ROYAL COMMISSION ON ENVIRONMENTAL POLLUTION

PESTICIDES STUDY

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Committee Members:

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PROF. STEPHEN RAYNER
DR. IAN GRAHAM-BRYCE
MR. JOHN SPEIRS
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INTERVIEW WITH:
LORD MELCHETT and MS. GUNDULA AZEEZ
(The Soil Association)

THE CHAIRMAN: Thank you very much for coming to join us. We are looking forward to a good discussion; also you are going to join us for lunch, I understand.

LORD MELCHETT: Yes, I will be delighted to.

THE CHAIRMAN: I think the last time you came along to the Royal Commission you were in Greenpeace, were you not?

LORD MELCHETT: Yes, I was.

THE CHAIRMAN: You are very welcome in your new role. We are, as you know, in a rather intense period of studying bystanders and pesticides. We launched our marine environment study before Christmas so we are free to focus on this and hoping to get the report done in the next three to four months. Your contributions are coming at a very good time. Maybe you would like to say a few words to get us going and then I think my colleagues will have a few discussion points for you.

LORD MELCHETT: Thank you very much indeed and thank you for asking us to meet with you. The Soil Association, as we have said in the evidence, is the main organisation covering the organic sector in the UK. We represent, and have amongst our members and supporters, people through from farmers to consumers. We are not a farming organisation, or retailing, or food manufacturing organisation, or a consumer group, but we try to be a combination of all those things. Also, our subsidiary, Soil Association Certification Limited, certifies about 70% of the organic food sold in the UK, that is UK produced and imported. This representational role produces some conflicts, as you can imagine, between the interests of producers and consumers, retailers, and manufacturers. It also makes the Soil Association a very interesting and lively place to work. Our interests in pesticides are two-fold, as I said in our evidence. One, the organisation was formed to promote sustainable methods of farming and food production. I do not think it was called "sustainable" in those days but that was, in effect, what people were after. We do not think the use of pesticides fits in with the system of farming which meets the sustainability criteria. Secondly, we have an interest because if non organic agriculture is allowed to use methods of production which cause costs to society but which are not imposed on the producers, that makes non organic food relatively less expensive compared to organic. We are in a market place, we are competing for sales, and price is a factor in people's decisions about what food they buy and what food they do not. It is not the only factor and it may not be the most important underlying driver of concern about food and food quality but, of course, it is a major concern for consumers as they go to purchase. We want non organic farming to pay the full cost of the system of production and external costs not to be imposed on society as a whole. That is a self-interested view, we do not make any secret of that, and an economic view. On pesticides it struck us in thinking about your inquiry, and the timing is an interesting one, it seems to me, that two things were worth drawing to your attention. The first is certainly my personal feelings, that the regulation of pesticides has not developed in terms of the way that scientific advice is given to politicians in the same way, for example, as the Food Standards Agency has undoubtedly changed the way in which advice about food safety is given, both to politicians and to the public. My view is that the Advisory Committee on pesticides, and I think this is the view shared by some, a minority, of members of that committee, is still in the pre-BSE, "We are right, this is safe, you do not understand it, go away and leave us alone," sort of mode of official advice. I think this area you are looking at is a very good example of that but it is not the only one, as we have said in the evidence. Secondly, and maybe more fundamental and certainly more pertinent to agriculture, you are looking at this more or less within days of

agricultural policy going through one of the most fundamental changes in the post War period, if not the most fundamental change. From 1st January on my farm -- I should say I am an organic farmer, I do not know if I said that at the beginning but I have an interest from that point of view as well as working for the Soil Association -- as in every other farm in England, and Scotland and Wales slightly differently, started the process of decoupling public support from production. It is no longer an objective of public support for agriculture that production should be increased, indeed not even an objective of public support that production should continue at all. You can be eligible as a farmer for public support for your land without producing anything now. It is not a requirement that you farm the land but you have to keep it in good agricultural condition, which is quite different from production. I think the pesticide regime in the last 50 years has been shaped by the perception that public policy required continued production of agricultural products, with the use of pesticides being an integral part of that. That shaped the way the science was viewed, the way regulations were imposed, the cost benefit analysis inevitably done by any committee; - you will have to do the same sort of process in giving advice on this issue - and that has changed dramatically. I think the time has come, as we say in the evidence, for a radical re-assessment of what safety factors should be considered when looking at the issue of pesticides.

THE CHAIRMAN: Thank you very much. I think probably we share those views, largely. I think the point about the FSA and the PSD is an interesting one and maybe we can take that up in moment, and also the relationship maybe to the SEP. Maybe we could start off on a broader issue. We have lots of people coming in today from rather more intensive farming backgrounds. Of course, their basic assumption is that intensive farming is an absolute requirement in the UK to produce food that customers want to buy. I just wondered whether you could point us at some publications or tell us what your thoughts are on how much food we can produce if we went entirely over to organic, and what would be the challenges and the problems, and the differences, that the consumer would find.

