

Written Evidence submitted by Georgina Downs, UK Pesticides Campaign

Executive Summary

1.1 On the understanding¹ that the Environmental Audit Committee will be considering wider issues in its inquiry than just the impact of neonicotinoid pesticides on bees and other pollinators, then the UK Pesticides Campaign submits the following written evidence, which is primarily in relation to the exposures, risks and adverse health impacts of pesticides² *in general* (and not specifically neonicotinoids) on residents and the public.

1.2 A **short summary** of the UK Pesticides Campaign's written evidence is as follows:-

- All chemical pesticides are deliberately designed to be toxic, that is their purpose, and therefore all chemical pesticides have inherent hazards for human health.
- The dangers of pesticides can clearly be seen on the data sheet for each pesticide product that can carry various warnings such as “*Very toxic by inhalation,*” “*Do not breathe spray; fumes; vapour,*” “*Risk of serious damage to eyes,*” “*Harmful, possible risk of irreversible effects through inhalation,*” and even “*May be fatal if inhaled.*”
- It is now beyond dispute that pesticides can cause a wide range of both acute, and chronic, adverse effects on human health, including on the health of residents exposed to them. This includes irreversible and permanent chronic effects, illnesses and diseases.
- Approx. 80% of pesticides used in the UK each year are related to agricultural use.
- The majority of poisoning incidents and acute adverse health effects recorded annually in the Government's own monitoring system are from agricultural pesticides used on crops.
- The Government has **repeatedly failed to take action** when faced with, including in its own monitoring system, evidence of actual harm, as well as the risk of harm, to human health from crop-spraying under the current policy and approvals regime.
- Yet **EU law requires** that pesticides can only be authorised for use if it has been **established** that there will be *no harmful effect on human health*. It also **requires** a proactive approach to reviewing authorisations *after* approval, including that authorisations shall be cancelled and pesticides prohibited where there is a risk of harm.
- The Government's monitoring system currently only considers the acute effects of *individual* pesticides and therefore does not, in general, monitor or deal with either (i) chronic ill-health effects caused by pesticides or (ii) the effects of mixtures of pesticides.

¹ As indicated by the Committee Clerks of the Environmental Audit Committee.

² The main types of pesticides used in agriculture include insecticides, herbicides, and fungicides.

The fact that there has been, to date, no specific monitoring or collection of data in the Government's monitoring system in relation to the chronic effects, illnesses and diseases reported by people is a situation that has previously been criticized in a number of official reports dating back to 1987 and Government has *still* not changed its policy to rectify this.

- The **reality of crop spraying in the countryside** is not merely related to exposure to one individual pesticide or to one single group of pesticides, as agricultural pesticides are rarely used individually but commonly sprayed in mixtures (cocktails) – quite often a mixture will consist of 4 or 5 different products. Each product formulation in itself can contain a number of different active ingredients, as well as other chemicals, such as solvents, surfactants and co-formulants (some of which can have adverse effects in their own right, *before* considering any potential synergistic effects in a mixture(s)). Studies have shown mixtures of pesticides (and/or other chemicals) can have synergistic effects.
- Scientific papers have concluded that “*the total emissions of pesticides may range from several percent up to almost all the applied quantities*” and in relation to vapour that, “*Volatilization may represent a major dissipation pathway for pesticides applied to soils or crops, accounting for up to 90% of the application dose in some cases*”, and that “*Volatilization may last for a period of several days to a few weeks (or sometimes even longer), and sometimes exhibits a diurnal cycle*”.
- Scientific studies have found pesticides **miles** away from where they were applied and have calculated health risks for residents and communities living within those distances.
- **The existing UK Government policy and approvals system fundamentally fails to protect people in the countryside from pesticides, particularly rural residents.**
- There are serious flaws in the approach to exposure and risk assessment for public health.
- The fact that, to date, there has never been ***any*** assessment in the UK of the risks to health for the long term exposure for those who live in the locality of pesticide sprayed fields, and/or who go to school in the locality of sprayed fields, means that under EU law **pesticides should never have been approved for use in the first place for spraying in the locality of residents' homes, schools, children's playgrounds, among other areas.**
- Children are particularly vulnerable to the effects of pesticide exposure because their bodies cannot efficiently detoxify chemicals, as their organs are still growing and developing. Also when children are exposed at such a young age they will obviously have a longer lifetime to develop long-term chronic effects after any exposure.
- The Government previously **failed to act** on its *own findings* of 82 exceedances of the EU limits set for exposure (the AOEL), in some cases the AOEL **was exceeded up to 20 to 30 times over**, which is an *order of magnitude higher*, when **any** exceedance, on the Government's *own previously stated case*, and most importantly **under EU law, would lead to immediate action of authorizations being refused (or trigger prohibition/revocation if the AOEL exceedance is discovered after approval).**

- The Government's previous estimated exceedances of the AOEL clearly demonstrated that products have been in use in the UK which resulted in residents (and others in the countryside) being exposed to levels greatly in excess of the AOEL, year after year.
- Yet the UK Government has **not, to date, taken any action** to prevent the exposure and risk of harm for residents in these circumstances, and has violated its obligation under EU law to prohibit the use of pesticides where the AOEL is known to be exceeded.
- The UK Government has continued to refuse to introduce **any** statutory conditions of use to protect residents and others from exposure. Such conditions of use would include, most importantly, the prohibition of the use of pesticides in the locality of residents' homes, as well as schools, children's playgrounds, nurseries, hospitals, amongst other areas. Yet such a measure is absolutely crucial for public health protection, especially that of vulnerable groups, including babies, children, pregnant women, and those already ill.
- Therefore, in relation to the health of rural residents and communities, the UK Government has, to date, knowingly failed to act, has continued to shift the goalposts, cherry picked the science to suit the desired outcome and has misled the public, especially residents, over the safety of agricultural pesticides sprayed on crop fields throughout the country. The Government's continued line that there is no evidence of harm from pesticides, as well as no risk of harm, is just untenable and inexcusable. The evidence is there and has been there for a considerable time, the Government is just determined not to act on it. The Government's response to this issue has been of the utmost complacency, is completely irresponsible and is definitely not "*evidence-based policy-making.*"
- The failings in the UK Government's policy and approach to exposure and risk assessment regarding human health, and related and repeated inaction, is also comparable to the serious concerns that have been raised regarding the UK Government's policy and approach to exposure and risk assessment in relation to other species, such as bees.
- Bees and other species, just like residents and other humans, could be exposed to innumerable *mixtures* of pesticides, repeatedly, throughout every year, and for years.
- In relation to the risk of harm to bees from pesticide mixtures, a US study in 2010 highlighted the potential synergistic effects on bee health from mixtures and combinations of different pesticides as the researchers found 121 **different** pesticides and metabolites within 887 wax, pollen, bee and associated hive samples. Therefore aside from the individual products that carry warnings of a risk to bees on the product label and safety data sheet information (such as '*harmful*', '*dangerous*', '*extremely dangerous*' or '*high risk*' to bees), there will also be the risk of adverse impacts on bee health from the cumulative effects of multiple exposures to mixtures of different pesticides.
- The **reality of pesticide spraying in the countryside** is **not** reflected in any of the risk assessments under the UK Government's existing approach, whether for humans or bees.

- The principal aim of pesticide policy and regulation is supposed to be the protection of public health and the environment. Yet the Government, DEFRA, PSD (now CRD), and ACP, have all continued to base decisions in relation to pesticides on the protection of industry and business interests as opposed to what is absolutely required as the number one priority of pesticide policy and regulation – **to protect public health.**
- Sales of pesticides in the UK *alone* for 2011/12 was £627 million, and reports have put the value of the world pesticides industry at around a staggering \$52 billion.
- There are clear conflicts of interests in relation to those advising DEFRA Ministers over the pesticides policy agenda, especially regarding the Chemicals Regulation Directorate (CRD) that receives approx. 60% of its funding from the agrochemical industry. This is broken down into the fees charged to companies for applications, and a charge on the UK turnover of pesticides companies. For a number of years now this has resulted in the CRD receiving around £7 million or more per year from the agro-chemical industry.
- A number of ACP members have links to the pesticides industry. For eg., some members may undertake consultancy work, have shares in and/or receive funding for research support. This has always been an inappropriate structure, as so-called “*independent*” advisors cannot possibly be classified as independent if they have financial or other links with the very industries they are overseeing in relation to the hazards to human health.
- Ministers have also been receiving advice from the Pesticides Forum for many years, and yet year after year the Forum has wrongly asserted in its annual reports that, “*the use of pesticides is not adversely impacting on the health of UK citizens or the environment.*” Considering the grossly inaccurate statements that the Pesticides Forum has continued to make, effectively denying the adverse health and environmental impacts of pesticide use, then it is also of serious concern that it is intended that the Forum be responsible for the monitoring and review of the UK’s Action Plan on pesticides after it has been adopted.
- The UK’s policy and approvals regime is based on a wholly inappropriate structure and it goes some way to explaining why the pesticide industry has, for many years, had such control over successive Governments’ policy decisions on pesticides, particularly in relation to the use of pesticides in agriculture. Successive Governments’ have continued to reflect the position of the pesticides industry in **all policy decisions taken to date on pesticides**, (at least since the UK Pesticides Campaign has been in existence since 2001).
- The only real solution to **eliminate** the adverse health and environmental impacts of pesticides is to take a **preventative approach** and avoid exposure altogether with the widespread adoption of truly sustainable **non-chemical farming methods**. This would obviously be more in line with the objectives for sustainable crop production, as the reliance on complex chemicals designed to kill plants, insects or other forms of life, cannot be classified as sustainable. **Therefore it is a complete paradigm shift that is needed, as no toxic chemicals that have related risks and adverse effects for any species (whether humans, bees or other) should be used to grow food.**

1. Introduction

1.3 The UK Pesticides Campaign was founded in 2001 and is the only campaign, not only in the UK, but also across Europe, that specifically exists to highlight the risks and adverse health, environmental and financial impacts of pesticides on rural residents and communities, as well as on other members of the public exposed. I myself, as the Founder and Director of the UK Pesticides Campaign, have lived next to regularly sprayed fields for over 28 years, and I therefore have the direct experience of living in this situation.

1.4 Over the last 11 years the UK Pesticides Campaign has produced extensive written and visual materials, and has made a number of presentations across Europe, to highlight the UK Government's fundamental failure to protect public health, in particular rural residents and communities, from exposure to agricultural pesticides sprayed in the locality of residents' homes, schools, children's playgrounds, and public areas. The visual materials produced include two videos entitled "*Pesticide Exposures for People in Agricultural Areas – Part 1 Pesticides in the Air; Part 2 The Hidden Costs*" to illustrate chemical exposure and the acute and chronic adverse impacts on rural residents exposed.³

1.5 The work of the UK Pesticides Campaign is widely recognised both nationally and internationally,⁴ and has led to a considerable number of prestigious environmental awards and nominations.⁵

1.6 The position of the many residents and members of the public that have contacted the UK Pesticides Campaign (whether by email, phone, post, or other) is always very clear, in

³ The second video on the DVD entitled "*Pesticide Exposures for People in Agricultural Areas –Part 2 The Hidden Costs*" featured, just as an example, a few of the individuals and families from all over the country reporting acute and/or chronic adverse health effects in rural communities surrounded by sprayed fields.

⁴ The work of the UK Pesticides Campaign has been featured in national and international media since 2002. Examples of national media coverage include: in the Times, Sunday Times, Financial Times, Guardian, Observer, Daily Telegraph, Sunday Telegraph, Daily Mail, Daily Express, Daily Mirror, Independent, Independent on Sunday, Metro; as well as on a number of BBC TV and radio programmes (including BBC News, Politics Show, Countryfile, The Food Police, Radio 4's: Today programme, Woman's Hour, You and Yours, PM, The World at One, Costing the Earth; BBC World Service, BBC Radio 5 Live); ITV and Channel 4 programmes (including ITV News, Channel 4 News,); and on Sky News. In relation to international media coverage, articles that have featured the work of the UK Pesticides Campaign have appeared in, amongst others, the US (including CNN), Canada, Australia, New Zealand, France, Germany, Portugal, India, and The Beijing News in China. In addition a diverse range of magazines have also featured the work of the campaign including: Cosmopolitan, Marie Clare, Grazia, Red, Vogue, Ecologist, Resurgence, Lifescape, Private Eye, Science in Parliament, Country Living, The Big Issue, New Consumer, Easy Living, Ethical Living, Spirit and Destiny, Landworker, Positive Health, amongst others. The work of the campaign has also been featured in a number of books including "*The Vitamin Murders*" by James Fergusson; "*Scared to Death*" by Christopher Booker/Richard North; "*Toxic Airlines*" by Tristan Loraine; "*People Power*" by Jon Robins and Paul Stookes.

⁵ A list of awards and nominations can be seen at Wikipedia at:- http://en.wikipedia.org/wiki/Georgina_Downs

that they are fully supportive of, and sign up to, the aims and objectives of the campaign, (and are often very pleased to discover that there is a campaign specifically representing and fighting on residents' behalf). The emails the campaign has received, often detail the individual's own acute and/or chronic adverse health effects (or that of a family member(s) or other(s), or on their domesticated animals/pets etc.) as a result of exposure to agricultural pesticides from crop spraying in their locality. It is important to stress that the UK Pesticides Campaign does not just receive reports from residents, but also from farmers, operators, ex-farm managers and other workers exposed to pesticides. The UK Pesticides Campaign also receives reports from people who are exposed and suffer acute and/or chronic adverse effects from other pesticide sources, (eg. such as amenity use) **however, agricultural exposure does make up the majority of the cases reported.**

1.7 The UK Pesticides Campaign has continued to campaign for the introduction of the following necessary **mandatory measures** for the protection of residents from pesticides:

- The **prohibition of pesticide use** in the locality of residents' homes, schools, children's playgrounds, hospitals, nurseries, and other buildings where people may be situated. Considering the distances that pesticides have been shown to travel then the distance where the use of pesticides is prohibited needs to be **substantial**.
- A new legal obligation to give rural residents **at least 48 hours' prior notification** before any pesticide spraying in their locality, including notification of the chemicals to be used.
- A new legal obligation for farmers and other pesticide users to provide information on the pesticides they use **directly** to residents (as third party access is inadequate, especially in the event of an acute poisoning when getting that information immediately is critical).

1.8 The UK Pesticides Campaign has continued to argue that the only real solution to eliminate the adverse health and environmental impacts of pesticides is through the widespread adoption of **non-chemical farming methods**. This would be more in line with the objectives for sustainable crop production, as the reliance on complex chemicals designed to kill plants, insects or other forms of life, cannot be classified as sustainable.

2. Adverse impacts of pesticides on human health

2.1 **All** chemical pesticides are deliberately designed to be toxic, that is their purpose, and **therefore all chemical pesticides have inherent hazards for human health.**

2.2 The dangers of pesticides can clearly be seen on the safety data sheet for each pesticide product that can carry various warnings such as “*Very toxic by inhalation,*” “*Do not breathe spray; fumes; vapour,*” “*Risk of serious damage to eyes,*” “*Harmful, possible risk of irreversible effects through inhalation,*” and even “***May be fatal if inhaled.***”

2.3 It is now beyond dispute that pesticides **can cause** a wide range of both acute, and chronic, adverse effects on human health. This includes irreversible and permanent chronic effects, illnesses and diseases. The European Commission (EC) clearly acknowledged when publishing the proposals for the new EU pesticides legislation (in July 2006) that pesticides can cause various adverse effects on human health, including on the health of rural residents who are exposed to them. For example, in the European Commission’s July 2006 document entitled “*Questions and answers on the pesticides strategy*”⁶ under the heading “*How do pesticides affect human health?*” the EC stated:

“Direct contact with the pesticide itself may occur during the time of application of the chemical but indirect exposure is the most common form of contamination. Residents and bystanders can be indirectly exposed to pesticides via spray drift. .. The effects of indirect exposure can be worse for especially vulnerable population groups such as children, the elderly or other particular risk groups (chronically sick people for instance).

