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UK Pesticides Strategy: A Strategy for the Sustainable Use of Plant Protection Products



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Product code PB 13035

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1. Introduction

This document replaces the Pesticides and the Environment Strategy¹ published in 2006. It updates that strategy and extends it to cover issues relating to the potential human health risks from pesticides. New EU legislation on the sustainable use of pesticides currently under negotiation is likely to require member states to produce 'national action plans' on pesticides. This strategy and related detailed action implementation plans anticipate that development.



¹Pesticides and the Environment: A Strategy for the Sustainable Use of Plant Protection Products and Strategy Action Plans: March 2006

2. Background

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 plant weeds. This strategy concerns 'plant protection products' which are those pesticides used to protect plants and plant products from pests, diseases and weeds and to regulate growth of plants.

Careful use of pesticides can deliver substantial benefits for society: increasing the availability of good quality, reasonably priced foodstuffs (in particular fruit and vegetables); and clean urban environments. However, pesticides can, by their nature, be harmful to living organisms so there are risks associated with their use. It is important that these risks are accurately assessed and appropriate measures taken to minimise them.



The UK has a substantial crop protection industry. Sales of plant protection products in 2006 were £388 million, representing 23,066 tonnes of active substances. Agricultural and horticultural uses accounted for 85% of the value of sales and 80% of the amount used, whilst garden, household, forestry and amenity uses accounted for the balance. Further information on the make-up of the pesticides market in the UK is provided in **Annex 1**.

3. Scope of the strategy

This strategy concerns pesticides used in agriculture, amenity landscape management and in homes and gardens. It does not cover biocides (such as wood preservatives or disinfectants) or veterinary medicines (such as sheep dip chemicals) which are subject to separate regulatory requirements.



The strategy deals with the legislative and other controls on the marketing of pesticides, on the use of pesticides and on pesticide residues in foods. It covers measures to protect the health of people (operators who apply pesticides, other workers, residents, bystanders and consumers) and the environment.

Subject to appropriate regional variations this strategy covers England, Scotland, Wales and Northern Ireland. However, these devolved administrations currently have, or may develop in the future, parallel but different agricultural or environmental schemes to reflect priorities within their territories. The terminology for current schemes used in this strategy generally refers to the English situation.

4. Objectives

This strategy will contribute particularly to three of Defra's strategic objectives in the following ways:

A healthy, resilient, productive and diverse natural environment

- By safeguarding human health;
- By reducing pesticide contamination of surface and groundwater;
- By reducing the impact of pesticides on biodiversity;
- By promoting good practice in the use and disposal of pesticides.

A thriving farming and food sector, with farming making a net positive environmental contribution

- By maintaining the quality and quantity of food produced;
- By maintaining the production of locally grown crops;
- By promoting the development and use of alternative approaches to pest, disease and weed control that reduce dependence on chemical pesticides.

Sustainable Patterns of Consumption and Production

- By minimising the amounts of waste pesticide packaging produced;
- By encouraging availability of crop protection measures to support local food production.



5. Strategic outcomes

This strategy aims to achieve high standards of human and environmental protection against potential risks posed by pesticides whilst maintaining the economic viability of crop production and effective control of pests, weeds and diseases.

Specifically the strategy aims to:

- Protect consumers by minimising risks from pesticides residues in food;
- Protect users and workers by minimising exposure to pesticides;
- Protect residents and bystanders by minimising exposure from spray operations;
- Reduce water pollution caused by pesticides;
- Reduce the impact of pesticides on biodiversity;
- Establish 'best practice' in the use of pesticides in the amenity sector;
- Minimise the risk to users and the environment from amateur pesticide products;
- Maintain the availability of sufficient methods of crop protection particularly for minor crops (and also minor uses on major crops).
- Encourage the introduction of cost-effective alternative approaches and greater use of integrated crop and pest management.



6. Working together

The Government has developed this Strategy in consultation with a range of stakeholders who share responsibility for its delivery, in accordance with the principles of better regulation. Government cannot achieve the outcomes sought in this document without the co-operation of those who manufacture, store, sell and use pesticides, and those who monitor and manage the effects of pesticide use.

This means that all users of pesticides should:

- Comply with all relevant regulations and record keeping requirements for pesticides;
- Comply with the statutory Codes of Practice for using pesticides;
- Adopt an integrated approach to crop protection drawing on all available techniques to tackle pests, diseases and weeds;
- Support the action plans arising from this strategy relevant to their sector.

And this means Government will:

- Consult with all stakeholders on new regulatory requirements;
- Work with users of pesticides and other stakeholders to develop and implement the action plans;
- Seek to promote the uptake of integrated approaches to pest control particularly through the work of the Pesticide Forum and through relevant research and development;
- Use voluntary approaches to deliver results wherever appropriate;
- Take enforcement action, through the courts where necessary.



7. The existing framework

There is a very substantial body of legislation on pesticides which has been built up over a period of 20 years. The regime is in a transitional period where some major pieces of national legislation are being replaced by new, harmonising European Community legislation. The aim of all legislation on pesticides is to ensure high standards of protection for people and for the environment.

There are three main pieces of existing or planned EC legislation on pesticides:

- Controls on the *marketing* of plant protection products under the EC Authorisations Directive (91/414/EEC);
- A proposed Framework Directive on the *sustainable use* of pesticides. A formal proposal was adopted by the European Commission in July 2006 and is currently under negotiation;
- Legislation on *pesticide residues* in food. This legislation will soon be entirely harmonised through a recently adopted EC Regulation on 'Maximum Residue Levels' (MRLS) (396/2005/EC).

This body of legislation provides the basic elements of the regime to protect the health of people and the environment. It is under continuous development and major changes are likely over the next few years as a result of the Commission's Thematic Strategy on the Sustainable Use of Pesticides. The EC strategy includes proposals for both the Framework Directive (referred to above) and for a new authorisation and marketing regulation to replace Directive 91/414/EEC. More information on the current regulatory framework is included in **Annex 2**.

The legislative framework is underpinned by compliance and enforcement action. Responsibility for monitoring and enforcing the pesticides legislation is shared between the Health & Safety Executive (HSE), local authorities, the Department for Environment Food and Rural Affairs (including PSD), the Scottish, Welsh and Northern Ireland administrations, the Environment Agency in England and Wales (EA), and the Scottish Environmental Protection Agency (SEPA). Details of respective responsibilities can be found on the PSD website at <http://www.pesticides.gov.uk/approvals.asp?id=754>

The Government is strongly committed to advising and assisting those who market or use pesticides to fulfil their responsibilities and helps those concerned to understand and comply with the law. This is backed up by a range of measures to ensure that any breaches of the law are dealt with in a proportionate fashion.

The Action Plans to be taken forward under this strategy reflect regulatory developments but also include supplementary measures already being taken forward on a voluntary basis. Experience has shown that a broad package of voluntary and statutory measures is likely to deliver benefits beyond those achievable through regulation alone.

8. Integration with related policies and initiatives

A range of wider EU and UK initiatives will also affect usage of pesticides and where relevant these are included within appropriate action plans. A brief description of three of the key initiatives – reform of the Common Agricultural Policy (CAP), the EU Water Framework Directive and the Voluntary Initiative (VI) on pesticides can be found below.

Taken together, these initiatives may well result in more constraints being placed on the use of pesticides – but there will also be incentives to follow more sustainable practice.