LORD MELCHETT: I touched on this briefly in our evidence. I think we probably start by saying that there is a limited amount of serious research data on this. I would not say we can point you to a comprehensive set of research which will give you all the answers you want. Some of the best long-term research has been done in the US and in Switzerland where there have been 20+ years of trials comparing organic and non organic systems. As I have said in the evidence, in America those trials suggest that for some crops yields will be similar, organic and non organic, or even slightly higher in the organic system comparing crop with crop, and certainly higher in years when the crop is subject to particular stresses like drought. Organic soils after a period of time are much better at retaining moisture than non organically farmed soils. In Europe where nitrogen use and pesticide use tends to be higher the yield differential is greater, around 25% to 40%, depending on the crop. I am sorry, it is 5% to 40%, averaging about 20%, but an average is misleading in this context, frankly, because you may have a crop with a relatively small acreage where there is a big difference, and so on. There is no scientific evidence which says one system can feed the world and another system cannot; anyhow, it is a very weird question to ask of farming. Because how people get fed and whether they have enough food or too little food is generally, but not always, but generally not dependent on the amount of food produced in that country or region but is a factor of economics and political instability, of war and so on. I know this is a long and rather unclear answer but we have a paper looking at relative yields on different systems which we would be happy to give you. We have a briefing note which summarises the current science. The other thing that may be worth stressing is that most of the projections you hear, if not all, about what it would take to feed the growing world population, assume at the very least a continuation of current Western diet, Western European/North American diet, and probably extrapolate from North America's, and say to feed the world (to the standards of one of North America's, eating

hamburgers and chips, and meat, at every meal) you would need to do X, you would need to produce X billion of pounds of this, that, and the other. That would be a very unhealthy world, completely unsustainable with huge intensive livestock production that would cause the sort of problems they have in North America. If you wanted a world with a healthy diet, we think it a reasonable hypothesis that you could do it organically.

DR. OWENS: Before you leave that point, you focused then on outputs of different systems but what about the input, obviously, other than pesticides, labour input, land input, land and labour?

LORD MELCHETT: I am assuming the land is fixed. I take that as a given. Organic farming requires more labour for a variety of reasons, partly because organic farms are almost always mixed crop and livestock and that requires more labour than all arable or all livestock. This is going to be a huge factor in the developing world; Colin Tudge has written recently about this in his book, about the impact of the loss of labour in developing countries from agriculture and the social consequences that may have. If you have, for example, in India the same proportion of the population employed on the land as you have in Western Europe and North America, you would have unthinkable social problems. Input other than labour in organic farming comes from the sun and the soil's biological processes. On my own farm we do not bring in to the farm inputs from outside to any great extent but to the extent we do the goal is to be a closed system.

PROF. EKINS: I would like to follow up some of those points. While I am interested in feeding the world our study is on bystander exposure in the UK of pesticides and, therefore, a relatively narrow focus. We are being invited by various people to consider the possibilities of restricting the use of pesticides that could take a very large area of agricultural land in the UK effectively out of conventional agriculture and conventional wisdom about that is that that would result in the UK food output falling, of the price of UK food products rising and, undoubtedly, in the world market context, that would lead to greater imports of non organic food produced in intensive ways elsewhere and fewer productive farmers in the UK. It is most unlikely that the organic market, at prices currently being charged for organic food, would be able to expand at anything like the required rate to make up the difference. The imports would simply make up the difference. Nothing in your submission suggests to me that that is not actually what would happen and we clearly need to be clear about that if we are considering these potential restrictions on pesticides.

LORD MELCHETT: Yes. The rate at which the market for organic food is growing is steady but not spectacular. I agree that if you had a dramatic drop in UK non organic production, which was affected by some restriction on pesticides, the consequences you describe of imports increasing might well happen. I think to suggest that is the only possible future scenario has a degree of over-confidence in ability to predict what is going to happen in farming food, which is unwise. The fact of the matter is that most UK farming is unprofitable without the subsidy attached to it, and the subsidy has just been detached from the production. Some agricultural commentators and consultants are suggesting that a lot of farming will stop because there is no economic reason for doing it. Whatever you recommend about pesticides, or bystanders, or field margins, how you are going to disaggregate the effect of decoupling of subsidies, from anything you recommend, even with the benefit of hindsight in ten years' time. I would find hard to see how you can predict that now.

PROF. EKINS: I was not suggesting we were predicting it, I was suggesting that this was a scenario that had been put to us on a number of occasions.

LORD MELCHETT: How people can predict it to you I do not know. I would like to see on what basis they do it. Secondly, the spraying will affect some farms, constraints on spraying, it depends what sort of constraints you impose and how quickly they are introduced, and all sorts of other factors as well, of course, that that will affect some crops, some designed for export, some not for feeding people here directly. So, again, the suggestion that has been made to you that there is this simple linear thing, you stop production here and bring in imports, clearly is not right. I would hope that a move of this sort would increase the cost of non organic food and would help grow the organic market.

PROF. EKINS: Increase the cost in this country but not internationally, obviously.