Long term exposure to pesticides can lead to serious disturbances to the immune system, sexual disorders, cancers, sterility, birth defects, damage to the nervous system and genetic damage.”

2.4 In the EC’s July 2006 “*Impact Assessment of the Thematic Strategy on the Sustainable Use of Pesticides,*” that accompanied the proposal for a new Use Directive, the EC stated⁷

“Acute impairment of health - Short-time exposure to pesticides **can cause severe acute health effects**, including diarrhoea, nausea, vomiting, abdominal pain, profuse sweating, salivation, blurred vision, irritation of skin **and death** are examples that have been reported in various publications.

Chronic impairment of health - Chronic health impairment results from a low but constant level and has a long-term character. Major incidents, in particular clear correlations between exposure and chronic effects, are not often recognised immediately since no obvious symptoms of poisoning exist.

*There are various sources for continuous exposure, like the consumption of polluted water, pesticide residues in food, regular application of PPP over many years, **or residential proximity to it and consequently direct exposure via air.** People regularly or repeatedly exposed to or*

⁶ Source: “*Questions and answers on the pesticides strategy*” published on 12th July 2006 and available at:- <http://europa.eu/rapid/pressReleasesAction.do?reference=MEMO/06/278&format=HTML&aged=0&language=EN&guiLanguage=en>

⁷ Source: Page 23 of the “*Impact Assessment of the Thematic Strategy on the Sustainable Use of Pesticides*” published on 12th July 2006 and available at:- http://ec.europa.eu/environment/ppps/pdf/sec_2006_0894.pdf

working with pesticides, may have a higher risk of incidence of cancer or other chronic diseases, birth defects, cancer in offspring, stillbirths and reproductive problems, skin rashes and disorders, disturbed enzyme and nervous system.”

2.5 The EC’s July 2006 “*Impact Assessment of the Thematic Strategy on the Sustainable Use of Pesticides*,” that accompanied the proposal for a new Use Directive, went on to state:⁸

*“Under real life conditions, **acute and chronic adverse effects associated with exposure to the common classes of pesticides** can vary a lot for a given substance or substance class. Conversely, different substances or substance classes **can cause** similar symptoms. For example, the following have been reported for certain classes of insecticides:*

- *ORGANOPHOSPHATES **can cause** headaches, pain, weakness, numbness in extremities, dizziness, damage to memory, mood control, chest tightness, loss of coordination, uncontrolled urination, seizures, death due to respiratory failure;*
- *CARBAMATES **can cause** headaches, genetic mutations, vomiting, birth defects, dizziness, reduced fertility, seizures, kidney damage, shortness of breath, nervous system damage;*
- *PYRETHRINS and PYRETHROIDS **can cause** lack of coordination, deep lung allergy, convulsions, pneumonia, muscle paralysis, vomiting, asthma and death due to respiratory failure.”*

2.6 These are just some of the acute and chronic adverse health effects that can result from exposure to a given substance or substance class. Residents can of course be exposed (unknowingly) to **all** these classes of pesticides, along with other classes, (as well as to innumerable *mixtures* of these and other classes), repeatedly, throughout every year, and in many cases, like my own situation, for decades, and currently under the UK policy and approach residents have **absolutely no protection at all** from the risks and related acute and chronic adverse health impacts. (See further paras 3.1 – 3.37 in the following section)

2.7 The EC Impact Assessment document goes on to again highlight the position of other vulnerable groups where any health risks may be increased, as it states⁹:

“Effects could be amplified for especially sensitive population groups, such as children (due to specific physiological and developmental factors), the elderly (due to their possibly compromised metabolic capacity), or other particular risk groups (immunologically compromised people, chronically sick, etc.)”

2.8 In addition to the European Commission statements, Cornell University’s teaching module “*Toxicity of Pesticides*”¹⁰ clearly states that,

⁸ Ibid.

⁹ Ibid.

*“Pesticides can: cause deformities in unborn offspring (teratogenic effects), cause cancer (carcinogenic effects), cause mutations (mutagenic effects), poison the nervous system (neurotoxicity), or block the natural defenses of the immune system (immunotoxicity).”*¹¹

*“Irreversible effects are permanent and cannot be changed once they have occurred. Injury to the nervous system is usually irreversible since its cells cannot divide and be replaced. Irreversible effects include birth defects, mutations, and cancer.”*¹²

2.9 There has been a significant increase in recent years of a number of these chronic health conditions. For example, according to cancer statistics, an estimated 12.7 million new cancer cases and 7.6 million deaths occurred worldwide in 2008.¹³ There are around 309,500 new cases of cancer (excluding non-melanoma skin cancer) diagnosed each year in the UK alone, and more than 1 in 3 people will develop some form of cancer during their lifetime.¹⁴ In 2009, there were more than 156,000 cancer deaths in the UK, and over one in four (28%) of all deaths in the UK were due to cancer.¹⁵

2.10 As recognised by the European Commission, pesticides can damage the brain and central nervous system of humans. This is not surprising considering that many pesticides are neurotoxic. Parkinson’s Disease is a neurological disorder that has been repeatedly linked to pesticide exposure in numerous international studies. One reputable study published in March 2009 found that exposure to just two pesticides within 500 metres of residents’ homes increased the risk of Parkinson’s Disease by **75%**.¹⁶ According to statistics from Parkinson’s UK, 127,000 people live with Parkinson's in the UK, or 1 in 500 people.¹⁷ One in 20 people who get Parkinson's is under 40 years of age.¹⁸ There is currently no cure for Parkinson's.¹⁹

¹⁰ Cornell University’s teaching module “*Toxicity of Pesticides*” can be seen at: <http://psep.cce.cornell.edu/Tutorials/core-tutorial/module04/index.aspx>

¹¹ To see this quote in Cornell University’s teaching module “*Toxicity of Pesticides*” click on “*Check Answer*” to the study question at: <http://psep.cce.cornell.edu/Tutorials/core-tutorial/xml/CoreTest.aspx?Q=4-19>

¹² This quote can be seen in Cornell University’s teaching module “*Toxicity of Pesticides*” at: <http://psep.cce.cornell.edu/Tutorials/core-tutorial/module04/index.aspx>

¹³ Source: Worldwide cancer statistics from [GLOBOCAN 2008](http://www.globocan.org) published in June 2010, which can be seen at: <http://info.cancerresearchuk.org/cancerstats/world/index.htm>

¹⁴ UK statistics from Cancer Research UK published December 2011, which can be seen on the first page at: http://info.cancerresearchuk.org/prod_consump/groups/cr_common/@nre/@sta/documents/generalcontent/018070.pdf

¹⁵ UK statistics from Cancer Research UK published December 2011, which can be seen on the 2nd page at: http://info.cancerresearchuk.org/prod_consump/groups/cr_common/@nre/@sta/documents/generalcontent/018070.pdf

¹⁶ “*Parkinson’s Disease and Residential Exposure to Maneb and Paraquat From Agricultural Applications in the Central Valley of California*,” by Sadie Costello, Myles Cockburn, Jeff Bronstein, Xinbo Zhang, Beate Ritz.

¹⁷ Source: Parkinson’s statistics taken from the Parkinson’s UK website at: http://www.parkinsons.org.uk/about_parkinsons/what_is_parkinsons.aspx

2.11 The cost to the UK economy of just a few of the chronic health conditions that pesticides can cause is massive. In the UK alone, in 2008, cancer cost £5.13 billion in terms of NHS costs alone, and the total costs to society in England was estimated to be a staggering £18.33 billion, with these costs predicted to increase to £24.72 billion by 2020²⁰. It has been calculated that Parkinson's Disease costs the NHS £384 million per year with 78% of these costs being taken up by hospitalisations,²¹ and the total cost in the UK of the disease is estimated to be between £449 million and £3.3 billion annually, depending on the cost model and prevalence rate used²².

2.12 **Although there are a number of different causes for these chronic conditions, even if pesticides are only causing a proportion, the costs would still be enormous, particularly when added up with all the health costs of other related conditions, along with all the environmental costs.** For example, the cost of removing pesticides from drinking water *alone* is estimated to be approx. £140 million per year.²³ It has been estimated to cost approx. a further £4.75 million to monitor pesticides at 2500 surface and groundwater sites.²⁴ It costs £2 million a year to check for pesticide residues in food²⁵ and an estimated £5.4 million for pesticide monitoring in both food and livestock together.^{26 27}

2.13 It is therefore clear that chemical farming has enormous external costs in the UK every year. Obviously it goes without saying that the personal and human costs to those suffering chronic diseases and damage cannot be calculated in financial terms. The significance of these consequences requires the adoption of a **preventative approach** to

¹⁸ Ibid.

¹⁹ Ibid.

²⁰ Source: Policy Exchange, Research Note, Feb. 2010, entitled "*The cost of cancer*," page 1, which can be seen at: <http://www.policyexchange.org.uk/images/publications/the%20cost%20of%20cancer%20-%20feb%202010.pdf>

²¹ Source: Parkinson's statistics taken from the Parkinson's UK website in September 2010 in a section entitled "*The cost of Parkinson's to the NHS*." The website has been rejigged recently and the link for that page no longer works. However, the costs statistics were on there in September 2010 as I cited them in an article I wrote for the Ecologist published on 22nd October 2010 at: http://www.theecologist.org/blogs_and_comments/commentators/other_comments/649883/the_pesticides_scandal_government_inaction_is_destroying_lives.html

²² Source: "*The economic impact of Parkinson's disease*" by Leslie J Findley, published in September 2007. Abstract can be seen at: [http://www.prd-journal.com/article/S1353-8020\(07\)00105-8/abstract](http://www.prd-journal.com/article/S1353-8020(07)00105-8/abstract)

²³ Source: Jules Pretty, Professor of Environment and Society in the Department of Biological Sciences at the University of Essex.

²⁴ Source: "*An assessment of the total external costs of UK agriculture*," Prof Jules Pretty *et al*, August 2000.

²⁵ Source: Pesticide Residues Committee (PRC) secretariat, pers comm, September 2010.

²⁶ Source: "*An assessment of the total external costs of UK agriculture*," by Prof Jules Pretty *et al*, August 2000

²⁷ These few examples given of some of the environmental costs are just in relation to the UK *alone* and before considering the equivalent costs across Europe.

make sure that the protection of human health is (which it currently is not, see further below) the overriding priority of the UK Government's pesticides policy and regulations.

2.14 Although UK citizens can be exposed to pesticides from a variety of agricultural and non-agricultural sources (including agricultural and horticultural uses; forestry; uses in the home and garden; and amenity uses) **the agricultural sector is the largest sector, as approximately 80% of pesticides used in the UK each year are related to agricultural use**²⁸ (and which is predominantly related to **ground spraying**, as there is only *limited* aerial spraying that still takes place in the UK). Therefore it is not surprising that the majority of poisoning incidents and acute adverse health effects that are recorded annually in the UK Government's own monitoring system are from agricultural pesticides that are used in crop spraying.²⁹ Further, it is also important to stress that the majority of these poisoning incidents and acute adverse health effects as a result of crop-spraying, are for **residents**, rather than operators, which is again not surprising considering operators generally have protection and residents do not.

2.15 For example, the acute adverse health effects recorded in the Government's own monitoring system³⁰ include, amongst other adverse health effects, the following:

- Chemical burns (including to the eyes and skin);
- Skin and eye irritancy (eg. itching, stinging, burning sensations, rashes and blistering);
- Throat irritation (eg. sore and painful throats); damaged vocal chords;
- Sinus pain; respiratory irritation; difficulty swallowing and chest discomfort; coughing; breathing problems; shortness of breath and asthma attacks;
- Headaches; dizziness; nausea; vomiting; stomach pains; flu-type illnesses; aching joints.

2.16 It is important to stress the fact that the Government's monitoring system currently only considers the acute effects of *individual* pesticides and therefore does not, in general, monitor or deal with either (i) chronic ill-health effects caused by pesticides or (ii) the

²⁸ Agricultural and horticultural uses account for approx. 80 per cent of the amount of pesticides used per year in the UK. Garden, home, forestry and amenity uses account for the balance per year in the UK. (NB. Amenity use only accounts for a mere 4% of pesticide use in the UK per year).

²⁹ For example, the Pesticide Incidents ("PI") Reports, and the Field Operations Directorate ("FOD") Reports. For further information on these reports, and the Government's monitoring system in general, see paragraphs 72 to 118 of the second Witness Statement produced for the legal case *Georgina Downs v DEFRA*, available on the UK Pesticides Campaign website at: <http://www.pesticidescampaign.co.uk/documents/Downs%202.pdf>

³⁰ Ibid.

effects of mixtures of pesticides. The fact that there has been, to date, no specific monitoring or collection of data in the Government's monitoring system in relation to the chronic effects, illnesses and diseases reported by people is a situation that has previously been criticized in a number of official reports³¹ dating back to 1987 (which is now 25 years ago) and the Government has *still* not changed its policy to rectify this situation.

2.17 For the last 11 years the UK Pesticides Campaign has collected reports of both acute adverse health effects, as well as chronic long-term effects, illnesses and diseases, in rural communities where residents live in the locality of pesticide sprayed fields. The **acute effects** reported are the same types of acute effects recorded in the Government's very own monitoring system and include, sore throats, burning eyes, nose, skin, blisters, headaches, dizziness, nausea, stomach pains, burnt vocal chords and flu-type illnesses, amongst other things. The most common **chronic long-term illnesses and diseases** reported include various cancers, (especially breast cancer among rural women, as well as cancers of the prostate, stomach, bowel, brain, and skin), leukaemia, non-Hodgkins lymphoma, neurological conditions, (including Parkinson's disease, Multiple Sclerosis (MS) and Myalgic Encephalomyelitis (ME)), asthma, allergies, along with many other medical conditions. It is important to stress that there are a number of cases where the individuals involved **do have** confirmation from either their doctor (or other medical professional) that the acute and/or chronic effects **are caused** by pesticides. The reports cover all different age groups from the very young (including babies and young children) to the elderly. It is important to note that reports of this nature have gone on for decades.

2.18 **The UK Government has repeatedly failed to take action when faced with, including in its own monitoring system, evidence of actual harm, as well as the risk of harm, to human health caused by crop-spraying with pesticides under the current policy and approvals regime. Yet EU legislation requires that pesticides can only be authorised for use if it has been established that there will be no immediate or delayed harmful effect on human health.³² It also requires a proactive approach to reviewing authorisations *after* approval, including that authorisations shall be cancelled and pesticides prohibited where there is a risk of harm to human health.**

³¹ UK Agriculture Committee of the House of Commons, *The Effects of Pesticides on Human Health*, Second Special Report, Session 1986-87, London: HMSO 1987; the British Medical Association report, *The BMA Guide to Pesticides, Chemicals and Health*, BMA (Edward Arnold) 1990, 1992; the Royal Commission on Environmental Pollution 2005 report, *Crop Spraying and the Health of Residents and Bystanders*.