CAP Reform

CAP reform has made arable production more market-oriented. Pressures to increase profitability may lead to the removal of unprofitable land from production and improved targeting of plant protection products to reduce costs. These effects suggest a declining trend in use following CAP reform. On the other hand, some changes to arable crops production that are expected to take place following CAP reform are likely to increase plant protection product use such as removal of set-aside, simplified rotations, potential increases in root cropping and vegetable production and perhaps the use of cheaper and less selective pesticide products. The overall impact of CAP reform on plant protection use is therefore difficult to predict at this stage, especially given the effect of changes in grain prices.

Environmental Stewardship (ES) was launched in March 2005 and is also likely to impact on usage in England. The scheme has two main components:

- **Entry Level Stewardship (ELS)** is a 'whole farm' scheme open to all farmers and land managers who agree to carry out basic environmental management that goes beyond the Single Payment Scheme (SPS) requirement to maintain land in Good Agricultural and Environmental Condition (GAEC). An **Organic Entry Level** equivalent is also available for those who manage all or part of their land organically.
- **Higher Level Stewardship (HLS)** builds on the success of the Countryside Stewardship and Environmentally Sensitive Areas Schemes. HLS rewards more ambitious environmental management and is designed to help deliver significant biodiversity and other environmental benefits in high priority situations.

ES includes a range of management options, including buffer strips, field margins, conservation headlands and low-input grassland, which should lead to reduction in plant protection product use under these specific measures which, in turn, will benefit wildlife, soils and watercourses.

A Review of Progress of ES has just been completed to: provide assurance in relation to delivery to date (on the basis of an independent evaluation of performance); explore ways of securing better value for money; and take account of new policy priorities, in particular climate change. The aim is to incorporate as many changes as early as possible to maximise the impact on new agreements and to have the more substantive changes in place for the first wave of the ELS renewals from 2010. The review recommendations include a commitment to examine ways of building on the benefits of the ELS management plan options, which have recently been removed following discussions with the EU Commission as part of the process of EU approval of the Rural Development Programme for England (RDPE), under which ES is funded.

Environmental Schemes also operate in Scotland, Wales and Northern Ireland to encourage agricultural practices that protect wildlife and enhance the landscape. Agri-environment schemes have operated in Scotland since 1987. They are designed to encourage farmers and crofters to manage their land for the benefit of Scotland's wildlife and habitats. Participation in the schemes is for a minimum of 5 years. As well as providing benefits for biodiversity, the schemes also help support local communities in Scotland's rural areas. In Wales Tir Gofal is a whole farm scheme that includes: land management; new access routes; payments for additional work to protect and manage habitats; and training for farmers, including courses on managing specific habitats and practical skills. In Northern Ireland, the new Northern Ireland Rural Development Programme for 2007-2013 will include an integrated Northern Ireland Countryside Management Scheme and an Organic Farming Scheme to support conversion to organic production. Further details of these environmental measures can be obtained from the relevant administration.

Water Framework Directive

The Water Framework Directive 2000/06/EC (WFD) puts in place a common framework for the integrated management of the water environment across the EU. The WFD introduces common environmental objectives and requires Member States to have in place a range of environmental controls, including controls on both point source and diffuse source pollution.

In 2006 the Commission adopted a proposal for a daughter directive of the WFD regarding Priority List substances which includes some pesticides and components of pesticides. This will be aimed at a progressive reduction of emission discharges and losses of Priority List substances. For a subset of persistent, bio-accumulative and toxic 'priority hazardous substances' (PHSs), agreement will be needed on cessation or phasing out of emissions within 20 years of the proposal being agreed. The proposal is subject to co-decision between the European Council and European Parliament and negotiations are continuing in 2008.

Industry Initiatives

The Voluntary Initiative (VI) was established by the farming and crop protection industry in 2001 and has undertaken over 40 projects to date. The inclusion of key provisions from the VI (on sprayer testing, professional development for spray operators and crop protection management plans) within the Farm Assurance Schemes ensures wide uptake and has represented a significant step forward in promoting the sustainable use of plant protection products. The Farm Assurance Schemes have been, and are likely to remain, important vehicles for changing practice in the farming industry.

9. Delivery

To achieve the strategic outcomes described in Section 5, activities will be focused into targeted Action Plans. These are aimed at minimising adverse impacts on the environment and offering protection for the health of people. Special measures are targeted at the amenity and amateur products sectors and an Action Plan is also proposed on 'availability' to safeguard (as far as possible within the existing pesticide regime) the availability of products particularly for minor crops. This also considers the scope for promoting the use of 'alternative' products and techniques to replace conventional chemical pesticides. The Action Plans are described briefly below and are included in full in section 14 of this document.

Each Action Plan will have a small implementation group responsible for developing a more detailed action plan and ensuring the planned initiatives are taken forward. The groups will report on progress periodically to the Pesticides Forum. We will publish a formal update on progress under each Action Plan on the Pesticides Safety Directorate website each year.



10. The action plans

The strategy covers two main areas of risk – human health and the environment.

Human Health

This plan will have three components covering the protection of consumers, operators and residents/bystanders.

• Consumers

The protection of consumers is an essential objective of the pesticide regulatory regime. No pesticide product would be approved if the risk assessment that is undertaken before any approval is granted by the independent Advisory Committee on Pesticides indicated an unacceptable risk based on internationally accepted procedures for risk assessment. The statutory controls on approvals are backed up by a linked system of statutory Maximum Residue Levels (MRLs – defined in Annex 2) on pesticide residues in food and an expert committee on residues issues (the Pesticides Residues Committee). A key current issue in relation to consumer protection is the potential risk posed by exposure to multiple residues. This was the subject of a report from the Committee on Toxicity (COT)² and the COT's recommendations are being acted on by the various agencies involved. Measures related to these three issues form the main components of the consumer component of this action framework.



• Operators

There are an estimated 50,000 spray operators on arable farms in the UK and may be a similar number on livestock farms who undertake small amounts of spraying. In addition, there may be up to 50,000 operators working in the amenity sector. An essential objective of the regulatory system is to protect all those who use pesticides. No pesticide product would be approved if the assessment undertaken before any approval is issued indicated an unacceptable risk. In addition, all pesticide users (except amateurs in their own garden) must have obtained a certificate of competence (unless they are operating under the 'grandfather rights' granted to those already in the industry when this requirement was introduced). These controls are backed up by the statutory Code of Practice on Using Plant Protection Products which provides guidance – including guidance on personal protection – to all pesticide users. Finally, there is a substantial government research programme directed at monitoring the health of those occupationally exposed to pesticides. The operator component contains activities which seek to review and/or strengthen all these arrangements.

• Residents and Bystanders

The protection of human health is an essential objective of the pesticide regulatory regime. As stated above, no pesticide product would be approved if the assessment undertaken before any approval is issued indicated an unacceptable risk. The potential risk to the health of residents and bystanders was the subject of a recent report from the Royal Commission on Environmental Pollution (RCEP)³. The Government's response to the report⁴ set out a series of measures designed to address the issues identified by the RCEP. These measures form the substance of this component.

²Working Group on the Risk Assessment of Mixtures of Pesticides and Similar Substances: Report of Committee on Toxicity of Chemicals in Food, Consumer Products and the Environment (October 2002)

³Crop Spraying and the health of residents and bystanders: RCEP (September 2005)

⁴The Royal Commission on Environmental Pollution Report on Crop Spraying and the Health of Residents and Bystanders – Government response: Defra (July 2006)

The action plans

Environment

This plan has two components (originally developed as two separate plans) covering water and biodiversity respectively.