LORD MELCHETT: Conventional food markets are already importing what they can and have imported against quite a strong desire not to see food imported but to see food produced in the UK. There is a commercial pressure working on the supermarkets which some groups of farmers, Farmers for Action, and so on, have taken advantage of actually to call for supermarkets to buy from UK farmers because we know that is what consumers want. We certainly know from the market research we have done in the organic sector that organic consumers see buying organic food as a way of supporting UK farming, even though the level of imports in the organic sector is higher than the non organic. I suspect, I do not know, that there are real limits to how much domestic production can be substituted by imports.

PROF. SPRENT: Perhaps I could come back to the imports, anything unsustainable, it seems to me, is importing organic stuff from Mars and miles and miles away. Do you see that as a major problem. This is slightly off the pesticides so it is probably an unfair question.

LORD MELCHETT: As I mention in the evidence, one of the concerns of the organic sector or movement as a whole has been the high level of imports which were running at about 70% a few years ago of the total market in the UK, 30% UK produced. That has now switched and UK production is about 45%, currently, and the UK government's objective is to achieve 70% UK production by 2010. Imports vary in the degree to which they are sustainable and unsustainable. Bananas on a boat are a sustainable import, green beans in the hold of a 747 are not. There is a big variation between those. The fact is that we are importing things that we produce in the UK and we, the Soil Association, think that is quite unacceptable; organic beef from Latin America, for example, or organic port from Germany because the standards for organic pigs at the present are lower in Germany than they are here. Again, there is strong consumer resistance to that practice and on the whole, if we can get the information to consumers, consumers can put pressure on retailers to change that. That is our experience and we are working to do that.

PROF. SPRENT: Could I perhaps come back to the soil for a minute because I think the data that you are citing from the USA, and wherever there have been data available, is largely on not too bad quality soils. On marginal soils other things are going to become limiting, and even on your soils I would argue that other things, you are fixing the nitrogen phosphorous (unclear) at the end and I know, because I looked at your website, you allow some phosphorous availability. The other thing you claim, and you are right, I think, you have a good organic soil but there are other ways of getting high organic matter in the soil, for example, no till, and other methods. I would not say we necessarily are with you on that one.

LORD MELCHETT: Sorry, the last point, necessarily.....

PROF. SPRENT: Winning in terms of organic being better, which is one of the points you make, for the environment, CO4, and all the rest of it, I think there are other management issues which could well come in and be equally effective.

LORD MELCHETT: The trial in Switzerland is on reasonably good soil; in the US and Pennsylvania, I am not sure about the soil.

MS. AZEEZ: There have actually been a fair range of studies and also we get feedback from farmers as well. I do know, I have spoken to people in the US who, for example, grow tomatoes, and they manage organic matter so efficiently they do not even bother to label it organic. I think there is quite a range but I would also say that there is so little research and investment in the organic sector. It has actually quite a huge potential and conventional farming can still be developed to some degree but organic has huge potential. There are many different ways in which you could further control some of the problems and actually increase yields like intercropping. Half of all cereals are grown for animal feed and you could grow two varieties, or two crops, in one field and increase the overall yield quite considerably. You could combine forestry and farming and therefore to some extent increase the land area for agriculture. There is huge potential over where we are now with organic.

PROF. SPRENT: I think we better come back to pesticides.

LORD MELCHETT: Could I just mention no till there because this is a favourite ---- PROF. SPRENT: I know it is. I knew it would produce a reaction.

LORD MELCHETT: -- and a highly inaccurate answer from the conventional sector, and particularly from the people in favour of GM crops, who argue that no till is facilitated by the use of that technology. No till has been around for a long time, it was very fashionable in the 1980s in British agriculture. It lasts usually as a fashion in farming for a few years and then runs into serious weed problems, black grass and other weeds of that sort which require heavy use of pesticides and a return to rotation. There was an article in Farmers Weekly just a couple of months ago saying, we are starting to run into weed problems with no till and ploughing is the answer. Even in a no till system you still have a lot 14 of tillage going on, a lot of movement of the soil in a rotation. In an organic rotation on my own farm, a seven-year rotation with three years of grass laying, the first year under-sown, we have, I would say, much less ploughing going on than in a no till conventional farm ----

PROF. SPRENT: And much less nitrate run-off.

LORD MELCHETT: And much less nitrate run-off, dramatically less, because I am desperate to conserve the nutrients in my soil. I farm on very poor soil, sandy soil with chalk in North West Norfolk, and the second I have harvested a crop I am putting something else in to hold what nitrogen is there as a green crop over the winter.

PROF. EKINS: Could I just ask one more question about the economics of this stuff, particularly in respect of your statement that you think it is unacceptable that we should import food that we could produce in the UK. We import lots of things that we could produce in the UK, - motorcars spring to mind, something we used to produce and now produce very few of, but we import lots of them. Consumers generally do not seem to think that is an unacceptable activity and obviously market integration globally is producing more and more of that kind of activity. What makes food different so that we think of food in a different way to motorcars and why are consumers generally going to

care about this enough? I can see that from a very small base there may be a number of consumers who care but why should consumers care about it enough to be a significant market force?