³² Article 4(3)(b) and Article 4(2)(a) of the European Regulation 1107/2009 which can be seen at:- <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2009:309:0001:01:EN:HTML>

2.19 It is important to stress the fact that the principal aim of any domestic pesticide policy, under then EU Directive 91/414/EEC, and now the new EU Regulation 1107/2009,³³ is based on the **risk of harm**, and **not that harm has to have already occurred**. Therefore as I have continued to argue both throughout my campaign, and the legal case proceedings, under EU legislation the UK Government is **not** supposed to be exposing residents (and others) to the **risk of harm** (whether it be acute or chronic adverse health effects) from exposure to pesticides. This was rightly recognized by Collins J in the High Court Judgment (eg. see the final sentence of paragraph 23 of the High Court Judgment)³⁴

3. Failings of the current UK policy to protect residents (and the public) from pesticides

3.1 The existing UK Government policy and approvals system **fundamentally fails** to protect public health from pesticides, particularly in relation to rural residents and communities. Considering that the full policy failings are so extensive then, in addition to the summarised failings set out in the section above regarding the Government's repeated failure to take action when faced with, including in its own monitoring system, evidence of actual harm, as well as the risk of harm, to human health caused by crop-spraying, I will again only be able to summarise below the key points regarding the failings of the UK approach to exposure and risk assessment for human health. However, I can always provide further documentation if members of the Environmental Audit Committee want to see the **full detailed factual evidence** relating to the UK Government's policy failings regarding human health, and which is on the UK Pesticides Campaign website at: http://www.pesticidescampaign.co.uk/witnessStatement_1.htm in particular the **second** Witness Statement that I produced for the legal case *Georgina Downs v DEFRA*.

3.2 It is important to note that, as will be seen from what is set out below, the failings in the Government's approach to exposure and risk assessment regarding **human health** is also comparable to the serious concerns that have been raised regarding the Government's approach to exposure and risk assessment in relation to other species, such as bees.

³³ Available at: - <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2009:309:0001:01:EN:HTML>

³⁴ [http://www.bailii.org/cgi-bin/markup.cgi?doc=/ew/cases/EWHC/Admin/2008/2666.html&query=title+\(+downs+\)&method=boolean%20%3Chhttp://www.bailii.org/cgi-bin/markup.cgi?doc=/ew/cases/EWHC/Admin/2008/2666.html&query=title+\(+downs+\)&method=boolean%3E](http://www.bailii.org/cgi-bin/markup.cgi?doc=/ew/cases/EWHC/Admin/2008/2666.html&query=title+(+downs+)&method=boolean%20%3Chhttp://www.bailii.org/cgi-bin/markup.cgi?doc=/ew/cases/EWHC/Admin/2008/2666.html&query=title+(+downs+)&method=boolean%3E)

3.3 As said above, European legislation regarding the authorisation of pesticides (formerly EU Directive 91/414 and now EU Regulation 1107/2009³⁵) **requires** that **before** pesticides can be approved for use, risk assessments **must** be undertaken **to establish** that there will be **no harmful effect** on human health. This must apply to **all** the necessary exposure groups, including operators, workers, **residents** living in the locality of pesticide sprayed fields, as well as other members of the public exposed (eg. such as bystanders).

3.4 In early 2001, I identified serious flaws in the Government's current policy and approvals system for protecting residents (and other members of the public) from pesticides and as a result I started to present a case to the Government (which was also highlighted to the EU). This case was in relation to both the serious flaws within the current UK exposure and risk assessment for *bystanders*, and the fact that, to date, **there has been no exposure and risk assessment for a residents specific exposure scenario** (as residents have a completely different exposure scenario to a mere *bystander* and therefore residents and bystanders are two separate exposure groups). The case presented also included the serious inadequacies in the UK monitoring system. (*For further information regarding the serious inadequacies in the UK monitoring system see paragraphs 64 to 152 of the second Witness Statement produced for the legal case*). The campaign I launched in early 2001, the UK Pesticides Campaign, has been calling for urgent changes to pesticides policies ever since to address the lack of **any** protection for residents that currently exists.

3.5 The risk assessment failings are important for me to briefly detail considering that the adverse health impacts that are reported by residents in the UK will be **as a direct result** of the flaws in the UK's approach to exposure and risk assessment for human health.

3.6 Therefore I have briefly detailed below at paras 3.7 to 3.37 some of the key points contained within the critical second Witness Statement that I produced for the legal case *Georgina Downs v DEFRA* regarding the current exposure and risk assessment failings, and which importantly, are based on the UK Government's **very own documents, findings and statements**. The second Witness Statement is available to see in full on the campaign website at:- <http://www.pesticidescampaign.co.uk/documents/Downs%202.pdf>

3.7 To date, the UK Government's only assessment of the exposure and risks of humans other than workers and operators is based on the *predictive* model of a *bystander* which

³⁵ Available at:- <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2009:309:0001:01:EN:HTML>

assumes that there will only be occasional short-term exposure of transient bystanders. The *bystander* model estimates “*maximum daily exposure*” as equal to **five minutes**’ exposure (or even less, as a previous paper by the Government regulators, the Pesticides Safety Directorate (PSD) now changed to the Chemicals Regulation Directorate (CRD))³⁶ in fact shows calculations based on just **one minute** exposure)³⁷, to the spray cloud at the time of the application only, **from a single pass of a sprayer, at eight metres** from the spray boom and based on exposure **to only one individual pesticide at any time**. The Government asserts that it then assumes this level of daily exposure (that is, exposure for **five minutes** (or less)) to occur once a day over a period of 30 days or at most 3 months.

3.8 My case has always been from the outset that it is impossible to justify taking this short-term *bystander* model (to spray drift (droplets) only, from a single pass of the sprayer, and via inhalation and dermal absorption only) in order to address the position of **residents** who are repeatedly exposed to mixtures (often referred to as *cocktails*) of pesticides from a multitude of exposure factors (see para 3.9 below) and via all exposure routes (ie. oral, dermal and inhalation, as well as via the eyes), throughout every year, and in many cases, like my own situation, for decades. Residents are therefore **not** the same as transient *bystanders*. In the words of a representative of a UK interdepartmental group³⁸:

“...it’s only when we bring together the information about the hazard (about whether the chemical is toxic and in what way it is toxic), its only when we bring that together with the exposure (the route of exposure, the frequency of exposure, the amount of exposure and the duration of exposure) that we can hope to assess what the risk to the health of the individual is.”

3.9 The UK Government’s transient *bystander* exposure assessment (exposure of an adult with 60kg bodyweight) for five minutes (or less), to spray drift *only* at the time of application, from a single pass of a sprayer, at eight metres, via dermal and inhalation routes only, and to just one pesticide only, rather than to a mixture) **fails entirely** to address the chronic, long-term, repeated and cumulative exposure of residents. As set out in meticulous detail at para 56 of the second Witness Statement produced for the legal case, the Government’s current *bystander* risk assessment model **excludes** the following altogether (and which would **all** be relevant for the exposure scenario of **residents**):

³⁶ But referred to in these comments in some places as the Pesticides Safety Directorate (PSD), as that was the name of the regulators at the time the Witness Statement that is referred to in these comments was produced.

³⁷ See paragraphs 7 and 8(a) of the second Witness Statement.

³⁸ Statement by a representative of the Interdepartmental Group on the Health Risk of Chemicals (IGHRC) at the UK Advisory Committee on Pesticides open meeting held on 10th July 2002.

- (a) exposure at less than eight metres from the sprayer³⁹;
- (b) inhalation and dermal exposure outside the five minute (or one minute) time frame⁴⁰;
- (c) any exposure from subsequent passes of the sprayer: for example, the UK Government knows that dermal exposure will be increased threefold by subsequent passes of the sprayer, yet ignores this increase in its bystander exposure model⁴¹;
- (d) any exposure through oral ingestion and via the eyes⁴²;
- (e) long-term exposure to pesticide particles, droplets and vapours in the air in the hours, days, weeks and months after application(s): see para 56(c) of the second Witness Statement. Also the paper by Bedos *et al*, entitled “*Occurrence of pesticides in the atmosphere in France*,” (referred to in the High Court Judgment at paragraph 33) states, “*Pesticides are present in the atmosphere in 3 forms: in liquid and solid phases – as aerosol particles or adsorbed on pre-existing aerosols, or incorporated in fog or rain droplets – or in gaseous phase*” and that, “*These three processes result in highly variable amounts of pesticides contaminating the atmosphere during the days or weeks following pesticide application. The total emissions of pesticides may range from several percent **up to almost all the applied quantities**.*” In relation to vapour, the paper by Bedos *et al*, entitled “*Mass transfer of pesticides into the atmosphere by volatilisation from soils and plants: overview*”, *Agronomie* 22 (2002) 21-33, concluded that, “*Volatilization may represent a major dissipation pathway for pesticides applied to soils or crops, **accounting for up to 90% of the application dose in some cases***”, and that “***Volatilization may last for a period of several days to a few weeks (or sometimes even longer), and sometimes exhibits a diurnal cycle***”;
- (f) exposure to pesticides in pollen, dust (including, but not limited to, harvest dust) and soil⁴³;
- (g) exposure to pesticides transported from outdoor applications and redistributed into an indoor air environment: see paragraph 56(d) of the second Witness Statement. Also, see Lu *et al*, “*Pesticide exposure of children in an agricultural community: evidence of household proximity to farmland and take home exposure pathways*”;

³⁹ See paragraph 56(b) of the second Witness Statement.

⁴⁰ See paragraph 56(c) of the second Witness Statement.

⁴¹ See paragraph 56(a) of the second Witness Statement.

⁴² See paragraph 56(a) of the second Witness Statement.

⁴³ See paragraph 56(d) of the second Witness Statement.

- (h) exposure to pesticides in precipitation and via reactivation⁴⁴;
- (i) exposure to pesticides from long-range transportation: studies have shown pesticides found **miles** away from where they were originally applied, eg. a reputable study in California found pesticides located up to **3 miles away** from the treated areas, and calculated health risks for residents and communities living within those distances⁴⁵;
- (j) exposures to mixtures of pesticides (and other chemicals that may be in the formulation(s)) and any potential synergistic effects⁴⁶: agricultural pesticides are rarely used individually, but are commonly sprayed in mixtures (cocktails) – quite often a mixture will consist of 4 or 5 different products mixed together. Each product formulation in itself can contain a number of different active ingredients, as well as other chemicals, such as solvents, surfactants and other co-formulants (some of which can have adverse effects in their own right, even before considering any potential synergistic effects in a mixture(s)). The existing *bystander* model does not factor in the additional exposures which someone will receive if exposed to a mixture of pesticides at the same time. Various studies have shown that mixtures of pesticides (and/or other chemicals) can have synergistic effects⁴⁷. Further, as highlighted earlier at paragraph 2.10, the study published in March 2009 entitled, “*Parkinson’s Disease and Residential Exposure to Maneb and Paraquat From Agricultural Applications in the Central Valley of California*,” by Sadie Costello, Myles Cockburn, Jeff Bronstein, Xinbo Zhang, and Beate Ritz, **found exposure to just two pesticides within 500 metres of residents’ homes increased Parkinson’s Disease risk by 75%**;
- (k) exposures due to previous or subsequent spraying events (on the same or different days), and cumulative effects⁴⁸: I often receive reports from residents where their houses are surrounded on 3 or even on all 4 sides by sprayed fields, all of which may be sprayed on any given day, (whether it be the same day or on subsequent days), repeatedly, throughout every year. Therefore if a resident is surrounded on all sides by crop fields and is subjected to repeated exposures from all sides then this increases the

⁴⁴ See paragraph 56(e) of the second Witness Statement.

⁴⁵ Lee *et al*, “*Community Exposures to Airborne Agricultural Pesticides in California: Ranking of Inhalation Risks*” (2002). See paragraph 56(f) of the second Witness Statement.

⁴⁶ See paragraph 56(g) of the second Witness Statement.

⁴⁷ For example, a study published in “*Toxicology*,” in January 2002 entitled, “*Interactions between pesticides and components of pesticide formulations in an in vitro neurotoxicity test*,” by J.C. Axelrad, C.V. Howard, W.G. McLean. See further paragraph 56(g) of the second Witness Statement.

⁴⁸ See paragraph 56(h) of the second Witness Statement.

exposure *even further*. Therefore again this scenario is the **reality** for residents living near sprayed fields, particularly those surrounded by sprayed fields on all sides;

- (l) any exposure of babies and children: the current “*bystander*” model assumes a body weight of an adult weighing 60kg, which does not cover those of a lower bodyweight, eg. the bodyweight of a new-born baby (that could be present in a home or garden in the locality of pesticide sprayed fields) might be something like one-twentieth of this amount at 3kg (and have a higher breathing rate and smaller airways) and so can have very significantly higher total exposure per kg bodyweight per day than that of adults, or even toddlers. Babies may spend significant amounts of time out of doors, in prams or (for older babies) playing on the ground in gardens. The evidence in the second Witness Statement showed that again, astonishingly, to date, the UK Government has not made *any* exposure estimates for babies. (See 56(i)(k) of 2nd Witness Statement);
- (m) exposure of other vulnerable groups including pregnant women, the elderly, those who are already ill or disabled, and those taking medication (and where any interactions or synergistic effects between pesticides and the medication must be taken into account)⁴⁹;
- (n) multiple exposure scenarios⁵⁰: where one individual’s exposure takes place not only at home but also elsewhere – eg. at school, playground, office, or other buildings situated in the locality of pesticide sprayed fields. These are all **realistic** long-term multiple exposure scenarios that **have not been accounted for** in the UK Government’s existing approach, which is again astonishing. It is not uncommon for a child to live near sprayed fields **and** attend school near sprayed fields as well, which obviously increases the level of exposure to an even higher level. Children are particularly vulnerable to the effects of pesticide exposure because their bodies cannot efficiently detoxify chemicals, as their organs are still growing and developing. Also when children are exposed at such a young age they will obviously have a longer lifetime to develop long-term chronic effects after any exposure.

3.10 In January and July 2003, an official from the PSD (now CRD) prepared two papers (that were submitted for the consideration of the UK Advisory Committee on Pesticides (ACP) at the January and July 2003 ACP meetings), that considered a *limited* number of additional exposure estimates other than that already relied upon (that is, the five minutes,

⁴⁹ See paragraph 56(j) of the second Witness Statement.

⁵⁰ See paragraph 56(k) of the second Witness Statement.

at eight metres, spraydrift only *bystander* model etc.) It should also be noted though that the PSD's additional exposure estimates were for just a *limited* number of pesticides only, and **not** for **all** the pesticides authorized for use in the UK at that time (and nor has this been done subsequently). See for example paragraph 18 of the second Witness Statement.

3.11 **My second Witness Statement contained a detailed analysis (prepared specifically for the purposes of the UK legal proceedings) of the UK Government's very own figures and findings and showed how the PSD papers themselves flatly contradicted the UK Government's assertion that its existing *bystander* model protects residents.** For the detailed analysis of the January and July 2003 PSD papers, see paras 12 to 36 of the second Witness Statement. The following are some key points.

The January 2003 PSD paper:

3.12 Exposure at less than eight metres: dermal exposure at one metre from the sprayer was found to be up to about eight times that expected at eight metres under the current model, and airborne levels were found to be similarly increased. PSD clearly acknowledged that those "*closer to the sprayer bystanders may experience higher exposures than currently predicted.*" Yet despite this, the UK Government did not modify its bystander exposure assessment to take this higher exposure into account. (See paragraph 14 of the second Witness Statement).