- **Water**



The enhancement of water quality is a key objective of the strategy. We also need to integrate water protection policies in relation to plant protection products with wider water policy matters such as tackling the requirements of the Water Framework Directive. Water quality is already being tackled through initiatives such as the England catchment-sensitive farming delivery initiative and through the Voluntary Initiative for pesticides which includes pilot water catchment projects. The water action plan seeks to integrate and build on these initiatives.

- **Biodiversity**



The authorisations system aims to limit the direct adverse effects of pesticides on non-target species. These controls are under continuous development. However, the authorisation system alone will not eliminate non-target species effects altogether as there are many other factors that impact on non-target species (such as the availability of food) and other initiatives are likely to have a major part to play in supplementing the pesticide regulatory controls. Initiatives are also required to address the indirect effects of pesticides on biodiversity. The biodiversity action plan is based around taking some of these key initiatives forward.

Sector plans

There are two sector-specific action plans dealing with specialist areas of the pesticides market, and a cross-cutting one on product availability and techniques.

- **Amenity**



Pesticides are not only used in agriculture and horticulture. Significant quantities are also deployed for amenity uses (including the highways and parks sectors). These uses have historically received less attention than farm uses and there may be less supervision of spraying activities in some situations. There is also less organised monitoring of use patterns in this sector.

There are, therefore, concerns over the possible impact of the use and disposal of products by some amenity users. An Amenity Forum has been established to bring together the key stakeholders and to encourage best practice. The action plan for the amenity sector aims to build on this initiative.

- **Amateur**



Pesticides are widely used by members of the public. Although the quantities used by any individual are tiny, the number of gardeners in the country using pesticides (estimated at around 6-7 million) means that the total quantity of pesticide used by amateurs, while still small in relation to farm use, is significant.

Whilst amateur products present a much lower risk than professional products, their use by large numbers of untrained individuals raises special issues. The amateur use action plan aims in particular to encourage best practice and to ensure the safe disposal of unused products.

- **Product Availability**



Virtually all farmers (including many organic growers) rely on pesticides to produce an economic crop. The availability of a sufficient range of products and techniques to control pests and diseases is, therefore, central to sustainable farming. Problems with the availability of pesticides are being exacerbated as the EC review programme under Directive 91/414/EEC removes many of the older substances from the market. The MRL

programme for similar reasons is likely to reduce the range of permitted pesticide uses. The problem will be particularly acute for 'minor pesticide uses' (uses on minor crops, or minor uses on major crops) which occur principally in the horticultural sector.

The Government believes that the availability of pesticides is largely a matter for the market and for the crop protection and farming industries. It is also the case that pesticide availability cannot compromise the overriding need to ensure high standards of human and environmental protection. Nevertheless, the Government does recognise that it has a role, working with key stakeholders, to support initiatives which encourage the availability of pesticides, particularly for minor crops. The action plan includes initiatives designed particularly to help maintain sufficient pesticide availability for the production of minor crops in the UK.

11. Science and knowledge transfer

A strong scientific base is critical to the success of this strategy. Many of the actions under this strategy are based on a scientific analysis of the state of the environment and the factors that influence that state. A substantial research and development programme is, therefore, required to support the strategy. Successful mechanisms of knowledge transfer are also vital.

Defra spends about £5m each year on four areas of research relevant to pesticides:

- Support to regulatory work including development of better ways to assess and manage risks arising from pesticide use;
- Support to Government policy to protect human health and reduce the adverse environmental impact of pesticide use. This research covers more sustainable crop protection practices and ways to protect biodiversity.
- Work on alternative plant protection technologies and integrated crop management systems that reduce reliance on chemical products, and consideration of issues such as pesticide resistance; and
- Support to monitoring and enforcement activity, including continuing improvement and development of analytical methods.

Many of the current and planned research projects are carried out with the direct involvement of stakeholders.

Knowledge transfer is vital to bringing new technologies to professional users. The results of R&D need to be carried forward into advice to farmers and other users in the most appropriate way, to promote best environmental practice.

Schemes such as the VI contribute much to the process of knowledge transfer, and encouraging this process is one of the aims of this strategy. The Pesticides Forum plays an important advisory role on knowledge transfer issues, which the Action Plans will draw on.

12. Indicators

Developing and applying indicators is essential for measurement of the impact of Government and industry efforts to promote the sustainable use of pesticides. The Pesticides Forum and the VI have developed a range of indicators for environmental impacts. Indicators are also under development within the EU through the Harmonised Environmental Indicators for Pesticide Risk (HAIR) project which is linked to the Commission's Thematic Strategy for Pesticides.

As the UK strategy aims to develop the sustainable use of plant protection products, the work of the Action Plan Groups and the indicators to monitor this work have been arranged under the headings of the three pillars of sustainability – economic, environmental and social measures. Annex 3 shows how the indicators are related, from the high level strategic ones, down to core indicators which will be developed by the specific Action Plan Groups. The economic benefits of plant protection products will largely be shown in other parts of Defra's work such as sustainable food production and maintaining a thriving farming and food sector.

Key indicators from amongst those in Annex 3 are already being used to monitor progress towards achieving the objectives of the existing environmental Action Plans. Further indicators will be developed in consultation with stakeholders within the implementation group for the Human Health Action Plan and development of the environmental indicators will continue.

13. Review of this strategy

Progress under the various Action Plans arising from the frameworks will be reported on an annual basis on the PSD website. The pesticides strategy will also be kept under review in line with any changes in Defra's wider departmental strategy.

14. Strategy Action Plans and Strategy 'Governance'

Action Plans

Human Health
Environment – Biodiversity
– Water
Amenity Use
Amateur Use
Product Availability

Strategy 'Governance'

The Human Health Action Plan in this document is a draft outline prepared by the Government. A detailed version of the plan will be developed by an Action Plan Implementation Group during 2008.

The Environment, Amenity Use, Amateur Use and Product Availability Plans are outlines of detailed plans developed by Action Plan Implementation Groups since publication of the Strategy in 2006.

The detailed action plans, which outline responsibilities, priorities and relevant indicators, can be viewed at: <http://www.pesticides.gov.uk/environment.asp?id=70>

The Pesticide Forum advises the Government on the work of the Action Plan Groups. The Forum is an independent stakeholder group established in 1996 to advise the Government on the responsible use of pesticides.

Diagrams showing the relationship between the Forum and the Action Plan Group and the range of bodies contributing to delivery of the Strategy can be found in Annexes 3 and 4.

Human Health Action Plan

This plan aims to maintain and develop high levels of human health protection. It is made up of three components dealing with the protection of consumers, operators/other workers and residents/bystanders.