LORD MELCHETT: That is a good question and one which I think certainly occupies us in the Soil Association in thinking exactly about what you said, why should the British agriculture not go the same way as the British car industry, or the British motorcycle industry? Why should we have any right to produce food in this country when clearly it can be produced more cheaply elsewhere? I hope, I do not know but I hope, as a farmer representing an organisation working with farmers and food manufacturers, and so on, that people, as organic consumers generally do now (a small proportion of the population I agree) will feel that there are real advantages in buying food which has been produced wherever possible locally where they live. Where they know the origin of the food, what has happened to it from when it was produced to when it arrives on their plate, exactly. Where they will see the advantages in terms of the landscape and wildlife and the amenities that the countryside offers the population as being linked to the food that they end up eating on their plate. As an organic farmer selling meat locally I do find that there are consumers from all walks of life who come to our farm and who value the fact that they can see the pigs in the field, that they know the abattoir, the local butcher who kills them 20 minutes drive away, that they talk to the person who reared the pig as it is sold to them, and that the same applies to the sheep and the cattle that they end up buying as lamb or beef. There are some very interesting examples, particularly from other European countries like Italy, of these connections being widened to include an understanding of local food culture and seasonality, with local food that is typical to a region being part of education. Children visit the farm that supplies the food to the school, talk to the farmer about what the farmer is producing, what would be on the menu in the next term, what is seasonal, in season and not in season, and the farmer then comes to the school with the food. You make all of those links in a way that provides some reassurance about quality, significant reassurance about quality, and identity of the food and the extent to which it is processed, and so on.

PROF. SPRENT: It does not have to be organic, you could apply the same arguments to non organic food.

LORD MELCHETT: With great difficulty because the way in which the conventional farming systems are driving agriculture are into greater and greater specialisation, for example, as one of the drivers. It is happening all over the country.

PROF. SPRENT: But LEAF farmers and people like that ----

LORD MELCHETT: LEAF farmers are still subject to the same drive to specialise, to reduce the number of crops they produce. They have already specialised into livestock and arable, arable farmers in East Anglia are now becoming more and more specialist in the particular crops they grow. This is a trend in organic which we are trying to resist as well, that you get all organic carrots grown in the east of Scotland.

PROF. SPRENT: You do actually. I live there.

LORD MELCHETT: It is a bad trend and we want to fight it.

SIR BRIAN FOLLETT: Could I bring us back to the issue of bystanders versus pesticides. It really is the only thing we have to focus on. We are not in this very quick, as it were, dirty reporting, it has to answer questions. The question that we are facing is the claims by a small number of people that they are suffering health issues. It is not complaints from the farmers that they are suffering, or

from the manufacturers. Basically, it comes down quite quickly to a small and very vocal group of people who are suffering a variety of ill-health issues which they believe are due to bystander exposure. That is the core of what the government asked us to look at. You use quite a lot of pesticides anyway in the organic farming, they are laid out here. What systems do you have in your organic farming industry that we could think about in our report? Do you all as organic farmers inform all the bystanders of what you are doing? Do you all have records which are open to the people next door? Do you have any records of recent, not old-fashioned but recent, accounts of ill-health by people living next to organic farms? I think if one is going to try and get the moral high ground then I would assume organic farming would also like to be pretty customer friendly when it does use pesticides, some of which are quite nasty.

LORD MELCHETT: Those are good questions. I would quarrel with the suggestion that we use quite a lot of pesticides. I do not use any on my farm at all. Most arable farmers do not use any. The pesticides that are used are concentrated almost entirely, not entirely but almost entirely, on potatoes and top fruit, apples, and soft fruit, and in greenhouses or poly tunnels, protective cropping.

SIR BRIAN: Let us focus down on those two.

LORD MELCHETT: It is pretty limited. The use of derris, for example, and rotenone, is almost always in protective cropping, in a greenhouse or a polytunnel, and the copper and sulphur are used on potatoes and things like apple orchards. Particularly the copper and the sulphur, of course, are substances used in non organic agriculture as soil conditioners and fertilisers. To describe them as particularly nasty I think is unfair, although to be clear we want to see their use ended. There are continuing efforts being made by the organic movement globally to end these examples, as it were, of the conventional or non organic system in organic. There is a paper going to be given at a Newcastle conference starting today about developing new breeds of apple which are much more resistant to fungal attack, which is the main problem there. With potatoes, new varieties are being bred specifically for organic farming. I think as Gundula said earlier, this is an area where there has been virtually no research for 50 years, almost no research funded by public money, and of course there is very little industry money. There is no organic chemical industry funding research on potatoes which will not need spraying any more, for several obvious reasons. We want to phase it out. At the moment we do not have rules in place which require notification to the public, as far as I know. We are subject to the same rules as other farmers. Most of the information, most of these chemicals, not all of them, there has to be prior notification to the Soil Association and there would be records kept on farms. We would know, the inspectors would know, the Soil Association inspectors. For some of them, and I cannot remember but Gundula will, you need permission from the certification body, at least under our system (I cannot speak for other certifiers) before we are allowed to use the chemical at all. This is not something we expect to keep secret or farmers to keep secret. Some of the information I put in this evidence that we are going to publish in more detail later comes from the records we keep of that use.