3.13 24-hour air exposure (inhalation only): both German and Californian data on 24-hour air levels that were considered in the January PSD paper (and which was to vapour only and excluded exposure to any droplets and particles in that time-frame) produced estimated 24 hour exposures in excess of the Government's current estimated systemic exposure (from exposure to spraydrift (droplets) *only* (ie. excluding any exposure to vapour and particles) at eight metres for five minutes). But again, no change was made to the UK exposure and risk assessment approach. (See para 15 of 2nd Witness Statement).

3.14 Harvest dust (inhalation only): estimates in the PSD paper of exposure by inhalation of harvest dust showed that in just six and a half minutes of breathing such dust, a person would experience exposure equal to the UK Government's current *maximum daily exposure* estimate (on the five minutes (or less) at eight metres model). Someone breathing such dust for one hour would suffer exposure almost **ten times** that of the *maximum daily exposure* in the current bystander model. Yet the UK Government again

did not alter its exposure model; nor did it ever give any further consideration to this specific exposure factor subsequently. (See paras 16 and 56(d) of 2nd Witness Statement).

3.15 The only suggested justification given in the Jan. 2003 PSD paper for the failure to protect people in relation to harvest dust is that “*bystanders are not likely to experience dust concentrations as high as this nor are they expected, due to the general nuisance of high dust concentrations, to be exposed for long*”. Three points should be noted about this

- (a) The justification put forward is not scientific in nature. Rather, it is a mere assertion about whether the assessed exposure scenario is or is not realistic.
- (b) As to that assertion, while it may be that a transient bystander will, given the choice, limit his or her exposure to harvest dust, the same cannot be said of residents, who have no choice. For example, a resident living close to wheat fields which are harvested year after year may experience, as my family and I have experienced, high levels of harvest dust going over their whole property and land (as shown in my first video on the DVD that I produced to highlight pesticide exposure for rural residents).
- (c) Despite this, and despite the results in the PSD paper, once again, no adjustment has been made to the current UK assessment in order to include in the exposure calculations exposure to pesticides in harvest dust, let alone in other sources, such as pesticides in pollen and topsoil carried by the wind, (eg. when it is eroded by, and then carried by, the wind). The UK Government has not even considered these additional potential exposure factors, let alone estimate what that exposure may be for residents (or even bystanders) in the locality. See paragraph 56(d) of the second Witness Statement. Also see Bedos et al, *Occurrence of pesticides in the atmosphere in France*, section 1, Introduction: “*..due to the wind erosion process, wind can remove soil particles with pesticide molecules fixed on them from the soil surface.*”

3.16 Exposure of children following drift into gardens: the January 2003 PSD paper estimated the systemic absorption (from dermal and oral exposure (excluding inhalation)) of a toddler (weighing 14.5kg) playing for two hours on surfaces adjacent to sprayed fields to be about **sixty-nine times higher** than the estimated systemic exposure using the current bystander assessment model (ie. from exposure to spraydrift for 5 minutes (or less) from the single pass of the sprayer at 8 metres). But once again, despite this significant finding, of toddlers exposure from playing on surfaces adjacent to sprayed

fields over just that *limited* two hour period *only* (and for oral and dermal absorption only, not inhalation) the UK Government did not, at that time, make any change to its exposure and risk assessment approach. (See paragraph 17 of the second Witness Statement).

The July 2003 PSD paper:

3.17 **Exposure at one metre:** the July 2003 PSD paper (despite unwarrantedly discounting potential inhalation exposure⁵¹) showed estimates of exposure for someone at one metre from the sprayer which **exceeded the EU limits set for exposure, the so called Acceptable Operator Exposure Level (AOEL),** sometimes by **many times over at an order of magnitude higher:** for example, exceedances of up to twenty-two times above the AOEL at one metre for trifluralin⁵² (in Hawk); and in relation to orchard spraying of Dithianon (in Dithianon Flowable) exposure at eight metres (ie. under the current UK bystander exposure assessment) exceeded the AOEL up to thirty-one and a half times over. (See paragraph 20 examples (a) to (j) of the second Witness Statement).

3.18 Yet again, despite this very significant finding, the Government did not modify its exposure and risk assessment approach, apparently on the unsupportable assumption in the July 2003 PSD paper that people were “*unlikely to stand much closer than 8 metres,*” (and also that “*any person closer would be more likely to have some involvement in the pesticide application, and therefore be wearing at least overalls.*”)⁵³ It is to be noted that again, that was a purported justification based not on science but upon an unsupported assertion about the presumed situation, and which, in relation to the situation of residents, is one that is very seriously and fundamentally incorrect, and is simply **not the reality.**

3.19 The **reality** is very different, as evidence before the courts, including visual materials showed that in many cases crop-spraying can take place (on a regular basis) within inches of a resident’s home. For example, I had two photos sent to me which show a resident’s home within approx. 12 inches of a regularly sprayed field, and also have additional photos of crop-spraying taking place right next to residents’ homes and gardens. Also the

⁵¹ The July 2003 PSD paper adjusted the potential dermal exposure at one metre (compared with that at eight metres) but **did not** adjust the potential inhalation exposure, despite the January 2003 PSD paper’s finding that at low wind speeds, inhalation exposure was **five times higher** at one metre than at five metres.

⁵² Trifluralin was withdrawn in March 2008 in all Member States following a European Commission decision, (Member States had a grace period which expired on 20 March 2009), but this action was at the behest of the European Commission rather than the PSD, which took no action as a result of the July 2003 PSD paper.

⁵³ “*Exposure of bystanders to pesticides*”, Matthews and Hamey, *Pesticide Outlook* October 2003.

reality of crop spraying in the close proximity of residents homes, schools, children's playgrounds is clearly shown on the DVD, including footage showing a mannequin family (that I previously placed at the edge of our garden) made up of some of the most vulnerable groups including a pregnant woman, 2 babies, and a young child, that was to illustrate **a typical and realistic residential setting**, where people are out in their garden, and then with no warning, spraying takes place. **All these visual materials can all be made available to members of the Environmental Audit Committee on request.**

3.20 It is important to note that the Government's own Field Operations Directorate (FOD) reports *themselves* (which are part of the Government's *own monitoring system*) contain cases where crop-spraying has taken place within a metre or so of the boundary of a resident's property and therefore the Government is actually well aware that this is a very realistic and common situation for residents living in the locality of sprayed fields.⁵⁴

3.21 It is important to note that even if there is a boundary structure, (eg. a hedge, fence etc.) this will not make any difference when it comes to pesticide droplets, particles or vapours in the air, as farmers cannot control pesticides once they are airborne (either at the time of application or subsequently) and therefore pesticides can travel over and above (or even through) any structure of this nature. If a house or its garden, (or a school), is situated less than eight metres from where the sprayer passes, (and in some cases less than even a metre away) then a resident may be exposed at this distance at any time when spraying occurs. Also the spray can enter an open window or airvent and contaminate the inside of the house. Clearly a house (or children's school or other building) cannot be moved from its position and so the situation of people being a metre or less away from a sprayer is most definitely not rare. Speaking personally, for the first 9 years that my family and I lived in our current home, we knew nothing about the pesticide spraying whatsoever (as no one had informed us about this hazardous practice) and thus we did not know they were being applied to the fields adjoining our home. Therefore often I would be playing in the garden as a young girl standing only inches away from a crop sprayer as it passed, without any knowledge that it was dispersing hazardous chemicals. Therefore to reiterate the situation of people being a metre or less away from a sprayer is the reality for many people living near sprayed fields, who of course will not be involved in the pesticide application, and thus who, unlike operators, will **not** be wearing any personal

⁵⁴ See footnote 74 of the second Witness Statement.

protective equipment (PPE), such as respirators, masks, *overalls* etc., on their own property and land, nor, unlike operators, will they be sitting in specifically filtered cabs.

3.22 Very importantly, as said at para 3.17 above, there were also a number of examples in the July 2003 PSD paper of high exceedances of the AOEL at eight metres from the sprayer (ie. under the current UK bystander exposure assessment). An example of this is in relation to the orchard spraying of Dithianon (in Dithianon Flowable) where exposure at 8 metres exceeded the AOEL up to thirty-one and a half times over. It is important to note that the January 2003 PSD paper found that based on drift fallout data from applications in orchards that the drift deposit at 3 metres (the closest distance at which measurements were taken) was “*about 3 times that expected at 8 metres.*” Therefore as I pointed out in para 20(e) of my second Witness Statement that if going by that finding then the exceedance of the AOEL for Dithianon of up to thirty-one and a half times over (at 3155% of the AOEL), if multiplied by 3 (to give an estimate for exposure at 3 metres) would be almost **95 times above the AOEL**. This exceedance could be increased further still if the exposure was at 1 metre away. **Yet any exceedance of the AOEL (even just by 1 time over) is supposed to lead to authorizations being refused, or trigger prohibition if already approved. Products containing Dithianon remain approved for use in the UK, including Dithianon Flowable.**

3.23 The exposure of residents and bystanders at a distance of one metre from the sprayer is, in these circumstances, **plainly realistic** – and the exceedances identified in the July 2003 PSD paper of the EU exposure limit (the AOEL) at a distance of one metre, as well as very importantly the considerable number of exceedances of the AOEL at eight metres (ie. under the current bystander exposure assessment that the UK Government has continued to stand by), sometimes by many times over at an *order of magnitude* higher⁵⁵ therefore give rise to an obligation on the UK Government to prohibit use, which obligation has not been fulfilled. In fact, as can be seen in the second Witness Statement, once all relevant exposure factors and exposure routes are taken into account and included in the exposure calculations, it becomes clear that separation distances of **miles, not metres**, would be needed in order to prevent any exceedance of the AOEL, and in order to protect residents from the risk of harm. For example, in the High Court Judgment in the case *Georgina Downs v DEFRA* at paragraph 28, the Judge referred to the UK

⁵⁵ See paragraphs 20 (d), (e), (f), (g), (i) and (j) of the second Witness Statement.

Government's own data on air levels that had pointed out that "*high levels of a particular pesticide had been identified 300 metres from the sampling station*"; also as highlighted earlier there are international studies where pesticides have been found **miles** away from where they were originally applied and the documented risks for rural residents and communities of various adverse health effects from living within those distances; another study published in the Journal of the American Medical Association (JAMA) in 2005 that confirmed acute illnesses in children and employees from pesticides sprayed on farmland in the locality of schools, pointed out that, at the time the study was prepared that, a number of US states require **the prohibition of spraying in the locality of schools in an attempt to protect children from exposure**, including one state where the distance of the area where the use of pesticides is prohibited in the locality of schools is **2.5 miles**.⁵⁶

- 3.24 **24-hour inhalation exposure (excluding other routes such as dermal, oral and eyes)**: the PSD's calculations in the July 2003 paper showed examples of cases where the 24-hour inhalation exposure to vapour *alone* (ie. ignoring all other exposure sources such as direct inhalation of spray droplets and particles) **substantially exceeded the AOEL**, either in children, or in both adults and children, with exposures for children of up to more than 27 times above the AOEL and even for adults more than twelve and a half times above the AOEL. It is important to note that there were also a number of examples of cases where the 24-hour inhalation exposure (which is to vapour *only* and excludes exposure to droplets and particles in that time-frame) was estimated, by itself, to be very near the AOEL in children (as much as 92% of AOEL) so that there would be a very serious risk of exceeding the AOEL once other exposure factors were taken into account and included in the exposure assessment calculations, and again in some cases the AOEL exceedances could be many times over. (See paras 22 and 23 of 2nd Witness Statement).
- 3.25 **Children's dermal and hand-to-mouth and object-to-mouth exposure**: in the July 2003 paper the PSD exposure estimates through these routes *alone* (that excluded inhalation exposure altogether, and that were said to be estimated based on a toddler weighing 15kg playing on grass for two hours following drift into gardens) were found to **exceed the AOEL** by up to about four and a half times. But again, no conditions of use have, to date, been imposed to prevent such exposure (eg. by prohibiting spraying and pesticide use in the locality of homes, schools, children's playgrounds, nurseries etc.) And

⁵⁶ Study by Alarcon *et al.*, (2005), entitled, "*Acute Illnesses Associated with Pesticide Exposure at Schools.*"

once again, the UK Government gave no consideration whatsoever to the exposure of **babies** having a lower bodyweight (and therefore higher total exposure per kg bodyweight per day) than toddlers. (See paragraph 24 of the second Witness Statement).

3.26 When questioned in 2005 about the cases in the July 2003 PSD paper where exposures for children exceeded the AOEL, a then Department of Health representative stated, “*We would not simply accept an AOEL being exceeded twice in children.*” Despite this, (and despite the fact that there were cases where the exposure for children was estimated to exceed the AOEL many more times than two, eg. child 24 hour inhalation where the exceedance was more than 27 times the AOEL) the Government made no adjustment at the time to its existing exposure assessment model (five minutes at eight metres from the sprayer for an adult weighing 60 kg).

3.27 **Combination of exposure estimates**: it is important to stress the fact that the AOEL exceedances were based on each exposure factor *individually*, as the PSD, as well as the Advisory Committee on Pesticides have, to date, **wrongly** calculated each factor in *isolation* and have failed to **ever** calculate exposure factors together in the exposure calculations, (which is obviously essential to do in relation to the overall exposure scenario in totality for residents). The estimates given in the July 2003 PSD paper clearly showed that if combining a number of the exposure factors together, the AOEL for a number of pesticides would be **greatly exceeded for children, and adults,** (and of course *even further exceeded* if already exceeded just from any one exposure factor *individually*)

3.28 Despite this, to date, the PSD and ACP have continued to knowingly fail to calculate exposure factors together.

3.29 As set out above (and in more detail in the second Witness Statement at paragraphs 27-55), the UK Government did not, as a result of either of the 2003 PSD papers, alter its bystander exposure assessment model (exposure at eight metres for five minutes (or less) to spraydrift only from a single pass of a sprayer) to include in the exposure calculations all other relevant exposure factors. No further estimates were carried out on all the other pesticides approved for use in the UK at that time, and nor has this been done subsequently. In fact despite the results obtained in the July 2003 PSD paper, astonishingly the stated conclusion of the PSD paper was that, “*For products applied as sprays, these examples demonstrate that the current approach is protective of longer-term*

bystander exposure". Therefore **no action** was taken by the UK Government to revoke the authorisations for pesticides where exposure (even on the *limited* number of additional exposure factors considered by the regulators in the 2003 PSD papers, and even when taken *alone* rather than in combination) exceeded the EU exposure limit, the AOEL. This is despite the requirements in the European legislation, (as EU law clearly specifies that the AOEL **must not be exceeded**, if it is, then authorizations **must be refused**, and if the AOEL exceedance is discovered *after* approval, **it must trigger prohibition/revocation**), and further, it is despite the recognition in the UK Government's very own previously stated case that **any exceedance** of the AOEL would trigger prohibition/revocation.