Consumers	
Activity	Action areas
<p>Regulation</p> <p><u>European</u></p> <p>Directive 91/414/EEC</p> <p>MRLs Regulation 396/2005/EC</p> <p><u>Domestic</u></p> <p>Directive 91/414/EEC</p> <p>MRLs Regulations</p>	<p>Contribute to EC programme on evaluating new and existing active substances under Directive 91/414/EEC. Develop consumer risk assessment under 91/414/EEC including measures to take account of cumulative/aggregate exposure.</p> <p>Contribute to EC programme to develop comprehensive annexes of MRLs to allow implementation by 2008, and participate in EU residues monitoring programme.</p> <p>Re-register products following annex 1 inclusion of active substances. Monitor compliance with statutory MRLs (through the annual pesticide residues monitoring programme overseen by the Pesticide Residues Committee (PRC)).</p> <p>Introduce MRLs following EC agreement.</p>
<p>Other Government Initiatives</p>	<p>Undertake follow up work to WIGRAMP report on exposures to mixtures of chemicals. FSA's pesticide residue minimisation action plan, which includes guides for five crops – apples, pears, cereals, potatoes and tomatoes – that draw together examples of existing best practice and pesticide manufacturers' recommendations that could help to reduce pesticide residues in the specific crops.</p> <p>Engagement with other international organisations, e.g. OECD and WHO, to ensure best regulatory scientific practices are followed.</p>
<p>Voluntary</p>	<p>Growers' organisations and other associations/bodies to increase user awareness of best practice and residues minimisation strategies through e.g. produce assurance schemes.</p> <p>Trade organisations and others to maintain/develop awareness of MRLs among wholesalers, caterers, and retailers, including small businesses.</p>
<p>Research and Development</p>	<p>Research on potential impact of residues on human health and methods of analysis for pesticide residues in food.</p>

Operators/Workers	
Activity	Action areas
<p>Regulation</p> <p><u>European</u></p> <p>Directive 91/414/EEC</p> <p>Draft EC Sustainable Use Directive</p> <p><u>Domestic</u></p> <p>Directive 91/414/EEC</p> <p>Sustainable Use</p>	<p>Contribute to EC programme on evaluating new and existing substances under Directive 91/414/EEC.</p> <p>Review operator and worker exposure assessment as part of re-negotiation of 91/414/EEC.</p> <p>Negotiate new directive to enhance EC controls and on pesticide use.</p> <p>Re-register products following Annex 1 inclusion of active substances.</p> <p>Review grandfather rights provision.</p>
<p>Other Government Initiatives</p>	<p>Review Pesticide Incident Approval Panel (PIAP).</p> <p>Conduct Annual Human Health Incident Survey.</p> <p>Information collected from approval holders.</p> <p>HSE Pesticide Application Certificate of Competence Cohort Study.</p>
<p>Voluntary</p>	<p>Voluntary Initiative to support best practice including support for continuous profession development (CPD) and regular sprayer testing.</p>
<p>Research and Development</p>	<p>Research on biological monitoring, tank mix effects on dermal absorption, epidemiology and other issues relevant to occupational exposure to pesticides.</p>

Strategy Action Plans and Strategy 'Governance'

Bystanders/Residents	
Activity	Action areas
<p>Regulation</p> <p><u>European</u></p> <p>Directive 91/414/EEC</p> <p>EU Thematic Strategy for Pesticides</p> <p><u>Domestic</u></p>	<p>Aim for new regulation to replace 91/414/EEC to provide for record keeping and access to spray records and notification of neighbours according to national policy.</p> <p>Aim for updated annexes in EU legislation in relation to bystander risk assessment and develop associated guidance.</p> <p>Proposed Sustainable Use Directive to strengthen EC controls on pesticide use.</p> <p>Develop Government response to Royal Commission report on pesticides and bystanders including carrying out a pilot study to investigate measures for disclosure of pesticide spray records to the public and extend requirement to keep records of pesticide treatment to all users.</p>
<p>Other Government Initiatives</p>	<p>To consider strengthening the messages in the PPP Code with respect to measures to protect bystanders/residents Review Pesticide Incident Approval Panel (PIAP).</p> <p>Conduct Annual Human Health Incident Survey.</p> <p>Information collected from approval holders.</p>
<p>Voluntary</p>	<p>Industry to develop a voluntary approach including the production of a 'Good Neighbour Guide' for use by spray operators.</p>
<p>Research and Development</p>	<p>Research on potential impact of pesticides on human health and on improved methodologies for bystander/resident risk assessment.</p>

Environment Action Plan

This plan aims to ensure high levels of environmental protection. The plan is made up of two components (previously developed as separate plans) dealing with protection of water and terrestrial biodiversity.

Water	
Activity	Action areas
<p>Regulation</p> <p><u>European</u></p> <p>Directive 91/414/EEC</p> <p>EU Thematic Strategy for Pesticides</p> <p><u>Domestic</u></p> <p>Plant Protection Products Regulations</p> <p>Risk assessment and mitigation</p>	<p>Contribute to EC programme on evaluating new and existing active substances under Directive 91/414/EEC.</p> <p>Development of package of measures to ensure compliance with measures on protection of waterbodies and the aquatic environment.</p> <p>Re-register products following Annex I inclusion of active substances.</p> <p>Review case for assessing synergistic and additive effects, controls on aerial spraying and UK buffer zone policy and operation of LERAP scheme.</p>
<p>Other Government Initiatives</p> <p>Water Monitoring programmes</p> <p>Aquatic Biodiversity</p> <p>Waste management</p> <p>Water Framework Directive</p>	<p>Improve programmes monitoring pesticides in the water and the aquatic environment.</p> <p>Development of measures to protect and promote sensitive species and habitats from adverse effects of pesticides.</p> <p>Improving links with other Waste Strategy initiatives and promoting best practice amongst users.</p> <p>To support implementation of WFD by establishing closer linkages with process of setting EQSs and UK-specific pollutants, developing pesticide specific programmes of measures and development of catchment-based approaches.</p>
<p>Voluntary</p>	<p>Crop protection and farming industries to promote relevant best practice activities, principally within framework of the Voluntary Initiative.</p>
<p>Research and Development</p>	<p>Government research directed at reducing uncertainty within the environmental risk assessment process and development of practical mitigation measures.</p>

Strategy Action Plans and Strategy 'Governance'

Terrestrial Biodiversity	
Activity	Action areas
<p>Regulation</p> <p><u>European</u></p> <p>Directive 91/414/EEC</p> <p>EU Thematic Strategy for Pesticides</p> <p><u>Domestic</u></p> <p>Plant Protection Products Regulations</p> <p>Risk assessment and mitigation</p>	<p>Contribute to EC programme on evaluating new and existing active substances under Directive 91/414/EEC. Consider how system can be adapted to strengthen promotion of biodiversity.</p> <p>Development of package of measures to ensure compliance with measures on protection of conservation areas.</p> <p>Re-register products following Annex I inclusion of active substances.</p> <p>Review case for assessing synergistic and additive effects.</p>
<p>Other Government Initiatives</p> <p>UK Biodiversity Action Plan</p> <p>Waste management</p> <p>Whole-farm approach</p>	<p>Development of measures to protect and promote sensitive species and habitats from adverse effects of pesticides.</p> <p>Improving links with other Waste Strategy initiatives and promoting best practice amongst users.</p> <p>Promote inclusion of measures to protect biodiversity within environmental and other incentive schemes. Preparation of guidance and training on use of compensatory and mitigation measures. Identification and preparation of guidance on protection and promotion of biodiversity in farmland habitats.</p>
<p>Voluntary</p>	<p>Crop protection and farming industries to promote relevant best practice activities, principally within framework of the Voluntary Initiative.</p>
<p>Research and Development</p>	<p>Government research directed at reducing uncertainty within the environmental risk assessment process and development of practical mitigation measures.</p>

Amenity Use Action Plan

This plan aims to ensure high levels of protection for waterbodies and the environment by ensuring widespread use of best practice in use and disposal of plant protection products in the amenity sector.