MS. AZEEZ: The conventional lobby like very much, I think, to exaggerate the extent to which we use chemicals. The Soil Association is there to advise farmers on at least four of which a couple are used perhaps 20 times a year, a very small amount, only after prior authorisation from the Soil Association. It really leaves only copper and sulphur and they are unlikely to be used on a large scale, and even then it is a tiny proportion of the organic land area. Copper and sulphur are both very simple compounds, very different chemically to the complex substances that are used in conventional farming. We only allow them because they are these simple compounds which are out there in the environment anyway. Sulphur is deposited in acid rain and now there is a lot less of it

that is causing problems in farming and it has to be applied artificially. These are substances which are there, copper and sulphur are elements which are there in nature anyway, so just to keep it in perspective they are a different type of chemical on a very limited scale; not that we are happy with that situation but it is not the same as using.....

LORD MELCHETT: Should you recommend any further restrictions we would be very happy to see them imposed on organic farming.

MS. AZEEZ: We would like investment to help us not even to use these. We would be more than happy with that.

PROF. HOSKINS: You do not insist the Green Code is followed.

MS. AZEEZ: Organic farmers have to follow everything conventional farmers do.

PROF. HOSKINS: Yes, that is an advisory code but you do not.....

LORD MELCHETT: It is not a requirement of inspection, no.

DR. GRAHAM-BRYCE: Much of the ground I was going to cover has been addressed but I cannot resist the observation that some of the most damaging effects on soil have been caused by the use of copper fungicides. Perhaps getting back to the main thrust, you say that the same requirements are imposed on organic farmers with regard to spraying as conventional, what we can call conventional farms, but has your Association been thinking about the practicalities of some of these measures which people have been suggesting to us with respect to the use of the, I agree limited number, chemicals you do use, like prior notification of neighbours and so on? Has that been a subject of concern to you? The reason I am asking is really that those who resist some of these suggestions are very concerned about the practicalities and I wondered if you had given thought to this.

LORD MELCHETT: No, we have not in any detail but I do not think in our system if there are objections from others they would apply. For example, prior notification, you would have to give prior notification for some of these chemicals in the organic system to the certifier ----

DR. GRAHAM-BRYCE: Yes, but not to the neighbours?

LORD MELCHETT: No, but if you are doing it to the certifier it would not be difficult to the neighbour. The argument against prior notification, as I understand it and you probably know better than I do, is that there may be some difficulty about timing. If you have to ring up the certification body and talk to them, discuss whether there is an alternative, discuss whether you are going to be able to phase out the use, have that sort of conversation which you need to do as an organic farmer in order to keep your licence to farm organically, telling neighbours is going to be ---- PROF. HOSKINS: How long before you apply is this?

LORD MELCHETT: Just before; there is no time limit but you would obviously have to have enough time for the certifying body to have the conversation with you. Added to which you are talking about an organic. I am not sure you can take this sort of parallel very far. I do not want to put an unfair burden on my non organic farming colleagues but you are talking about in a normal organic farm where one field on the farm might be affected, that might grow potatoes each year. You are only talking about one field, one spray, maybe sprayed typically two or three times at the

most, and you are really talking about such a limited area, limited number of applications. It is not like conventional farmers who grow in every field spraying them regularly, spraying quite rapidly in response to the outbreaks of disease and so on. I do not think it would be a problem for us but I do think from that you can deduce it would be a doddle for every other farmer in the country.

DR. GRAHAM-BRYCE: But you would not find that a problem if that was introduced into the organic farming regime?

LORD MELCHETT: No, we would welcome further restrictions on the use of pesticides and further consideration of the safety of the bystanders.

DR. OWENS: As a matter of interest, why does the Association not just recommend as a matter of good practice that notification is made and should take place?

LORD MELCHETT: That is a good point and subject to what you say in your report I think we should do. The answer is because the amount of spraying that is done in the open on fields is so limited, so occasional, that it has not been a factor. We have been focusing our work on our own use of pesticides in quantifying it and particularly on trying to get resources into the crop plant breeding programmes which will make the use of the chemicals unnecessary. We are not in business to make the use of these sprays acceptable or desirable. We want them to be stopped. That is our position.

DR. OWENS: Are you aware of any complaints of the kind that we have been dealing with that relate to the spraying of these

LORD MELCHETT: No, but I will maybe take the opportunity to come back on something Sir Brian said in characterising the basis of your inquiry, if I could go back a couple of decades to the Wildlife and Countryside Bill when I was in the House of Lords and we moved amendments to try and restrict the use of sprays near footpaths. At that stage, one of the arguments used against us was that nobody has complained about this. It was true, very few complaints were made. The Ramblers Association did some investigations at the time and there were some cases. I understand from the Ramblers Association, I checked the other day, that this is still the case, they get a small number of people contacting them. For example, their dog had walked through a field which smelt funny, they did not think any more about it, but five hours later the dog's stomach came out in a rash of red blisters, or something of that sort. These are occasional, not very frequent, and my view then was that on the whole many people who walk through a field that has just been sprayed and they are coming into contact with the crop and maybe with the spray directly on their skin, will still not be aware of the fact, unless the smell is very strong, and even then a lot of people walking in the countryside will put it down to farmyard manure or something like this. If the crop has dried or it is raining, it is misty, or any other reason for it to be wet, why should you know unless you actually see the sprayer going up and down? I do not think you can assume that the small number of complaints bear any sort of necessary relationship to the number of people who could be affected. As I understand it, even though we raised it in Parliament 25 years ago nearly, there has been no research done to look at this. On my farm we have hundreds of people walking and the numbers of people walking have gone up. I keep a record of this, actually have some data. I suspect if we were still spraying a lot of people would still be coming into contact with crops that have been sprayed. I notice, and Gundula has reminded me, that the Pesticide Safety Directorate have found that even those people who do manage to (a) know they have been in contact with the spray, (b) connect some symptom they have with the spray, (c) find out what the spray was and who made it, and, (d)