3.30 **The PSD's previous estimated exceedances of the AOEL clearly demonstrated that products have been in use in the UK which would have led to residents being exposed to levels greatly in excess of the AOEL, on a regular basis, year after year.**

3.31 Further still, evidence in the second Witness Statement showed that DEFRA Ministers were not even informed by the PSD of these very serious AOEL exceedances. For example, in PSD's advice to Ministers, dated 24th March 2004, following the 2003 DEFRA Consultation on pesticides, in referring to the estimates of 24 hour air inhalation exposure in the July 2003 PSD paper, the PSD stated, "*Exposure assessments for a large number of pesticides using the worst case Californian value as surrogate data are within the AOELs in all but a very few cases...The ACP reviewed these assessments before they confirmed that the risk assessments applied are robust.*" This failed to inform Ministers not only of the details regarding the exceedances of the AOEL for 24-hour inhalation exposure, but also the exceedances of the AOEL for children playing in the fallout area; in estimates of exposure at 1 metre, and even in some estimates relating to the current UK bystander exposure model of 5 minutes exposure at 8 metres, (any of which of course could be in relation to either adults, or babies, children or other vulnerable groups).⁵⁷

3.32 To reiterate, the Government has previously assessed exposure in a number of **realistic scenarios** in which residents are regularly exposed, including (i) exposure at less than eight metres; (ii) 24 hour inhalation exposure (although to vapour *only* excluding spray droplets and particles) for both adults and children; (iii) the dermal, hand-to-mouth and object-to-mouth exposure of small children playing on grass for two hours (without any account being taken of any exposure from breathing ie. droplets, particles and

⁵⁷ See paragraphs 27 to 30 and 33 to 36 of the second Witness Statement.

vapours, during those two hours). As detailed earlier, it will be appreciated that these are by no means all the exposure factors/sources relevant to a residents overall realistic exposure scenario in totality. (See para 56 of the 2nd Witness Statement and in summary above at para 3.9). The PSD's own findings found significant exceedances of the EU exposure limits, the AOEL (in some cases an *order of magnitude* higher), in relation to each of those exposure factors taken *alone*. Many more exceedances would be found if the exposures were totalled - as they plainly should be in order to allow for a realistic worst-case scenario, as required by the existing Annex VI to the EU legislation.⁵⁸ **Yet the Government has not, to date, taken any action to prevent the exposure and risk of harm for residents in these circumstances, and has violated its obligation under EU law to prohibit the use of pesticides where the AOEL is known to be exceeded.**

3.33 It is clear from what is set out in summary above that the current UK assessment model for *bystanders* is inadequate to assess even the exposure of such bystanders, and **fails entirely** to address the exposure of residents, as the overall exposure a resident receives cannot possibly be calculated if some of the exposure factors are ignored in the exposure calculations, which they currently are. See para 53 of the 2nd Witness Statement.

3.34 **The fact that, to date, there has never been any assessment in the UK of the risks to health for the long term exposure for those who live in the locality of pesticide sprayed fields, and/or who go to school in the locality of sprayed fields, means that under EU law pesticides should never have been approved for use in the first place for spraying in the locality of homes, schools, playgrounds, amongst other areas.**

3.35 Further, it is clear that if a proper and full assessment was undertaken to assess the exposure and risk for residents, that would have to include in the exposure calculations all the exposure factors and exposure routes, both higher and lower levels of exposure, and then added together (summed) then the result would be that pesticides would simply not be allowed to be approved at all for use in the locality of residents' homes, as well as schools, children's playgrounds, nurseries, hospitals, amongst other areas.

3.36 Therefore in summary, the factual evidence that I produced for the legal case, and which, as said earlier, is based on the UK Government's very own documents, findings and statements, (and thus anyone who analyses the same UK Government documents

⁵⁸ The European legislation regarding the authorisation of pesticides was formerly European Directive 91/414 and is now European Regulation 1107/2009.

and materials as referred to in the second Witness Statement would obviously see the same results) clearly confirms that the UK Government has fundamentally failed to:

- protect public health from pesticides, particularly rural residents;
- undertake **any** exposure and risk assessment for the long-term exposure for those who live, work or go to school in the locality of pesticide sprayed fields (**which means that under EU and UK equivalent legislation pesticides should never have been approved for use in the first place for spraying in the locality of residents' homes, schools, etc., in the absence of any actual risk assessment for those exposed in such scenarios**);
- act on its *own findings* of 82 exceedances (in **realistic** exposure scenarios for residents) of the limits set for exposure (the AOEL), in some cases the AOEL **was exceeded up to 20 to 30 times over**, which is an *order of magnitude higher*, when **any** exceedance, on the UK Government's *own previously stated case*, and most importantly under EU law, **would lead to immediate action of authorizations being refused (or trigger prohibition/revocation if the AOEL exceedance is discovered after approval)**. It is important to reiterate that these AOEL exceedances were based on each exposure factor *individually*, as the UK Government's advisors, the Advisory Committee on Pesticides (ACP), and the PSD (now CRD), **wrongly** calculated each factor in *isolation* and have failed to **ever** calculate (sum) exposure factors together in the exposure calculations, which is obviously essential to do in relation to the overall exposure scenario for residents. **Therefore on the results shown in PSD's (CRD's) own findings the AOEL would have been exceeded even further when calculating exposure factors together**;
- act on the evidence of the risk of harm to human health, and further than that, act on the evidence of **harm** that is occurring, including in the Government's *own monitoring system*. Yet EU legislation **requires** that pesticides can only be authorised for use if it has been **established** that there will be **no harmful effect** on human health. It also **requires** a proactive approach to reviewing authorisations *after* approval, including that authorisations shall be cancelled and pesticides prohibited where there is a risk of harm.

3.37 The factual evidence clearly shows that the UK authorities have approved pesticides for use (a) without first assessing the exposure and risks for **residents living in the locality of pesticide sprayed fields**, (and which the UK Government is required to do under the relevant European and UK equivalent legislation); and (b) without imposing **any** statutory conditions of use to protect residents from exposure, including exposures which give rise to risks to health, as well as exposures in excess of the AOEL. Such conditions of use would include the prohibition of the use of pesticides in the locality of residents' homes, as well as schools, children's playgrounds, hospitals etc. As said, the full detailed evidence regarding the failings of the current UK policy and approach are

contained in the 150 page second Witness Statement (available at: <http://www.pesticidescampaign.co.uk/documents/Downs%202.pdf>).

The legal case Georgina Downs v DEFRA

3.38 The aforementioned detailed factual evidence led to my landmark victory in the High Court in November 2008 that ruled that the UK Government's policy on pesticides was not in compliance with European legislation. My case was the first known legal case of its kind to reach the High Court to directly challenge the Government's pesticide policy and approach regarding crop-spraying in rural areas. The critical evidence contained in my second Witness Statement resulted in the High Court Judge, Mr. Justice Collins, concluding (at paragraph 39 of the High Court Judgment⁵⁹) that, "***The alleged inadequacies of the model and the approach to authorisation and conditions of use have been scientifically justified. The claimant has produced cogent arguments and evidence to indicate that the approach does not adequately protect residents and so is in breach of the [EU] Directive***"⁶⁰ and at paragraph 70 of the High Court Judgment that DEFRA "***must take steps to produce an adequate assessment of the risks to residents***"⁶¹

3.39 **The Judge also concluded at paras 39 to 43 of the High Court Judgment that I had produced "solid evidence"...that residents have suffered harm to their health**".⁶²

3.40 The Order of Mr. Justice Collins issued on 15th December 2008 ordered that DEFRA must reconsider and as necessary amend its policy in accordance with the terms of the judgment. It should be noted that although Mr. Justice Collins granted DEFRA leave to appeal, **he made it clear that he did not think that an appeal had a real prospect of success**.⁶³ **This would have been based on the assumption that the Court of Appeal would form its Judgment on the very same evidence and arguments that he did.**

3.41 However, my critical evidence and arguments were then subsequently ignored by the Court of Appeal in its judgment of July 2009, as it was all bizarrely **substituted** with the

⁵⁹[http://www.bailii.org/cgi-bin/markup.cgi?doc=/ew/cases/EWHC/Admin/2008/2666.html&query=title+\(+downs+\)&method=boolean%20%3Chttp://www.bailii.org/cgi-bin/markup.cgi?doc=/ew/cases/EWHC/Admin/2008/2666.html&query=title+\(+downs+\)&method=boolean%3E](http://www.bailii.org/cgi-bin/markup.cgi?doc=/ew/cases/EWHC/Admin/2008/2666.html&query=title+(+downs+)&method=boolean%20%3Chttp://www.bailii.org/cgi-bin/markup.cgi?doc=/ew/cases/EWHC/Admin/2008/2666.html&query=title+(+downs+)&method=boolean%3E)

⁶⁰ Ibid.

⁶¹ Ibid.

⁶² Ibid.

⁶³ In the High Court Order issued on 15th December 2008 Mr. Justice Collins stated that, "*While I recognise that the arguments raised by the defendant were and are by no means without substance, I do not think that in all the circumstances an appeal has a real prospect of success.*"

conclusions of a UK Government requested and funded report from four years earlier in 2005. Therefore the Court of Appeal's judgment was **not** based on the same cogent case, detailed factual evidence and arguments that had led to the High Court ruling in my favour. A striking example of this is demonstrated by the fact that **there is absolutely no reference whatsoever** in the Court of Appeal's Judgment of the very serious exceedances of the EU exposure limit, the AOEL, in **realistic** exposure scenarios for residents (and that were in clear breach of the legislative requirements of the then EU Directive 91/414) and importantly, that had been based on the UK Government's *very own findings*.

3.42 Although Judicial Review is about points of law, any decisions on the legal points must be based on the correct factual evidence presented. The High Court Judge, Mr. Justice Collins, had **correctly** based his Judgment on the critical detailed factual evidence I had set forth, in a number of Witness Statements, and that I had produced specifically to support the legal arguments and Grounds for challenge raised in my case. By substituting my evidence, the Court of Appeal judges fundamentally misrepresented my case. The Court of Appeal's only explanation for ignoring my evidence was that I had "*no formal scientific or medical qualifications.*" **Yet this is completely irrelevant, and it would effectively mean an end to any citizen taking a Judicial Review case in the UK if the courts will not take any notice of the evidence presented by that citizen because he/she is not a qualified scientist or doctor.** Also this is a highly prejudicial approach. Any legal judgment or decision is supposed to reflect the arguments and evidence set forth by the named parties involved in that case, irrespective of their professional background. Therefore the Court of Appeal judges were supposed to be basing their judgment as to whether to uphold or overturn the High Court Judgment based on the **exact same evidence** that led to that judgment in the first place, and which they did not.

3.43 Therefore the Court of Appeal overturned the High Court Judgment but **only** as a result of very wrongly (and possibly intentionally) **substituting** the cogently argued case I had presented with the findings of another party, thus resulting in the Court of Appeal judgment being formed on the wrong basis, and which did not in any way resemble the same case, arguments and evidence that Mr. Justice Collins based his Judgment on in the High Court, and which resoundingly found in my favour on all grounds, ruling that the UK Government was in breach of **both** EU law and **Article 8 of the European Convention of Human Rights**. Therefore the Court of Appeal Judgment was a complete

whitewash and there was not even a hint anywhere in the Judgment of any criticism of the Government at all. The Court of Appeal basically just passed the issue back to the Government to deal with and yet it was the Government I am challenging! I said at the time the Court of Appeal Judgment came out and will reiterate it again here, that the Government could not have wished for a better result than if it wrote the Judgment itself!

3.44 It is important to point out the fact that I actually had **5 legal decisions in my favour** between 2007 and 2009 in the legal case against the Government. These included: 1) the original permission granted by Mr. Justice Mitting in January 2007 for an application for Judicial Review; 2) the High Court ruling from Mr. Justice Collins in my favour in November 2008; 3) Mr. Justice Collins then refused in December 2008 the Government's first application for a "stay" of the High Court Judgment and Order; 4) the Court of Appeal Judge Lord Justice Laws then refused the Government's second application for a "stay" in February 2009; 5) the Court of Appeal Judge Lord Justice Sullivan then refused the Government's third application for a "stay" in March 2009 following an oral hearing and ordered that the Government should get on with its review as ordered by the High Court ruling in November 2008. In fact at that March 2009 oral hearing Lord Justice Sullivan criticized the Government for not having already initiated *any* action as a result of the High Court ruling. Yet just four months later it was the same Lord Justice Sullivan who wrote the lead Judgment for the Court of Appeal in July 2009 in which my evidence and arguments were ignored and bizarrely substituted with the findings of another party!

3.45 The only observational point I would make in relation to this (there are of course other points, but for the purposes of this submission I shall only highlight this one) is that Lord Justice Sullivan had announced at the oral hearing in March 2009 that he was most likely going to be a Judge involved in the main Court of Appeal hearing on the case (which subsequently took place in May 2009). Therefore the Government and other parties (such as the pesticides industry) would have known 2 months in advance who one of the Judges was most likely going to be. I of course do not know what went on behind the scenes, but I do know that it was clear to a number of those who attended the Court of Appeal hearing in May 2009 that the Judges came in with a pre-formed view and did not display any genuine interest in the case, evidence and arguments presented by my side.

3.46 It is also important to point out that the original High Court ruling in my favour was obviously a very significant and landmark ruling for the potentially millions of residents

throughout the country who, like myself, live in the locality of pesticide sprayed fields. The High Court judgment was extremely damaging to the Government, all the Government departments, officials and scientific advisors, responsible for pesticides, as it clearly confirmed what I had always said from the outset of presenting my arguments since 2001, that the Government has fundamentally failed to protect people in the countryside from pesticides and has also knowingly allowed residents to continue to suffer from adverse health effects without taking any action to prevent the exposure, risks and adverse impacts occurring. Therefore the High Court ruling had massive legal and political implications on the Government involving issues of responsibility, accountability and liability. Further confirmation of this could be seen in a number of legal articles on the internet, at the time, that reported on the significance of the High Court ruling. For example, one article published in *Environmental Liability*⁶⁴ stated, “*This case is a landmark one because it is the first case in which a judge has pointed to solid evidence of residents suffering ill health caused by exposure to pesticides in nearby fields, and it will no doubt be referred to as a precedent in future cases brought by residents.*” Thus the Government knew that, amongst other implications, the ruling by the High Court could have opened the floodgates to compensation claims against the UK Government from the many individuals and families who have suffered adverse health effects from exposure to pesticides sprayed in the locality of residents’ homes.

3.47 There was also very heavy lobbying on the Government from the industry to ensure that the Government appealed the High Court Judgment (which I am in no doubt the Government would have appealed anyway with or without the industry lobbying) and it was reported in the press at the time that the Government maintained that if the High Court Judgment stood then the “*Government’s pesticide policy would be fundamentally undermined*” and that the policy and approvals system “*might even grind to a halt.*”⁶⁵ This would undoubtedly have cost the Government many millions not only in relation to lost income from the pesticide industry to the regulators, the CRD⁶⁶ (who were the acting defendants in the legal case on behalf of DEFRA/Government), but also in the threat of any potential legal action against the Government by the industry if new product approvals were no longer able to be granted, as well as any potential legal action if

⁶⁴ *Environmental Liability* article in 2008 entitled “*Landmark judgment concerning pesticide crop-spraying*”.

⁶⁵ These quotes appeared in various articles in May 2009 including *Farmers Weekly*.

⁶⁶ The CRD receives approximately 60% of its funding from the agrochemical industry, which is broken down into the fees charged to companies for applications, and a charge on the UK turnover of pesticides companies, see further paras 5.4 to 5.10 below under the sub-heading “*Chemicals Regulation Directorate (CRD).*”

pesticides the Government had previously approved (and that were subject to long approvals, for example, many pesticides are approved for 10 years) were no longer able to be used. (NB. Such legal cases have been taken previously in the EU by companies challenging the EU Commission for no longer including their pesticides in Annex I).