Activity	Action areas
<p>Regulation</p> <p>European</p> <p>Directive 91/414/EEC</p> <p>EU Thematic Strategy for Pesticides</p> <p>Domestic</p> <p>Plant Protection Products Regulations</p> <p>Risk assessment and mitigation</p>	<p>Contribute to EC programme on evaluating new and existing active substances under Directive 91/414/EEC.</p> <p>Development of package of measures to ensure compliance with measures relating to amenity use of pesticides.</p> <p>Re-register products following Annex I inclusion of active substances.</p> <p>Use of the model specifically tailored to amenity situations to more accurately predict residues in watercourses. Development and assessment of impact of the model.</p>
<p>Other Government Initiatives</p> <p>Water Monitoring programmes</p> <p>Water Framework Directive</p>	<p>Improve programmes monitoring amenity pesticides in the water and the aquatic environment.</p> <p>To support implementation of WFD by developing pesticide specific programmes of measures.</p>
<p>Voluntary</p>	<p>Industry (working in conjunction with Government) to promote relevant best practice activities with Local Authorities, principally within framework of the Amenity Forum.</p>
<p>Research and Development</p>	<p>Research programmes directed at minimising use, uncertainty within the risk assessment process and development of practical mitigation measures. Regular surveys of use and practice in the amenity sector.</p>

Amateur Use Action Plan

This plan aims to ensure best practice in use and disposal of plant protection products in the amateur sector.

Activity	Action areas
<p>Regulation</p> <p>European</p> <p>Directive 91/414/EEC</p> <p>EU Thematic Strategy for Pesticides</p> <p>Domestic</p> <p>Plant Protection Products Regulations</p> <p>Risk assessment and mitigation</p>	<p>Contribute to EC programme on evaluating new and existing active substances under Directive 91/414/EEC.</p> <p>Development of package of measures to ensure compliance with measures relating to sale, use and disposal of amateur products.</p> <p>Re-register products following Annex I inclusion of active substances. Compliance with revised labelling requirements.</p> <p>Use of the model specifically tailored to amateur situations to more accurately predict residues in watercourses. Development and assessment of impact of the model.</p> <p>Development of the model assessing operator exposure for amateur products.</p>
<p>Communication</p>	<p>Development and roll-out of: training programmes for retail staff; best practice advice for users; disposal advice and information for retailers, users and local authorities.</p>
<p>Research and Development</p>	<p>Research programmes directed at minimising use, uncertainty within the risk assessment process and development of practical mitigation measures. Regular surveys of use and practice in the amateur sector.</p>

Product Availability Action Plan

This plan aims to ensure those required to control pests, weeds and diseases have access to a sufficient range of products and techniques in a sustainable fashion.

Activity	Framework for Action
<p>Regulation European Directive 91/414/EEC MRLs Regulation 396/2005 Domestic Authorisation processes</p>	<p>Proposed extension of data protection, development of zonal authorisations, use of essential use derogations. Introduce/maintain MRLs to support all minor uses, ensure appropriate substances are not subject to MRLs. Re-register products following Annex I inclusion of active substances. Compliance with revised labelling requirements. Maintain and develop the special off-label recognition scheme, develop 'fast-track schemes' for authorising minor uses, bio-pesticides and semiochemicals and promotion of mutual recognition.</p>
<p>Communication</p>	<p>Use of Minor Use Network and liaison with EC minor use initiatives, early exchanges of information between regulators, growers and producers, liaison with plant breeders.</p>
<p>Research and Development</p>	<p>Research programmes directed at minimising use and uncertainty within the risk assessment process.</p>

Annexes

- Annex 1: UK Industry and Plant Protection Products Usage
This Annex details overall use of amount and overall value of pesticides used or sold in the UK. It also includes a diagram of the supply and usage chain.
- Annex 2: Existing Legislative Framework for Plant Protection Products
This Annex details the legislative framework for pesticides. It outlines how the framework covers all stages of the 'life cycle' of these products.
- Annex 3: Pesticide Indicators Framework
This Annex shows the framework into which indicators developed under the Strategy are placed. It demonstrates how they relate to the three pillars of sustainability, the Strategy's high level strategic indicators and the Action Plans.
- Annex 4: Strategy Governance
This Annex details the issues (legislation, industry initiatives, incentives and R&D) considered by the Action Plan Groups in developing plans to deliver the strategic outcomes relevant to them. It also shows how each of the groups fits into the wider action frameworks and the role of the Pesticides Forum in overseeing all of this work to ensure the Strategic outcome is delivered.

UK Pesticides Industry and Pesticide Usage

Supply chain

The UK crop protection industry supplies three main market sectors:

- Agricultural and horticultural where sales of 18,500 tonnes of active substances generated £329m¹.
- Garden and household where sales of 3,600 tonnes of active substances generated £42m¹; and
- Amenity (e.g. roads, railways, parks) and forestry where sales of almost 966 tonnes of active substances generated £17.2m¹.

Generally products supplied for agricultural and horticultural, amenity and forestry can only be applied by those holding relevant professional qualifications. There are no such restrictions on the use of garden and household products.

The crop protection industry is a global one. The research and development costs associated with developing new pesticide active substances are very substantial (current industry estimates are around \$200 million per active substance). Only a handful of multinational companies are involved in this work.

Active substances are formulated into products designed to combat a particular pest or disease. Formulating crop protection products is also a specialised and global business but a much larger number of companies are involved. In the UK around 250 companies are involved in the formulation or marketing of products.

Formulated products designed for 'professional users' are purchased by specialised distributors. There are around 400 distributors in the UK serving the agriculture and amenity sectors, some of whom also provide pesticide spray application services in addition to selling products. Products designed for garden and household use may be purchased direct by one of the UK's major retailers or sold through distributors to smaller retailers.

Figure 3 is a diagrammatic representation of the UK plant protection industry.

Use of pesticides in the UK

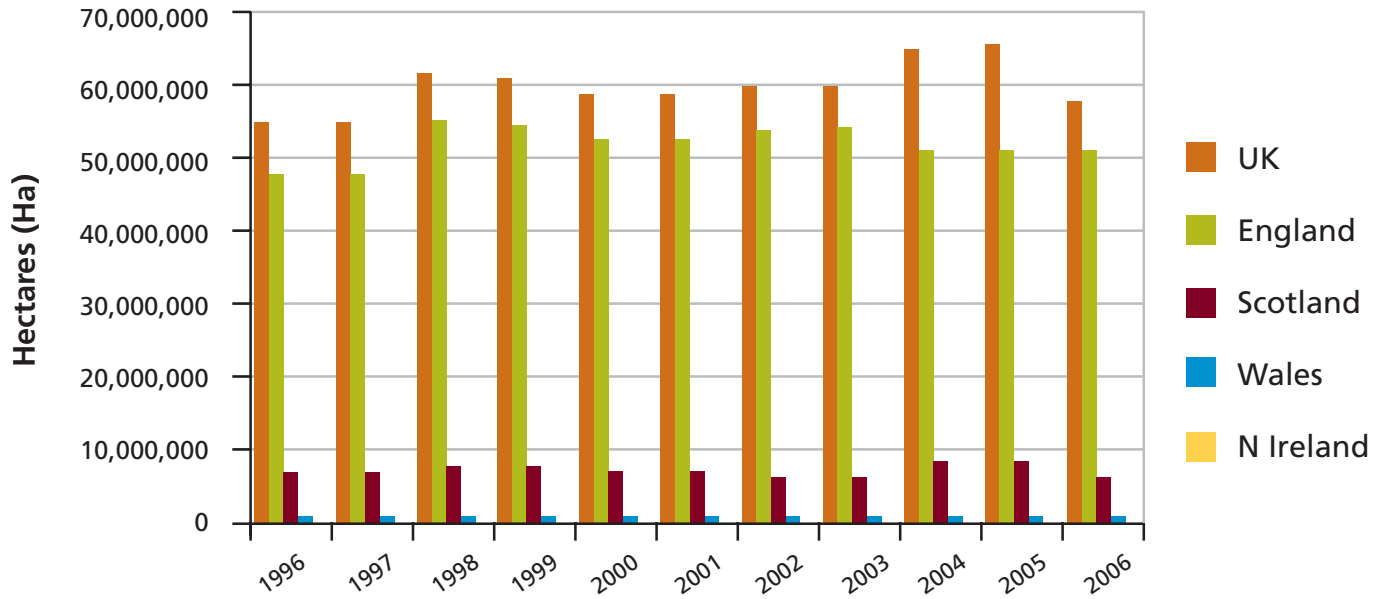
Official surveys of pesticide usage on agricultural and horticultural crops are conducted annually to a programme fixed by the Advisory Committee on Pesticides. Arable surveys are conducted every other year, with all other crop groups surveyed on a four-yearly cycle within England and Wales. A similar team collects usage data in Scotland.