complain to the company, that that data has been suppressed by the companies, that has just been made public by the Pesticide Action Network and by the Pesticide Safety Directorate.

THE CHAIRMAN: You were coming on to this particular point on numbers, Steve, and..... PROF. RAYNER: I thought that was a point to take up in the questioning I was proposing to pursue.

THE CHAIRMAN: Do you have anything close to this point, John?

MR. SPEIRS: I just wanted to follow on one or two things.

THE CHAIRMAN: We will come back to that in a moment, then. John?

MR. SPEIRS: In the past I would have had to declare an interest because I worked for 20 years for Norsk Hydro. There was one relevant thing said earlier, that is, that we were involved very much in the research looking in real terms at what was happening. This was the Co-op, if you remember, where they set off fields, some were organic, some was integrated crop management, and others were intensive farming, and it was done over actually quite a large number of years. I think, I do not remember all the details but I think actually the results of that were actually fairly widely accepted as having been done properly so you could compare. The interesting thing, I think, from memory, is that there was perhaps more variation so far as the organic was concerned; sometimes it was just as bad and was very difficult to get a good crop, particularly sometimes with fruit, the intensive was definitely a problem on it, but there was not so much over a period of years between really good integrated crop management and organic farming.

LORD MELCHETT: Sorry, not so much what?

MR. SPEIRS: Difference, if you like, between the final outcome of selling the crop, financially, i.e. I guess you have to be profitable in the long term, and a final measure on that. Obviously, on the organic they were not using pesticides and on the others they were a little bit. It always has been on the one hand organic and on the other all the rest who are beyond the pale. It seems to me that it is actually not quite like that. For instance, many of the LEAF farms, and I am certainly very familiar with one where, for instance, the fellow told me recently he has absolutely given up the use on potatoes of the pesticide. The reason is that he is doing it by research with somebody where they are developing seed potatoes that in fact have success, you do not have the problem, so that you then have to put all the sulphuric sulphur on it and so on. What I wanted to lead on to, coming back to our bit, we have been asked to look particularly at individuals. You are right, we found the problem that there are not too many. I have to say actually, Brian, we do have some reports from farmers themselves who have written in complaining that they have been affected although we were talking more of the public, and so on, doing so and being affected. I guess it is fair to say that many of the non organic people are aiming, of course, to do many things like have beetle banks, not to do a whole series of things, get all the rapters back, and so on, but at the margin they will use the pesticides when there are real difficulties, whereas what you are saying is you never do it. What we have difficulty on, if you like making the distinction beyond you, is how does one know whether pesticides are having an impact; forget for a moment the sustainability bit but from a health point of view. In your report you do say you are familiar with cases and clearly there are people reporting and it has been reported in the press. Is that where your knowledge is from or do you have specific information that would be helpful to us about people who have been affected and where there is ----

LORD MELCHETT: No, we do not. We are an organic farming organisation. We would not be the people to whom somebody affected by pesticides would normally turn to give information. I do not

think in our evidence we have said we know of cases either. I will maybe make two points in response to what you said. First of all, clearly organic is a system of farming which is defined by law, by European and international law, inspected and certified; it is clearly defined. You can only sell something as organic anywhere in the world now, more or less, if it meets those standards. The standards are similar in North America and Europe, and so on. There is then a range of different conventional systems, or non organic systems as we say, and the variation is actually much greater between countries. North America uses less fertiliser and pesticides than most integrated farming systems in Western Europe. The integrated farming systems in a country like Switzerland are much closer to organic than they are in the UK, for example. Just devising categories where you do not have clear legal, enforceable, and inspected standards is very difficult but, nonetheless, there are some clear differences. The first one is where you obtain the fertility, where you obtain the nitrogen and fertility. In an organic system you cannot put it on as an external input from a bag, you have to build fertility in the soil and you have to rely on retaining that and keeping it there. Given the effect nitrogen fertiliser has on soil organisms, that is a fundamental difference. In the organic system you have to rely on the farming system to control weeds and disease. You cannot do that even in an integrated occasional way with a spray application of a chemical. You have to have rotations. In most countries you have to have a mixed system of livestock because you cannot achieve either of these, fertility or disease and weed control, without the use of livestock. I think, frankly, there is a really fundamental difference, scientifically and in terms of farming, in terms of skills, and all sorts of other things, between organic and the range of other systems you described. As far as scientific evidence about the differences between the two are concerned, the latest view of the UK government is that in environmental terms organic has clear advantages and that integrated farming systems, LEAF and so on, do not; there is no scientific evidence to suggest that they do. According to Defra, and that is the official government view, it is a view of English Nature, it is government scientific advisors, there is plenty of peer review literature to support that view. It is very difficult to show clear environmental benefit from a system by integrated pest management or LEAF compared to either conventional or organic. One of the reasons is because there is no clear definition of what you are talking about and no stability in the integrated pest management or LEAF system which allows you to make a comparison. These are things which are applied on farms to suit that particular farm. One other quick point because the LEAF stuff in a way is a bit irrelevant to your inquiry.....