3.48 In fact, the Government's concern over the financial impacts on the industry was clear to see in the two Witness Statements submitted on behalf of DEFRA by the then PSD (now CRD) Chief Executive, Kerr Wilson, to the Court of Appeal, regarding DEFRA's renewed application for a stay of the High Court Judgment and Order of Collins J. Both Mr. Wilson's Witness Statements cited various reasons for *preserving the status quo* that were **all** notably related to *alleged* financial and economic impacts on manufacturers, farmers and distributors, or the impact on agricultural productivity, if there were any changes to the current UK policy and approach for pesticides and the related approvals system. Therefore despite such a significant and landmark High Court ruling, that had found the Government failing in its legal obligation to protect human health, (particularly rural residents), the two Witness Statements submitted on behalf of DEFRA did not display **any** concern whatsoever in relation to the protection of public health, nor any genuine desire to rectify the policy and approach as had been ordered by the High Court, as the **only** concern displayed was with the protection of industry and business interests rather than the protection of the public.⁶⁷ For example, notable statements in the first Witness Statement of Kerr Wilson on behalf of DEFRA dated 9th January 2009 include,⁶⁸ amongst others, at paragraph 6: "*The annual market value of pesticide sales is approximately £490m* ⁶⁹ *which delivers benefits to farmers, significantly improving agricultural productivity*"; at para 8: "*If, as a result of the Declaration, new approvals could not be granted, there would be important ramifications,*" (the paragraph then goes on to list at points a to e, a number of concerns relating to the impacts on pesticide approvals (including on evaluations of new products; re-registration of existing products etc.) and the *alleged* financial and economic disadvantages for UK industry and farmers as a result, eg. para 8e that states that, "...*due to the seasonal nature of the use of plant protection products, the coming months are critically important for approval holders and*

⁶⁷ This was pointed out in my fourth Witness Statement involved in the legal case *Georgina Downs v DEFRA* which is available at:- <http://www.pesticidescampaign.co.uk/documents/Downs%204.pdf>

⁶⁸ I am not sure whether I am allowed to publish any of DEFRA's Witness Statements from the legal case, but the quotes of Kerr Wilson's cited in paragraphs 3.48 and 3.49 above can all, in any event, be seen cited in my fourth Witness Statement involved in the legal case *Georgina Downs v DEFRA* available at:- <http://www.pesticidescampaign.co.uk/documents/Downs%204.pdf>

⁶⁹ This figure is now higher, see further paragraph 5.3 below.

farmers, as not gaining approval before the growing season can result in a sales being lost for a whole year”); at para 10: “Without a stay PSD will have no option but to suspend activity on new approval applications, which will have commensurate financial and significant agricultural impacts on approval holders, distributors and farmers.”

3.49 In paragraph 10 Kerr Wilson also stated, “DEFRA and PSD have an **obligation** to consider the need for certainty amongst its stakeholders, **particularly applicants for approval** and the wider agricultural community, and wishes to continue to discharge its duties to them pending the outcome of the appeal.”⁷⁰ The PSD’s concern regarding its “obligation” and “duties” to the industry yet again confirmed that its primary concern was for the protection of industry interests, particularly applicants for approval (ie. the manufacturers’ of pesticides, such as the agro chemical companies). Notably, there was no mention anywhere in Mr. Wilson’s Witness Statement of the PSD’s **obligations** and **duties** to protect the health of those exposed to pesticides, particularly to that of residents.

3.50 Therefore for all the reasons set out in the above paras it is clear why the Government would have needed to get the landmark High Court ruling overturned no matter what.

The Government’s current policy review

3.51 Following Lord Justice Sullivan’s refusal at the oral hearing in March 2009 of the Government’s third application for a “stay” and his order that the Government should get on with its review as ordered by the High Court ruling in Nov. 2008, DEFRA Ministers requested the regulators initiate a review of the Government’s policy and approach regarding human health, particularly re. residents and bystanders.⁷¹ The Ministers request for a policy review was therefore taken **only after**, and as a direct result of, that March 2009 Court of Appeal ruling, and which the Government **publicly committed** to continuing with irrespective of the subsequent Court of Appeal judgment in July 2009.⁷²

3.52 As part of the Government’s policy review there are 2 Working Group’s co-ordinated by the Advisory Committee on Pesticides (ACP) that are reviewing the exposure, risks,

⁷⁰ See footnote 68.

⁷¹ Letter from Dave Bench (CRD) to the COT Chairman, Professor David Coggon, dated 11th March 2009, and which can be seen on pages 7 and 8 of the document at:- <http://cot.food.gov.uk/pdfs/tox200909.pdf>

⁷² Letter from Dave Bench (CRD) to the COT Chairman, Professor David Coggon, dated 1st September 2009, and which can be seen in the document at:- <http://cot.food.gov.uk/pdfs/tox200928addendum.pdf>

and adverse health effects to residents and other members of the public exposed, (which is as a direct result of the evidence and arguments I presented in my legal challenge).

3.53 One of the Working Groups entitled “*Pesticides Adverse Health Effect Surveillance Scheme Working Group (PAHES)*” is in the process of finalising its report. Although I have not seen the final report, the *draft* PAHES report concluded that there are “*obvious problems*” with the current surveillance and monitoring systems in the UK and stressed the fact that systems are required that “*deal with both chronic and acute effects of pesticides*” (as, as detailed earlier, there is currently no specific monitoring or collection of data in the Government’s existing monitoring system in relation to the chronic effects, illnesses and diseases reported by residents in rural areas, which is something that I have continued to point out when detailing the failings of the UK monitoring system, including in great detail in the second Witness Statement).

3.54 The other Working Group, which is a joint Working Group of the ACP and the Committee on Toxicity (COT), entitled “*Bystander Risk Assessment Working Group (BRAWG)*” is also in the process of finalising its report. Although BRAWG has *finally* acknowledged that the current approach for assessing the exposures and risks to public health (the so-called *bystander* risk assessment) is inadequate, and has thus *finally* agreed with a number of the critical arguments that I have been highlighting over the last 11 years, the BRAWG report does not address *the extent* of the *very serious flaws* in the Government’s existing approach to exposure and risk assessment (as set out in full detail in my second Witness Statement and which I briefly summarised in earlier paras above).

3.55 The BRAWG report does now recommend that there should be separate exposure and risk assessments for residents and bystanders (which again is what I have been arguing for the last 11 years since the outset of the campaign). However, the approach proposed regarding residents still **excludes** many of the exposure factors and exposure routes summarized in para 3.9 above, and in full detail at para 56 of the second Witness Statement), and which are **all** relevant to include for the specific exposure scenario of residents.

3.56 The main changes in approach that are now recommended by BRAWG are as follows

- **Both acute (short-term) and longer-term exposure assessments are required for residents,** (however, the way this has been proposed by BRAWG is still inadequate);

- **That a 2 metre distance between the sprayer and a resident or bystander should be assumed in all the acute and chronic risk assessments**, as BRAWG considered that the current distance assumed in the risk assessment of 8 metres between the spray boom and an individual is inadequate, (however, although this is an improvement from the current 8 metre approach, it is again still inadequate, as it should be closer);
- **Estimates of exposure through each pathway and route should be aggregated (combined)**, (again, the way this has been proposed by BRAWG is still inadequate, as firstly, as said above, the approach regarding residents still excludes many of the exposure factors and routes that need to be included; and secondly, for assessment of total potential systemic exposure, the group recommends that estimates of exposure from different sources and by different routes should *not* simply be summed as a matter of routine, and yet they would need to be, otherwise a complete and accurate assessment of the overall realistic exposure and risk for residents cannot be reached);
- **That separate risk assessments should be considered for children and adults exposed as residents and bystanders**; (although again, the way this has been proposed by BRAWG is still inadequate, and further, there will still be no consideration whatsoever to the exposure of babies and young children with a bodyweight lower than 15kg, and some parts of the assessments still based on 60kg).

3.57 An additional important recognition in the BRAWG report and which again would not have even been considered if it was not for the arguments and evidence presented in the campaign I run and related legal case, is that BRAWG *“notes a concern that some individuals may become sensitised to pesticides (or indeed other substances), possibly following apparently low exposures relative to the sensitising dose in animals, and that risk factors for sensitisation are not well understood, either for pesticides or for other substances. The group considers that it is important to identify the extent to which current or new formulations may change the ability of chemicals to act as sensitisers.”*⁷³

3.58 The BRAWG report also notes concern that sensitisation could have longer term consequences as the report states, *“An individual can become sensitised as a result of exposure to a substance that can induce a specific immunological reaction (“induction”), such that the individual then reacts to much lower concentrations on further exposure (“elicitation”). On initial contact with a skin sensitiser, the exposed person may experience no obvious symptoms, yet further contact with the same substance may result in clinical manifestations (either skin or respiratory).”*⁷⁴

⁷³ Taken from the latest published version of the *draft* BRAWG report which is available at:- <http://cot.food.gov.uk/pdfs/tox201232.pdf>

⁷⁴ Ibid.

3.59 As a result BRAWG recommends that research be conducted on the extent to which current or new formulations may change the ability of chemicals to act as sensitisers. The reason why this is an important admittance is because of the continued assertions of Government advisors, such as the ACP, over many years that chemical sensitivity does not exist, and that pesticides will not result in pesticide (or other chemical) sensitivity in humans. Yet the UK Pesticides Campaign has continued to receive reports from people who not only have suffered acute and/or chronic health impacts as a result of exposure to pesticides, but a number of reports where people having developed chemical sensitivity.

3.60 The BRAWG report is due to be finalised and passed to Ministers shortly as the recommendations of both the Advisory Committee on Pesticides (ACP) and Committee on Toxicity (COT) on a revised policy approach to assessing the risk from pesticides to residents and bystanders. It is therefore not yet known at the time of writing this whether DEFRA Ministers will follow the advice recommended in the BRAWG report. However, the fact that BRAWG will now be advising Ministers for a few *limited* changes to the exposure and risk assessment approach (as a result of the evidence and arguments I have continued to present in relation to the residents and bystanders issue), and which is thus a sign of admittance from the Government's advisors of some of the inadequacies of the current approach, as said earlier, BRAWG still does not address *the extent* of the *very serious flaws* in the Government's existing approach to exposure and risk assessment. Therefore BRAWG has not in any way recommended all the changes that are necessary, and most importantly, the ACP *still* has **not** recommended the introduction of any measures to be introduced into the statutory conditions of use for the necessary protection of the health of residents and others exposed, such as the prohibition of the use of pesticides in the locality of residents' homes, as well as schools, children's playgrounds, hospitals etc.

4. Related questions regarding the Government's approach to risk assessment for bees

4.1 As can be seen from what is set out above, the failings in the Government's approach to exposure and risk assessment regarding human health is also comparable to the serious concerns that have been raised regarding the Government's approach to exposure and risk assessment in relation to other species, such as bees. It is absolutely clear that if there are fundamental flaws in the exposure assessments for pesticides, whether it be for humans, bees or any other species, then there will inevitably be flaws in the risk assessments from

the outset. Although I have not examined the exposure and risk assessments currently carried out by the UK Government for bees in the same way as I have for human health, it is highly likely that there will be similar flaws in the way the Government carries out the assessments regarding the risks to bees. For example, is the Government including in the exposure assessment for bees all the different exposure factors that bees will be subjected to, such as exposure to pesticides via the air (including droplets, particles and vapours), exposure to pesticides in pollen, exposure to pesticide treated seeds? Does it consider the overall total exposure that bees will be getting both in the short term and the long term? Also the critical point about the mixtures of different pesticides that bees could come into direct contact with and the fact that if a bee is regularly situated in amongst pesticide sprayed fields then it could be coming into direct contact with mixtures of pesticides on a daily basis, including not only in any particular crop field itself, but also in flight when travelling from one field to the next as a result of exposure to mixtures of pesticides in air.

4.2 In relation to the risk of harm to bees from pesticide mixtures, a US study in 2010⁷⁵ highlighted the potential synergistic effects on bee health from mixtures and combinations of different pesticides as the researchers found 121 **different** pesticides and metabolites within 887 wax, pollen, bee and associated hive samples. Therefore aside from the **individual products** that carry warnings of a risk to bees on the product label and safety data sheet information (such as *'harmful'*, *'dangerous'*, *'extremely dangerous'* or *'high risk'* to bees), **there will also be the risk of adverse impacts on bee health from the cumulative effects of multiple exposures to mixtures of different pesticides.**

4.3 This point was further supported by the recent study in the journal *"Nature"* which was reported in the media⁷⁶ as being the first to look at the effect of a combination of chemicals and at the sort of levels typically seen in the countryside. It was reported that the *"worst effects were seen in the colonies exposed to the combination of chemicals."*⁷⁷

4.4 Researcher Nigel Raine was quoted as pointing out that *"pesticide usage was currently approved on tests which examine single pesticides over a period of days, rather than*

⁷⁵ *"High levels of miticides and agrochemicals in North American apiaries: implications for honey bee health,"* Abstract can be seen at:- <http://www.ncbi.nlm.nih.gov/pubmed/20333298>

⁷⁶ <http://www.dailymail.co.uk/sciencetech/article-2221223/Is-cocktail-pesticides-wiping-bees-Insects-left-confused-chemicals.html?ito=feeds-newsxml>

⁷⁷ Ibid.

weeks” and that “*our evidence shows that the risk of exposure to multiple pesticides needs to be considered, as this can seriously affect colony success.*”⁷⁸

4.5 In the same media article Professor David Goulson of the University of Stirling, was quoted as saying that, “*This new study also highlights the threat posed by exposing beneficial insects to mixtures of toxic chemicals, something which all bees face in agricultural environments, but the effects of which are rather poorly understood.*”⁷⁹

4.6 In view of such studies, and considering the **reality of crop spraying in the countryside** is not merely related to exposure to one individual pesticide or to one single group of pesticides, as agricultural pesticides are commonly sprayed in mixtures (cocktails), then it would not be adequate to assess the impacts of pesticides on bees *solely* in relation to one group of pesticides such as the neonicotinoids. As said earlier, quite often one pesticide application will consist of 4 or 5 different products mixed together. Each product formulation in itself can contain a number of different active ingredients, as well as other chemicals, such as solvents, surfactants and other co-formulants (some of which could have adverse effects in their own right, whether to humans or bees, even before considering any potential synergistic effects in a mixture(s)). Therefore bees and other species, just like residents and other humans, could be exposed to innumerable *mixtures* of pesticides, repeatedly, throughout every year, and for years.

4.7 In relation to this it is important to stress the fact that farmers cannot control pesticides once they are airborne (either at the time of application or subsequently) and so the exposure that residents and other species receive is as a result of the authorised/permitted use of these substances under the Government’s existing policy. (The pesticides used in the locality of resident’s homes will contaminate both outdoor and indoor environment).

4.8 It is therefore important that the Environmental Audit Committee enquiry is not limited to assessing the impacts of pesticides on bees and other insects *solely* in relation to one group of pesticides such as the neonicotinoids. Clearly that would miss the wider issue of pesticide spraying in the countryside *in general* and the impacts on bees, as well as importantly on humans, and the very serious failure of the current UK policy and approvals system to adequately assess the risks of such exposure (ie. to **mixtures** of

⁷⁸ Ibid.

⁷⁹ Ibid.

pesticides regularly sprayed), as well as the Government's failure to act on known risks and adverse impacts. The **reality** of pesticide spraying in the countryside is not reflected in any of the risk assessments the Government does, whether it be for humans or bees!