Whilst good data exists for the use of pesticides in the agricultural and horticultural sectors there is less information on use in other sectors. Work to be developed under this Strategy will address this knowledge gap.

The charts overleaf illustrate patterns of pesticide use in the United Kingdom. It can be seen that while the area of treated crops has been gradually increasing over the past decade, the weight of active substance applied is fairly stable. The majority of use occurs in England.

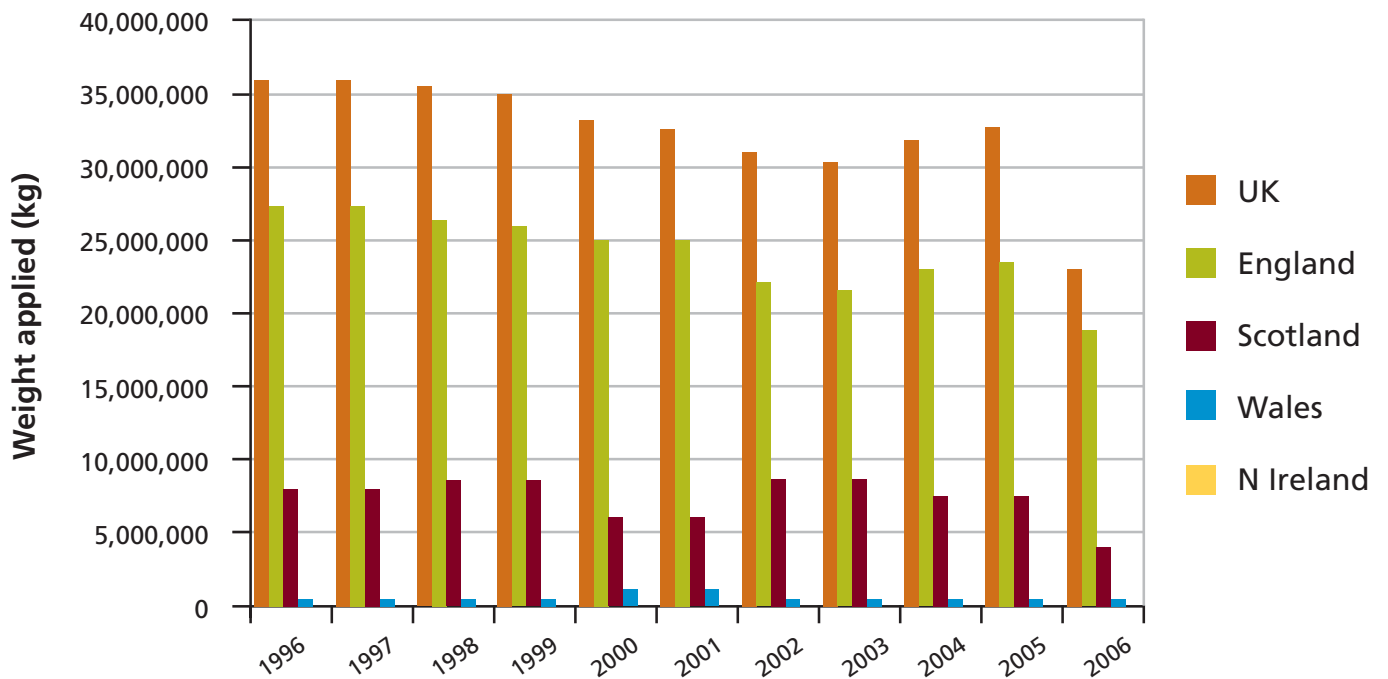
¹UK Sales of Plant Protection Products 2006 – Crop Protection Association Figures published June 2007.

Figure 1. Area treated (UK)



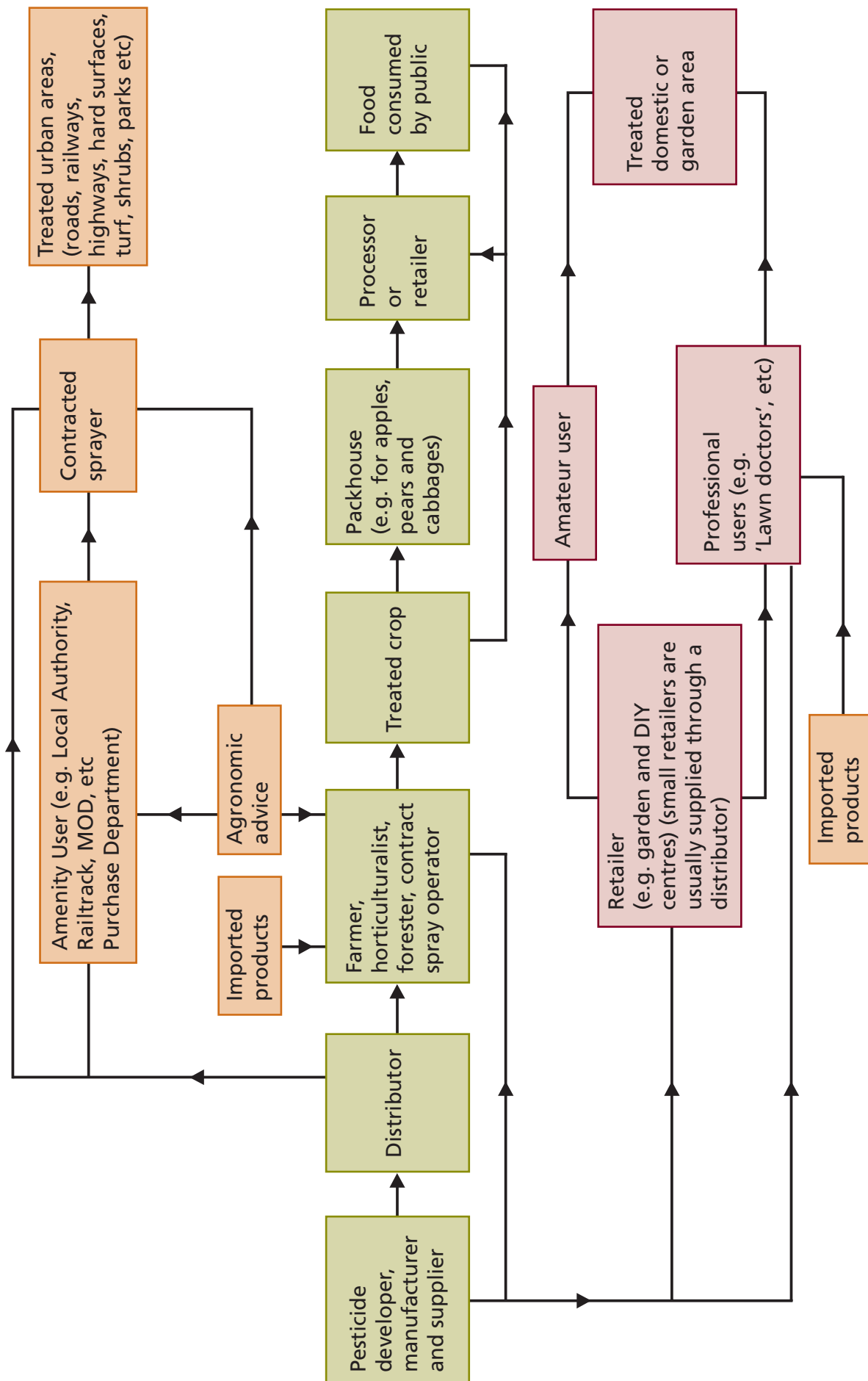
Note: The “treated area” is essentially a multiple of the area of crop grown and the number of times it is treated. N Ireland notes are based on formulation treated area.