THE CHAIRMAN: We are getting a little bit off main beam.

MR SPEIRS: Yes, I want to hear about the health thing I raised.

LORD MELCHETT: What we have said in our evidence, to be clear, is that our view is that the possible risks to bystanders have not been properly investigated, or taken into account by the regulators. To do so, as with the cocktail effect and a number of other examples we have given, would have caused potentially, potentially caused, significant economic costs to non organic agriculture and that was deemed to be in contradiction to public policy. That is our view, not that we can point you to an individual who said it but if you look at the way the regulatory system has approached these problems over the last few decades, we think it has been shaped, as all regulatory systems are, I am not saying this is a criticism but I think it is a fact, certainly one I assert, that the regulatory system has been shaped by a particular economic view and that you should take this opportunity of saying this can change now because agricultural policy has changed.

SIR BRIAN: How has the FSA done that?

LORD MELCHETT: We should start the preface by saying that the relationship between the organic movement and Sir John Cripps has not been an easy one so anything I say about the FSA maybe can be seen in that context.

THE CHAIRMAN: I am extremely impressed at how congratulatory you were earlier.

LORD MELCHETT: Our relationship with the FSA staff, particularly the scientific and technical staff, has been much better. I think we have a great deal of common objectives with the FSA, school meals and improving the quality of the diet of children is an example. We work closely with them and now with the Government whose policy has changed in that area following publication of the public health white paper. Nevertheless, I think it is clear that there has been a significant change both in the degree of openness and the degree to which the FSA has been prepared to be not just open about information and consultation, and paperwork and research, and so on, but also open in the sense that it is being open about doubts and uncertainty, about food safety and the issues they cover. That is different from the way MAFF did it, it just clearly is quite different. The advisory committee on pesticides, by contrast, would cite something which I know is troubling the committee at this moment, their reaction to the paper by some doctors in Oregon, I think, about pesticide dangers.

DR. SPRENT: Ontario.

LORD MELCHETT: Ontario, where the initial reaction was that this provided no new information and did not warrant any further work. There was actually, as I understand it, a minority on the advisory committee on pesticides who did not share that view and that minority point of view may appear on their website in due course. That, I think, will be the first time where there has been some acknowledgement that scientists do not all have the same view about everything to do with pesticides.

THE CHAIRMAN: Let Steve come in because I prevented him earlier.

PROF. RAYNER: I wanted actually to take you up on a number of things you have been touching on, if I may. In your written submission you claim, for example, the example of the cocktail effect is well known. We have heard it invoked but actually we have not seen very much in the way of a compelling scientific elaboration that this is anything more than a plausible hypothesis at the moment. If you have any information that takes us beyond it being a plausible hypothesis that would be very helpful. Similarly, you write about the certainty of many people being affected by multiple exposure, a multiple chemical sensitivity syndrome. Once again, a plausible hypothesis but one which, sadly, we have not been able really to pin down with a very compelling scientific account of. If you have any indication at all or can point us in the direction of any information that would help us, that would be very helpful, particularly with respect to the numbers. We find it very difficult to get any information on the number of people affected, either by the so-called multiple chemical sensitivity or bystander pesticide exposure. You say the Ramblers Association also had examples of walkers which you just now indicated was a small number as opposed to the many number affected by the multiple chemical sensitivity. We are finding it very difficult to get a sense of what the scale of the issue is here and whether we can go beyond plausible routes. I think we are already convinced that some bodies have not paid sufficient attention to whether there is actually more than plausibility at stake. That is the first part of my question.

LORD MELCHETT: We did not talk in our opening about multiple chemical sensitivity. We do not have ----

PROF. RAYNER: You say, many people being affected by multiple routes of exposure to agricultural chemicals. You are talking about something different there?

LORD MELCHETT: I am not talking about a medical condition or outcome, I am talking about, as you said, the plausible view.

PROF. RAYNER: You described it as a certainty, actually.

LORD MELCHETT: Certainly that these chemicals are getting into our bodies. What effect they are having, we are not doctors and we do not claim expertise on that, which is why we did not talk about multiple chemical sensitivity. I know other people have given you evidence about that who have more expertise than we do. The point we were trying to make that I will try and clarify is that there are, and I think you have largely accepted it so I will not labour it, there are multiple routes of exposure to chemicals, particularly in pesticides, and it has tended to concentrate on the single exposure. There is plenty of evidence that there is a large number of these chemicals in our bodies, people have done an analysis of people's blood and so on. What we are arguing in our evidence is that if that is a plausible hypothesis, as we have said that it might be and it is, then in any risk analysis it should be taken into account. The risk to which you are exposing bystanders, walkers, farm workers, whoever it might be, should be considered in the way in which the release of those chemicals is regulated.