5. Reasons behind the Government's complacency and inaction on pesticides

5.1 To reiterate, to date, the Government, its advisors, and regulators, have fundamentally failed to protect people in the countryside from pesticides, and have also knowingly allowed residents to continue to suffer from adverse health effects without taking any action to prevent the exposure, risks and adverse health impacts occurring. The evidence really is quite clear that, to date, the Government has knowingly failed to act, has continued to shift the goalposts, cherry picked the science to suit the desired outcome and has misled the public, especially rural residents, over the safety of agricultural pesticides sprayed on crop fields throughout the country. The Government's continued line that there is no evidence of harm from pesticides, as well as no risk of harm, is just untenable and inexcusable. The evidence is there and has been there for a considerable time, the Government is just determined not to act on it. The Government's response to this issue has been, to date, of the utmost complacency, is completely irresponsible and is definitely not "*evidence-based policy-making*". As I have always maintained from the outset of my campaign this is definitely one of biggest public health scandals of our time.

5.2 The principal aim of pesticide policy is supposed to be the protection of public health and environment. This is meant to be the number one priority and take absolute precedence over any financial, economic or other considerations. However, the Government has been absolutely determined at all costs to maintain the status quo and to appease the interests of the industry (at least this has been the case re. human health), as the Government has continued to put chemical/industry interests over and above protecting public health. To highlight just a few further reasons (to those set out in paras 3.46 to 3.50) as to why successive Governments' have continued to allow industry to set the agenda on pesticides

5.3 Considering that sales of pesticides in the UK *alone* for 2011/12 was £627 million⁸⁰ and reports have put the value of the world pesticides industry at around a staggering \$52 billion⁸¹ then this is obviously very big business indeed. However, there are also clear

⁸⁰ Taken from an email from the CRD finance department on 25th September 2012 confirming this figure.

⁸¹ Source:- <http://www.thedailygreen.com/environmental-news/latest/pesticides-47120102>

conflicts of interests at play in relation to those advising DEFRA Ministers over the pesticides policy agenda, especially in relation to the Chemicals Regulation Directorate.

i) The Chemicals Regulation Directorate (CRD)

5.4 The Chemicals Regulation Directorate (CRD), the delivery body for DEFRA's responsibility on pesticides and the key officials advising Ministers on the safety of pesticides, is also the evaluator/assessor in the UK for the authorization of pesticide products. The CRD receives approximately 60% of its funding from the agrochemical industry, which is broken down into the fees charged to companies for applications, and a charge on the UK turnover of pesticides companies.⁸² For a number of years now this has resulted in the CRD receiving around £7 million or more per year from the agro-chemical industry.⁸³ In the CRD's annual reports and accounts in relation to the CRD's business operations, the CRD's reliance on full cost recovery from the industry for CRD's "services",⁸⁴ including evaluating applications for product approvals is repeatedly stated. **This has always been a completely inappropriate structure, and it means that the CRD has a financial interest in any policy decisions under consideration.**

5.5 Further, by CRD carrying out all the Government Consultations' on pesticides, and also being the main Government agency that assesses the adequacy of the UK's policy and approach, is really effectively just asking the regulator to be judge and jury of itself, which further compounds the inappropriateness of the UK structure.

5.6 As the UK Pesticides Campaign has continued to argue, even though CRD's main priority is supposed to be to protect public health and the environment from pesticides this obviously conflicts with the fact that the CRD's main customers/clients are its approval holders, (predominantly made up of the agro-chemical companies), and the fact that the CRD is required to meet full cost

⁸² Source para 3.1 of the 2011 DEFRA document at:- <http://www.defra.gov.uk/consult/files/110210-pesticides2011-condoc.pdf>

⁸³ For example, see para 3.1 of the 2011 DEFRA document at:- <http://www.defra.gov.uk/consult/files/110210-pesticides2011-condoc-ia.pdf> in relation to the figure for 2009/2010 which was **£7.4 million**, and in relation to examples for earlier years see page 16 of the CRD's "Annual Report and Accounts 2008/09" for the figures for 2007/08 and 2008/09 available at: http://www.pesticides.gov.uk/Resources/CRD/Migrated-Resources/Documents/A/Annual_report_and_accounts_final.pdf

⁸⁴ Also see for example, DEFRA's response to the consultation last year on the draft legislative text of two UK Regulations to support the European Regulation regarding the authorisation of pesticides (at:- <http://www.defra.gov.uk/consult/files/plant-protection-products-consult-response.pdf>) that states, "The Department does not consider it reasonable for the Exchequer to fund the entire operation of this regulatory regime. It is appropriate for the industry to continue to meet the costs of the services they receive."

recovery for its operations, including from product applications and approvals. The CRD's very structure seems to make health and environmental considerations subordinate to pest control. (NB. As detailed earlier at paras 3.48 and 3.49 this conflict of interests was clearly apparent during the legal case). The CRD's (formerly PSD's) primary concern and focus on the protection of industry interests as opposed to people's health really has been very clear through all the 11 years that I have been campaigning.

5.7 Therefore, as detailed, the UK's pesticide policy and control regime is based on a wholly inappropriate structure and goes some way to explaining why the pesticide industry has for many years (decades even) had such control over successive Governments' policy decisions on pesticides, particularly in relation to the use of pesticides in agriculture. If the pesticide industry is effectively the ones who are "*paying*" for what controls are or are not in place for the protection of public health and the environment then the industry will of course only be willing to pay the minimum amount possible **for the least controls possible**, and will preferably want to just continue relying on voluntary measures only. Successive Governments' have continued to reflect the position of the pesticides industry **in all policy decisions taken to date on pesticides**, (at least since the UK Pesticides Campaign has been in existence since early 2001) and it is quite clear that part of the reason for this can be explained by the fact that **the industry are the ones who provide the majority of the funds to finance the control regime**. As the UK Pesticides Campaign has pointed out previously, this would appear to be a case of "*whoever pays the piper calls the tune.*"

5.8 Therefore as long as the Government's control regime is being funded by (and thus relies upon) the pesticides industry with the majority percentage then there will inherently continue to be reluctance on the part of the industry and the Government to introduce mandatory measures/statutory controls for the protection of public health and safety. The current approach clearly creates an inherent conflict of interests with, in particular, the CRD, having a financial interest in any policy decisions under consideration, and would appear to be one of the reasons why there is this current perverse system of placing the interests of business and industry over and above that of the protection of public health.

5.9 It is clear from the text of both the former EU Directive 91/414 and the new EU legislation consisting of the PPP Regulation, and Sustainable Use Directive (SUD), **that there should be no balancing of interests when it comes to public health protection.**

5.10 **Therefore the primary concern of Government and CRD should definitely not be on ensuring the *minimum cost* to the industry and business, it should be on ensuring the maximum protection for human and animal health and the environment.**

ii) The Advisory Committee on Pesticides (ACP)

5.11 The Government, DEFRA, PSD (now CRD), have always stated that the ACP is “*independent*” of Government. However, the UK Pesticides Campaign would argue that whilst this may have been the aim in theory, it is not necessarily borne out in practice. For example, the ACP Secretariat is made up of PSD/CRD employees. Also, the ACP bases its decisions on summary information that is provided by PSD/CRD employees and to my knowledge the ACP does not go through the full dossiers of information that are provided by applicants. Thus, as said, the ACP’s decisions are predominantly based on the summary information and advice and recommendations that are provided by the PSD/CRD. The ACP will then often just concur with the PSD’s/CRD’s position and does not very often make contrary conclusions to those of the PSD/CRD. Further, the ACP’s “*Advice to Ministers*” has not always been passed on by the regulators (then PSD now CRD) to Ministers⁸⁵ which again undermines the ACP’s so-called “*independent*” status if the regulators (PSD/CRD) have been able to seemingly deliberately prevent the ACP’s “*Advice to Ministers*” from being passed on to the very Ministers it is intended for.

5.12 In relation to the ACP it is important to note the following.

5.13 Paragraph 1.2 of the 2012 DEFRA consultation letter regarding the consultation on the options for the future of the Advisory Committee on Pesticides⁸⁶ stated,

“The ACP was established under Section 16(7) of the Food and Environment Protection Act 1985 (FEPA). The Advisory Committee on Pesticides was established by the Control of Pesticides (Advisory Committee on Pesticides) Order 1985 and the Advisory Committee on Pesticides for Northern Ireland by the Control of Pesticides (Advisory Committee) Order (Northern Ireland) 1987. The terms of reference are to provide Ministers with advice, either when requested to do so or otherwise, on any matters relating to the control of pests in furthering the general purposes of Part III of the Act.

The general purposes of Part III of FEPA are that the provisions of that part of the Act shall have effect:

**With a view to the continuous development of means*

⁸⁵ It came to light in 2005 that the then PSD had not passed on to DEFRA Ministers the ACP’s formal written advice regarding the residents and bystander issue, (advice nos. 297 and 301) labelled as “*Advice to Ministers.*”

⁸⁶ Available at:- <http://www.defra.gov.uk/consult/files/pesticides-condoc-120308.pdf>

**to protect the health of human beings, creatures and plants;
*to safeguard the environment; and
to secure safe, efficient and humane methods of controlling pests; and

**With a view to making information about pesticides available to the public.”*

5.14 The 2012 DEFRA consultation letter regarding the consultation on the options for the future of the ACP⁸⁷ went on to state,

*“Under Section 16(9), Ministers **are required to consult the Advisory Committee:***

**as to regulations which they contemplate making;
***as to approvals of pesticides which they contemplate giving, revoking or suspending; and**
***as to conditions to which they contemplate making approvals subject.**”*

5.15 In a conversation with a representative of DEFRA (David Williams) in May 2012, I asked whether **all** products that are considered for approval in the UK go before the (so-called “*independent*”) ACP. He said that he did not think they did, as it would be too much work for the ACP, and therefore that some are just considered by the CRD. In a subsequent email on 14th May 2012 to David Williams and copied to Dave Bench of CRD I requested further information on this, as considering Section 16(9) of FEPA clearly states that “*Ministers **are required to consult the Advisory Committee** *as to approvals of pesticides which they contemplate giving, revoking or suspending; and *as to conditions to which they contemplate making approvals subject” then to not actually do so when it is **required** would appear to not be in compliance with FEPA Section 16(9)*

5.16 The specific questions I asked in my email of 14th May were: 1) How many product applications have not been before the ACP? 2) Whether this has always been the situation since the outset of Section 16(9) being in place? 3) Or whether it started off as every product applications but then subsequently changed thereafter to not being all product applications? 4) Also what else does not go before the ACP but is dealt with by CRD? And I requested examples as to any other instances in which the ACP is not consulted “*as to approvals of pesticides which Ministers contemplate giving, revoking or suspending*” and “*as to conditions to which Ministers contemplate making approvals subject.*”

5.17 Despite repeated reminder emails over the subsequent weeks and months and assurances from DEFRA officials that a “*substantive response*” was coming, I did not

⁸⁷ Ibid.

actually receive any response to these questions until 19th October 2012 in an email from David Williams of DEFRA that stated that, “*CRD currently receive on average 1,300 plant protection product applications per year. This figure covers the range of applications from new active substances to changes of approval to reflect a change of company name. **Only a small minority are directly put before the ACP.** We do not hold the statistical information that you requested.*”

5.18 I am currently awaiting a response to some further questions I have sent DEFRA and CRD in relation to this to establish exactly how many new product applications, as well as any new active substances, may not have been before the ACP **at all** in relation to each year since FEPA (and most importantly Section 16(9)) has been in existence since 1985.

5.19 This is important information to obtain considering the specific requirements in FEPA Section 16(9), and in order to establish any non-compliance, and breach, of Section 16(9).

5.20 As said earlier at para 3.60, the ACP *still* has **not** recommended to Ministers any measures to be introduced into the statutory conditions of use for the necessary protection of the health of residents and others exposed from agricultural spraying, such as advising Ministers to prohibit of the use of pesticides in the locality of residents’ homes, as well as schools, children’s playgrounds, hospitals etc. This is despite the evidence that the ACP has received over the last 11 years, since early 2001, regarding the fundamental failings of the existing policy and approvals system in protecting residents’ health. There are many examples of the ACP’s inaction when faced with evidence of actual harm, as well as the risk of harm, to human health, as a result of pesticide exposure (see for example the many examples included in the second Witness Statement produced for the legal case).

5.21 Therefore, the ACP has, to date, failed to act over the adverse health impacts of pesticides in exactly the same way as DEFRA and CRD (formerly PSD). Further, when PSD found in 2003, on its own estimates, 82 examples of exceedances of the AOEL, in some cases an *order of magnitude higher*, the ACP **did not** advise Ministers for action.

5.22 Furthermore, it is important to point out that a number of members of the ACP have links to the pesticides industry. For example, some members may undertake consultancy work, have shares in and/or receive funding for research support. This has always been an inappropriate structure, as so-called “*independent*” Government advisors cannot possibly be classified as independent if they have financial or other links with the very industries

they are overseeing in relation to the hazards to human health. (NB. The declarations of interest of ACP members in the latest ACP report published (2011) is available at:- http://www.pesticides.gov.uk/Resources/CRD/ACP/Annual_Report_2011.pdf, see Annex 3 entitled “*Independent members declaration of interest in the pesticides industry 2011*”).

iii) The Pesticides Forum

5.23 There are a number of very important points to make regarding the Pesticides Forum.

5.24 The *draft* UK pesticides National Action Plan (NAP), that was recently subject to a Government Consultation, in Annex 2⁸⁸ entitled “*The Pesticides Forum – brief description and role*” it states, “*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.***”⁸⁹ Thus one of its remits is to advise Ministers on pesticides policy and use.

5.25 Paras 6.1 and 6.2 of the *draft* UK National Action Plan (NAP) pointed out that the Government/DEFRA/CRD intends to rely on the Pesticides Forum for the monitoring and review of the UK National Action Plan.⁹⁰ This can also be seen in other paras of the *draft* UK NAP such as at para 7.1 which refers to the Pesticides Forum's “*suite of indicators to monitor how pesticides are being used **and the impact they are having**”⁹¹ para 8.3, and para 8.4 that states, “*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.*”⁹² as well as in various other places.*

5.26 Firstly, it is important to stress the fact that the Pesticides Forum does **not** involve **all** stakeholders, as there is **no** representative on the Pesticides Forum on behalf of those

⁸⁸ The *draft* UK National Action Plan (NAP) consultation document is available at:- <http://www.defra.gov.uk/consult/files/consult-nap-pesticides-document-20120730.pdf>

⁸⁹ Para 13 of the Impact Assessment for the “*The Plant Protection Products (Sustainable Use) Regulations 2012*” also points out the Pesticides Forum is a body “**which advises Ministers generally on the use of PPPs.**”

⁹⁰ The *draft* UK National Action Plan (NAP) consultation document is available at:- <http://www.defra.gov.uk/consult/files/consult-nap-pesticides-document-20120730.pdf>

⁹¹ Ibid.

⁹² Ibid.

directly affected and adversely impacted from exposure to pesticides and this is something that has always been of great concern to the UK Pesticides Campaign.