Figure 2. Weight of active substance applied (UK)



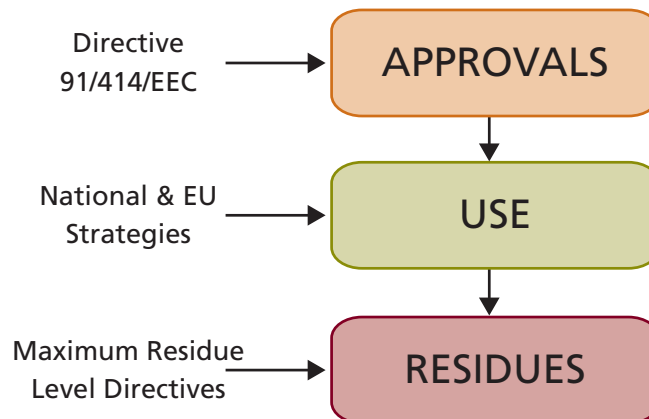
UK Plant Protection Products Industry

Figure 3



Existing Legislative Framework for Plant Protection Products

Legislation on plant protection products operates broadly at 3 levels as illustrated below.



Approvals/Authorisations

First, the EC Plant Protection Products Authorisations Directive (Directive 91/414/EEC) controls the products that can be **marketed**. Under the Directive the “active substances” which can be used in plant protection products are approved at EC level. If they are approved they are placed on a “positive list” which forms Annex I to the Directive.

Once an active substance is placed on Annex I Member States can authorise or “register” (or if the product had previously been approved under national rules, “re-register”) individual products that contain that active substance. This is done by the Advisory Committee on Pesticides. However, Member States must register compounds according to a common set of rules. These rules are known as the Uniform Principles and form Annex VI to the Directive. The objective of the Uniform Principles is to increase harmonisation in pesticide availability amongst the Member States. An application for the authorisation of the same product in different Member States should result in the same outcome unless agricultural or environmental factors in the two states are sufficiently different to mean that use is acceptable in one but not in the other.

There is a major review programme in place under Directive 91/414/EEC which is designed to ensure that all the active substances that were on the EC market before its introduction meet modern standards. Approaching 1,000 substances are scheduled for review and about half of these have already been withdrawn, largely for commercial reasons. The review of active substances is due to conclude by the end of 2008.

The Annex I listing process involves the submission of experimental scientific data (typically involving over 200 experimental studies and 50,000 pages of data). These data influence both the outcome of the regulatory process and the particular conditions (such as the rates of use, timing of applications or special protection measures required) that are attached to the use of a particular product if it is approved.

Use

Second, there are controls on pesticide **usage**. Some of these controls flow from the approvals system. As noted above, rates and timings etc are prescribed as part of the approvals system. Wider controls on the use of pesticides are currently subject to national rules within EC Member States. In the UK these include:

- A statutory code on the safe use of plant protection products;
- A requirement for all professional spray operators to hold a certificate of competence. Users born before 1965 are exempted from this requirement but must be adequately trained (known as “grandfather rights”);
- Detailed controls such as on the mixing of pesticides for use or the use of adjuvants.

The European Commission has made proposals for a new Framework Directive on the sustainable use of plant protection products. This proposes community controls which will replace some of the existing UK measures. The Commission’s proposal includes the following elements:

- Requirements for providing users, distributors and advisers with access to training;
- Requirements on a mandatory sprayer inspection system;
- Requirements for measures to protect the aquatic environment, sites of conservation value and public spaces.

Residues

Third, legislation controls pesticide **residues in food**. Residues in fruit and vegetables, cereals and foodstuffs of animal origin (as well as processed baby foods) are controlled through a system of statutory Maximum Residue Levels (MRLs). MRLs are the maximum concentration of plant protection product residues legally permitted in food and animal feeds. The prescribed levels are based on good agricultural practice (GAP); if the user follows the GAP the level of plant protection product in the crop at harvest should not exceed the MRLs. MRLs are intended primarily as a check that the GAP is being followed and to assist international trade in treated produce.

