Agency in England and Wales. They are used in conjunction with the Groundwater Protection Policy to set up pollution prevention measures in areas which are at higher risk and to monitor the activity of potential polluters. The shape and size of an SPZ depends upon the conditions of the ground, how the groundwater is removed and other environmental factors. Groundwater source catchments are divided into inner, outer and source protection zones with specific dimensions and pesticide use restrictions.

Safeguard Zones (SgZs) are used to protect groundwater where SPZs are unlikely to ensure compliance with Article 7(3) of the Water Framework Directive, which states that there should be: *“necessary protection for the bodies of water identified with the aim of avoiding deterioration in their quality in order to reduce the level of purification required in the production of drinking water.”* SgZs are areas where pollution originates and/or areas where pollution impacting an abstraction has been identified with a high confidence. They are revised if new information comes to light. Problems in SgZs are tackled by the targeted use of existing powers, advice, incentive schemes, voluntary agreements and campaigns including enforcement actions.

Water Protection Zones (WPZ) are used to protect surface and groundwaters where there is a high degree of confidence that an abstraction is failing to meet Article 7(3) of the

Water Framework Directive. A WPZ is a geographical area within the catchment of abstraction sources for drinking water to deal with specific point or diffuse source pollution problems. Within WPZs we are able to apply statutory measures to manage or prohibit activities which cause or could cause damage or pollution of water and above existing statutory powers. A WPZ Order defines both the area and specific measures designed to deal with identified water quality problems within it.

In Scotland, Section 6 of the WEWS Act implements Articles 6 and 7 of the Water Framework Directive and provides for Scottish Ministers to identify bodies of water which are used for the abstraction of water intended for human consumption. These Drinking Water Protected Areas (DWPA) have been identified in line with the requirement on abstractions for human consumption in the Water Framework Directive. The assessment of Drinking Water Protected Areas involves determining whether deterioration in the quality of water intended to be abstracted from the area has compromised, or would compromise drinking water supplies. The risks to drinking water quality must be identified and minimised by taking reasonable steps to address these risks. The competent authority in Northern Ireland for the designation of drinking water protected areas is the Department for the Environment for Northern Ireland.

The UK plant protection products industry

Figure 1