5.27 Secondly, as can be seen from the letter I sent to the Chairman of the Pesticides Forum on 18th June 2012 (and which I have previously provided to the clerks of the Environmental Audit Committee and which is available at: <http://www.pesticidescampaign.co.uk/documents/Letter%20to%20the%20Pesticides%20Forum%2018th%20June%202012.pdf>) there are some serious issues with the Pesticides Forum annual reports, including the inclusion of a number of grossly inaccurate statements within the annual reports. These include such statements as that in the Executive Summary of the current 2011 report that states, "*The work of the UK Pesticides Forum in 2011 confirms that the use of pesticides is **not** adversely impacting on the health of UK citizens or the environment.*" **This is simply not factually correct, and in fact even just going by the UK Government's own monitoring system it shows cases of acute effects recorded in members of the public each year.** As said this inaccurate statement is just one of a number of inaccurate statements contained within the Pesticides Forum annual reports each year.

5.28 Having recently investigated this issue it was confirmed by the Pesticides Forum Secretariat (which is provided by the CRD) that **no** Pesticides Forum member had dissented, or objected, to such statements prior to the publication of the 2011 annual report, and this included organisations that are supposed to be on the Pesticides Forum as organisations concerned about the adverse impacts of pesticides on human health and the environment (eg. the Pesticide Action Network UK (PAN UK), the Wildlife and Countryside Link and Sustain). The various members of the Pesticides Forum had plenty of time to raise any concerns seeing as the 2011 *draft* report was circulated to the Pesticides Forum members in February and yet was not actually published until May.

5.29 Further, the current 2011 report is not an isolated case, as this non-dissenting, and thus agreeing with and signing up to, the contents and inaccurate statements in the Pesticides Forum annual reports has actually been going on **for years**, as according to conversations that I have had with the Pesticides Forum Secretariat there was **no** dissenting to any of the same sort of statements from any of the Pesticides Forum members in relation to the 2008, 2009 and 2010 reports either. This means that UK Ministers are highly likely to have been informed by the regulators, the CRD, when

highlighting the various Forum reports to those Ministers, that the reports had been agreed by **all members** of the Forum, including the various NGOs and purported and supposed environmental and consumer organisations that are members of the Forum.

5.30 It is of course absolutely imperative that any organisation that is involved in a Forum that provides advice to Ministers, (which is one of the main objectives of the Pesticides Forum as stated in each one of the Pesticides Forum annual reports), must know what it is signing up to and agreeing with, especially when that organisation purports to be representing a *link* of other organisations as well, as it could then look as if all those other organisations are also agreeing with the content of the Pesticides Forum reports.

5.31 It is, as said above, most certainly **not** correct for the Pesticides Forum reports to have maintained, since at least 2008, that “*the use of pesticides is **not** adversely impacting on the health of UK citizens or the environment*” and if I had not spotted this then who knows how many more years all the members of the Forum would have carried on non-dissenting, and thus agreeing with and signing up to, the same and/or similar grossly inaccurate statements within the contents of the subsequent Pesticides Forum reports.

5.32 It is also important to point out that the Pesticides Forum has always been dominated by industry based organisations. Therefore there is simply no proper, robust, **independent** consideration and evaluation in the UK of the various indicators and schemes that are in place regarding the health and environmental impacts of pesticides.

5.33 **Therefore, as said, there is serious concern regarding the Pesticides Forum as DEFRA Ministers have been receiving advice from the Pesticides Forum for many years, and yet year after year the Forum has wrongly asserted that, “the use of pesticides is **not** adversely impacting on the health of UK citizens or the environment.” Considering the grossly inaccurate statements that the Pesticides Forum has continued to make year after year, effectively denying the adverse health and environmental impacts of pesticide use, then it is of *further* serious concern that it is intended that the Pesticides Forum be responsible for the monitoring and review of the UK’s National Action Plan (NAP) on pesticides after it has been adopted.**

6. Conclusion

6.1 As pointed out earlier, the evidence I produced for the legal case clearly showed that the Government, DEFRA, PSD (now CRD), and ACP, have all continued to base decisions in relation to pesticides on the protection of industry interests as opposed to what is absolutely required as the number one priority of pesticide policy and regulation – **to protect public health**. Yet in the UK, DEFRA has previously stated⁹³ that there is not supposed to be a trade off when it comes to the risks to health from pesticides with the benefits and that if there is scientific evidence that use of a pesticide *may* harm human health that is to be considered unacceptable, and that approval for use would be refused, whatever the benefits. However, paragraphs 195 to 206 of my second Witness Statement from the legal case detailed the evidence to show that the Government has continued to adopt the improper approach of *balancing* harm to human health against the (supposed) benefits of pesticide use, in which the Government is accepting a degree of damage to human health on the basis that *it believes* it is outweighed by other benefits (eg cost/economic benefits for farmers and the industry), rather than adopting the absolute protective approach that is required under EU law for the protection of human health.

6.2 As said earlier, it is absolutely clear from the text of both the former EU Directive 91/414, and the new EU legislation consisting of the PPP Regulation, and the SUD, **that there should be no balancing of interests when it comes to public health protection.**

6.3 It is important that the Environmental Audit Committee enquiry also looks into what is going on behind the scenes and the inappropriateness of the UK structure and regime for assessing the safety of pesticides, as it does not matter how much unarguable and indisputable evidence exists regarding the adverse impacts of pesticides, successive Governments' have been absolutely determined at all costs to maintain the status quo and to appease the interests of the industry, at least this has been the case re. human health.

7. Recommendations for Action

Options for the protection of residents in the EU legislation (PPP Regulation and SUD)

7.1 As a direct result of the work of the campaign I run, the UK Pesticides Campaign, the new EU legislation consisting of the PPP Regulation, and the Sustainable Use Directive,

⁹³ Joint Memorandum “*Progress on Pesticides*” submitted by DEFRA and HM Treasury to enquiry by the Environment, Food and Rural Affairs Committee (20.10.2004).

contains a number of critical measures for the protection of residents, including a new legal obligation for farmers and other pesticide users to provide information to residents and others on the pesticides they use (Article 67 of the PPP Regulation);⁹⁴ and the option for a new legal requirement in the statutory conditions of use for residents to be provided with prior notification before spraying (Article 31 para 4(b) of the PPP Regulation).⁹⁵

7.2 However, most importantly, Article 12 of the Sustainable Use Directive (SUD) includes the option for the prohibition of pesticide use in areas used by the general public, or by “*vulnerable groups*”, a term which is clearly defined in Article 3, paragraph 14 of the new EU PPP Regulation as including **residents “subject to high pesticide exposure over the long term”** as a result of living in the locality of pesticide sprayed fields.⁹⁶ Article 12 is a vital clause. Considering that the majority of poisoning incidents and acute adverse health effects that are recorded annually in the UK Government’s *own monitoring system* are from crop-spraying, then as said earlier, the prohibition of the use of pesticides in the locality of residents’ homes, as well as schools, children’s playgrounds, hospitals, and public areas is absolutely crucial for public health protection, especially that of vulnerable groups, as pesticides should never have been approved for use in the first place for spraying in the locality of any of these areas. Considering the risks, and acute and chronic adverse health impacts of pesticide use, then a preventative approach must be utilized, especially in relation to the protection of vulnerable groups including residents, babies, children, pregnant women, and those already ill. As said earlier, considering that studies have shown that pesticides can travel in the air for **miles** then the distance of the area where the use of pesticides is prohibited needs to be **substantial**. The areas where the use of pesticides is prohibited can of course still be managed/farmed using non-chemical farming methods. This would include rotation, physical and mechanical control and natural predator management. See below “*The Prioritisation of Non-Chemical Methods.*”

7.3 These aforementioned measures are all measures that the UK Pesticides Campaign has been calling for since the outset of the campaign at the beginning of 2001 and it is critical that all these measures are **mandatory** and must be introduced into the statutory

⁹⁴ Article 67 of the European PPP Regulation 1107/2009 can be seen at:- <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2009:309:0001:01:EN:HTML>

⁹⁵ Article 31 para 4(b) of the European PPP Regulation 1107/2009 can be seen at:- <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2009:309:0001:01:EN:HTML>

⁹⁶ The new definition for “*vulnerable groups*” in Article 3, para 14 of the European PPP Regulation 1107/2009 can be seen at:- <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2009:309:0001:01:EN:HTML>

conditions of use for the authorization/approval of *any* pesticide to *finally* protect the health of residents and other members of the public from exposure to pesticides.

7.4 Article 31 of the European PPP Regulation under “*Contents of authorisations*” states at para 4(a) that “*The requirements referred to in paragraph 2 may include the following: (a) **a restriction** with respect to the distribution and use of the plant protection product **in order to protect the health of** the distributors, users, bystanders, **residents**, consumers or workers concerned or the environment, taking into consideration requirements imposed by other Community provisions; such restriction shall be indicated on the label.*”⁹⁷

7.5 Therefore the EU legislation includes provisions that Member States can adopt regarding requirements for specific restrictions of use for the protection of residents’ health.

7.6 It is of great concern among residents in the UK that certain measures within the EU SUD and EU PPP Regulation are not currently being implemented correctly by the Government, as DEFRA’s response has been to, as ever, effectively maintain the status quo and not to bring in any mandatory measures to protect rural residents from exposure to pesticides, and to just continue to rely on industry-led voluntary measures only. Yet reliance on existing or enhanced voluntary approaches will not change anything and thus will not provide any public health protection, as voluntary measures have existed for decades, have not worked, however many times they are repackaged, and are completely unacceptable in this situation. Most importantly of all, DEFRA officials previously advised DEFRA Ministers in June 2006 that, “*...voluntary measures can only be used where there is no health risk to residents and bystanders...*”⁹⁸ Therefore DEFRA Ministers and officials are well aware that in the situation where the health risks and adverse effects are already accepted, (including in the Government’s own monitoring system), then **voluntary measures are not an option and thus should never have been relied upon in the first place in a situation where public health is at stake.**

7.7 Members of the public have continued to raise their concerns and/or report adverse health impacts to decision makers, Ministers, MPs, other politicians, over the use of pesticides, particularly in relation to agricultural pesticide spraying, and the lack of any measures in

⁹⁷ Article 31 para 4(a) of the European PPP Regulation 1107/2009 can be seen at:- <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2009:309:0001:01:EN:HTML>

⁹⁸ Taken from paragraph 94 of a document formulated for Ministers consideration by DEFRA’s *Chemicals and Nanotechnology Division* in June 2006.

the Government's existing policy to protect public health, especially rural residents and communities exposed to pesticides from living in the locality of pesticide sprayed fields.

7.8 The factual evidence clearly confirms the fact that in relation to the exposure of residents **more than enough evidence already exists** (evidence of AOEL exceedances; harm to the health of residents and others exposed, including in the UK Government's *own monitoring system* etc.) **for action to be taken now** with the introduction of mandatory measures for the protection of residents health, and that are very long overdue.

7.9 **Therefore DEFRA needs to urgently amend its policy and approach regarding pesticides, and must urgently implement all the aforementioned specific requirements for the protection of residents (at paras 7.1 to 7.5). Ministers must finally put the protection of the health of UK citizens first and foremost in its policy.**

The Prioritisation of Non-chemical Methods

7.10 There is no doubt that the widespread use of pesticides in farming is causing serious damage to the environment, wildlife and, above all, human health. A long-term approach is needed, rather than inadequate measures aimed at addressing problems only in the short-term. This problem is not going to be solved by simply *papering over the cracks* as the whole core foundations and structure on which the current UK policy and approvals system operates is inherently flawed. For example, it would **not** solve the very deep seated and fundamental problems that exist by merely **reducing** the use of pesticides **as just one single exposure could lead to damage to the health of humans, bees or other species**; nor will the problems be solved by merely substituting one pesticide for another.

7.11 The only real solution to **eliminate** the adverse health and environmental impacts of pesticides is to take a **preventative approach** and avoid exposure altogether with the widespread adoption of truly sustainable **non-chemical farming methods**. This would obviously be more in line with the objectives for sustainable crop production, as the reliance on complex chemicals designed to kill plants, insects or other forms of life, cannot be classified as sustainable.

7.12 Considering the health and environmental costs of using pesticides it makes clear economic sense to switch to non-chemical farming methods. **It is a complete paradigm**

shift that is needed, as no toxic chemicals that have related risks and adverse effects for any species (whether humans, bees or other) should be used to grow food.

7.13 In 2003 the then DEFRA Minister for Food and Farming, Lord Whitty, stated that, *“Reducing reliance on pesticides is a priority, and we want to find alternative, more environment-friendly pest controls for farmers and growers.”* However, this statement has never been backed up by **any real action** by either the previous Government, or the current coalition, to move away from chemical dependency and the strong ties with the agro-chemical industry to the development of sustainable non-chemical farming methods.

7.14 One of the main objectives/aims of the new EU legislation is to shift policy towards the utilisation of **non-chemical farming methods** in order to reduce dependency on pesticides. **Therefore the Government needs to prioritise as a matter of urgency the promotion and encouragement of the use of non-chemical methods in the UK.**

7.15 Incidentally, it is important to stress the fact that the system called **Integrated Pest Management (IPM)** is **not** the same as non-chemical methods. IPM is a system **that still uses pesticides to some degree** (whichever definition one goes by). To give an example of my own experiences of IPM in the UK, the farmers that were farming the fields next to our property insisted they used IPM, and yet they were known to spray 30 times in 6 months with mixtures of different pesticides! Therefore in *reality*, and in practice, IPM does not necessarily involve lower pesticide use. IPM is a weaker and a far more compromised system compared to utilising complete **non-chemical farming systems**.

7.16 To give a further example of the differences between IPM and non-chemical methods see the article at:- <http://www.eneuse.com/latest-news/science-a-environmental/31034-connecticuts-historic-pesticide-legislation-threatened-by-ipm-bill.html>. Although the article is largely related to the use of pesticides on lawns (and in Connecticut) note it says,

*“In the years since the original bill was introduced by state senator Ed Meyer, a robust natural lawn industry has sprung forth in an around Connecticut. Numerous groundskeepers have adapted practices that allow for the maintenance of excellent playing fields — **yet the synthetic chemical industry has never stopped lobbying the legislature to roll back the protection to include “integrated pest management.”** **IPM allows for synthetic chemical pesticides at the discretion of the licensed applicators.**”*

*“The pro-pesticide strategy is to call the elimination of the pesticide ban ‘Integrated Pest Management,’ **but what it really stands for is business as usual,**” said Dr. Jerome Silbert, a*

pathologist from Connecticut. ***“If this bill (5155) passes it will be a major setback for the protection of young children from involuntary exposure to toxic lawn pesticides.”***

*“This was well thought out and well explored law by all parties,” said Alderman. **“The state should not roll this law back because industry and SOME grounds keepers would like to use pesticides again under the guise of Integrated Pest Management. When IPM has been mandated in other states it has proven to be unenforceable — because it allows pesticides — and once pesticides are allowed one cannot tell how much or how many times they are used. IPM has not proven to be a workable method when mandated for schools.”***

7.17 Therefore, as said above, IPM is **not** the same as non-chemical methods. The problems with pesticides will not be solved by IPM. As said, it is a complete paradigm shift that is needed to shift policy away from the dependence on pesticides altogether.

7.18 The adoption of the new European legislation, with the key objective and aim of utilizing non-chemical methods to reduce dependency on pesticides, gives the coalition Government the chance to overhaul the existing policy and approach in order to make the protection of public health the number one priority of the UK Government's policy and regulations. A different approach is urgently needed and is very, very long overdue.

7.19 Please note that any comments made by me are, of course, **Without Prejudice** to the position taken by me, and the evidence and arguments advanced by me, in my legal case, both through the domestic courts, and before the European Court of Human Rights.

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UK Pesticides Campaign.
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9th November 2012