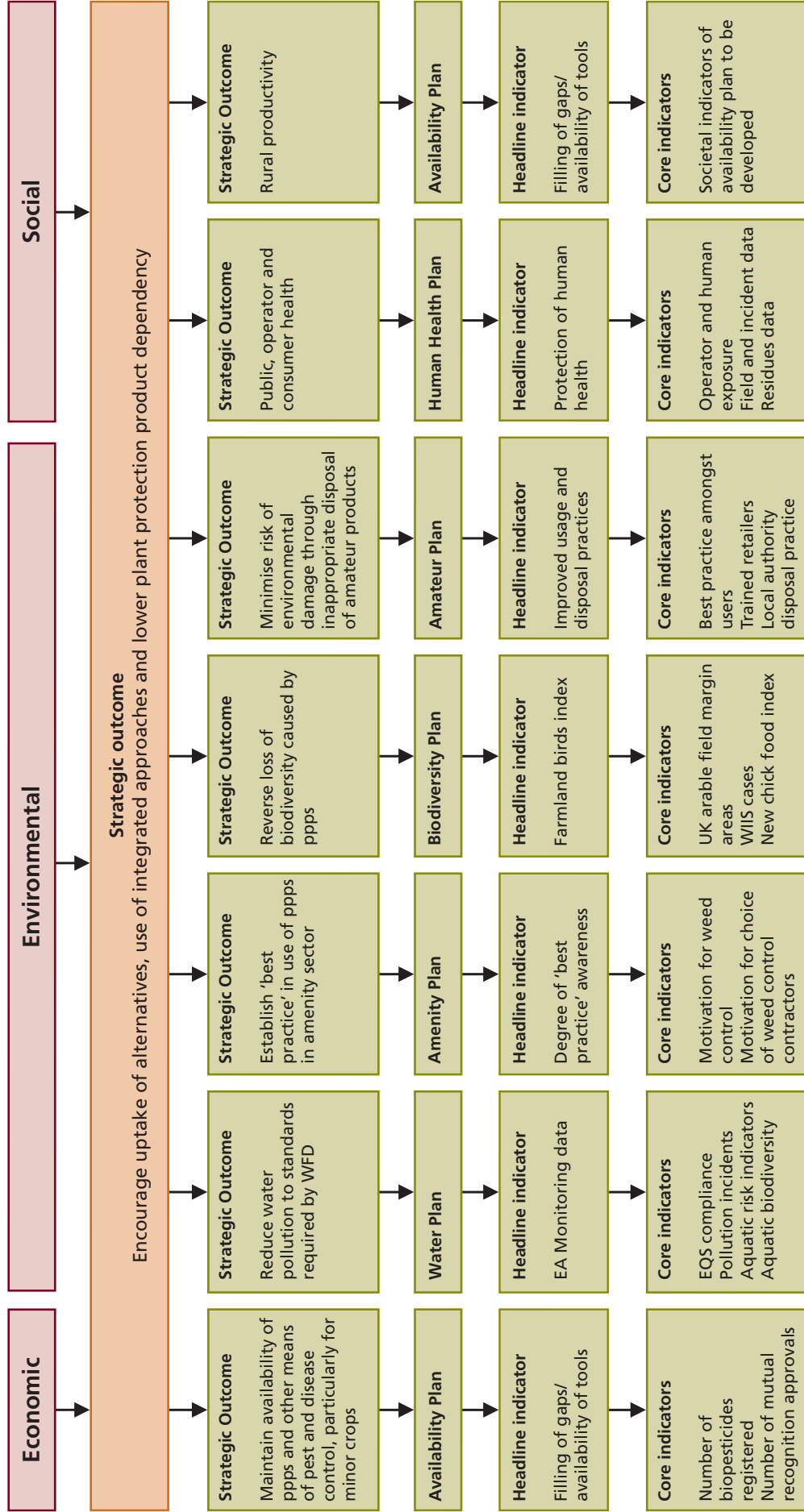
The GAP (and hence the MRL) are always set in such a way that adherence to the GAP will not lead to dangerous residue levels. But MRLs are not safety limits in themselves and are usually set well below what would be “a safe level”. It thus follows that residues in excess of an MRL are not necessarily a risk to health, and the Acceptable Daily Intake (ADI) and Acute Reference Dose (ARfD) are used to assess in a precautionary manner appropriate long and short term exposure to residues in foodstuffs.

MRLs are being set through a long-term EC programme establishing individual limits for different active substance/food commodity combinations. All the legislation on MRLs has recently been consolidated into a new EC regulation (396/2005/EEC) which aims to establish an MRL reflecting all the authorised uses of pesticides within the Community as well as MRLs that are required to take account of imports into the Community. Under the new system, if a specific MRL is not established then a default level of residue (which is effectively zero) is the statutory maximum permitted. This new legislation is likely to be introduced in 2008 after various technical annexes to the EC regulation have been adopted.

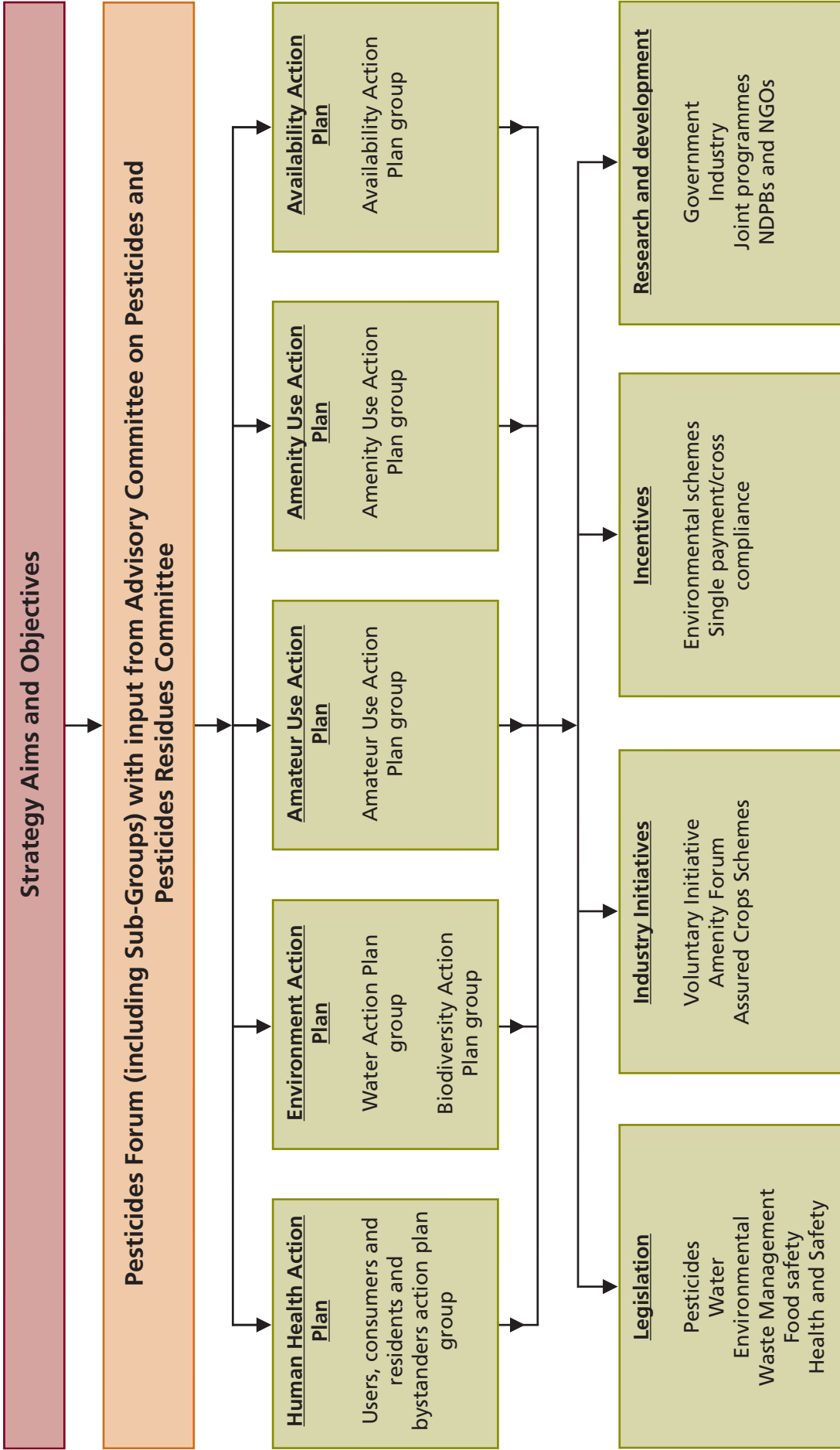
Monitoring

A number of schemes are in place to monitor plant protection product use. These include systems for collecting and evaluating enquiries and reports on human health impacts, the Pesticide Usage Survey, the Wildlife Incident Investigation Scheme and the Residues Surveillance Programme. In addition, monitoring of surface and ground water is undertaken by the Environment Agency for England and Wales and equivalent bodies in Scotland and Northern Ireland.

Pesticide Indicators Framework



Strategy Governance



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for uncoated paper and 75% recycled fibre for coated paper.

Nobel House, 17 Smith Square
London SW1P 3JR

www.defra.gov.uk

PB13035 March 2008