PROF. RAYNER: You offered just now a contrast between what we see in post-BSE with the food standards area and the pesticide area. To what do you attribute the apparent disparity and social learning between the food safety area and the pesticides safety area? Why is it that we have two government agencies or two government bodies both of which are clearly aware -- start with the people who are aware of what happened with BSE and yet seem to have a very different orientation towards these problems.

LORD MELCHETT: I agree with you and it is interesting. I think it is because of the change with the Curry Commission post-BSE and the change from MAFF to Defra and so on, those changes were very significant and they inevitably take time to introduce. These are all human beings and a lot of them have worked in a particular way and a particular way of thinking for a long time and continue to do so, whatever the politicians and Sir Donald Curry and others might say, and whether the name of the department has changed or not. That is true of all human institutions that they take a long time to change, and maybe some bureaucracies longer than others. In our experience in the Soil Association and I think other parts of Defra, we come across (and it may be unfair to characterise them as) pockets of resistance where the changes have not really quite reached there yet. I think that is one reason. Another reason, and this is pure speculation, I just think that pesticides is one of those areas of public policy which has been fought over for so long that everyone is pretty well dug in and to shift them is darned near impossible. It is very interesting that most of the significant changes in pesticides, apart from the growth in organic, is coming from the commercial sector. If you look at what the Co-op are doing, having a really adventurous policy of substituting less dangerous for more dangerous pesticides, for example, the sort of thinking that is going on in Marks & Spencer about what consumers might expect of them in the future in terms of residues, it is in that area, not in the agricultural or pesticide regulatory area, where you are seeing some innovation and some quite interesting thinking.

PROF. RAYNER: You also mention at the end of your written presentation that in some other countries pesticide regulators are specifically considering vulnerable groups. Could you dilate on

that and tell us where and what kinds of allowances they are making for vulnerable groups, or where we might get that information?

LORD MELCHETT: We could give you some more information about that. I cannot claim this is an area of my personal expertise but I know, for example, in America that there is a specific allowance built in for exposure to young children, babies, and so on. I know the ACP say a hundred times factor takes all that into account but it seems to take an awful lot of things into account.

THE CHAIRMAN: We hear your concerns about that, the hundred times factor.

PROF. RAYNER: If you could perhaps follow up and send us any information you have on practice elsewhere with respect to that first.

LORD MELCHETT: It is limited. I would not say there are any wonderful models.

DR. GRAHAM-BRYCE: May I just ask a follow-up, a very philosophical question in relation to that, and I think we take your point about the safety factor. It may well be, in fact it is almost certain, is it not, that among the population there are individuals who are peculiarly sensitive to anything, any chemical, including one might say rotenone, copper, or sulphur. How does society handle that in relation to regulation with a group of individuals who may be peculiarly sensitive? How do you regulate for them without imposing what might seem to be an unreasonable burden on the rest of society?

PROF. RAYNER: That clearly do not exist.

DR. GRAHAM-BRYCE: I am accepting they exist.

LORD MELCHETT: Are there not two groups? I must say, as Tom said, the last time I came before the Royal Commission we were involved with campaigning against the nuclear industry. It really surprised me that with regulation of pesticides there was no account taken of particularly vulnerable people, people with particularly high levels of routine exposure. So, safety measures, this is before you get to people who are exceptionally sensitive, there are people who will be routinely exposed. In the nuclear industry it was the person who ate lobster twice a week and lived on the northeast coast of Cumbria, and maybe worked at Sellafield. You have doses from three different sources, environmental, food, and occupational, and you have to limit discharges to make sure that that person is safe. There is no equivalent, so far as I can see, in pesticides regulation at all. Then for your particularly vulnerable person who is especially sensitive, uniquely sensitive, it seems to me that the requirements that have been urged on me, which we support, for prior notification and detailed information are at least a step towards protecting those people, if they know that they have such sensitivities.

DR. GRAHAM-BRYCE: It was the latter group I was particularly talking about, groups like pregnant mothers or the elderly (in which I am increasingly interested) are quite large groups.

LORD MELCHETT: Yes, but a pregnant mother who worked on apple-picking and who grew vegetables in her garden which she did not wash or peel and on which she used pesticides to grow them should be as protected as somebody living in the middle of London who washes and peels all her fruit.

DR. GRAHAM-BRYCE: But there is a strong exposure factor there, is there not?

PROF. HOSKINS: One of the things that have been suggested is buffer strips. I wondered where you came into this. Presumably, between something that you recognise as organic and the fields that are being sprayed you demand some sort of buffer strip. How big is that and how did you determine how big that should be?

LORD MELCHETT: The buffer between organic and non organic has to be either a physical barrier, like a hedge or a wood, or a road or something, or 20 metres.

PROF. HOSKINS: How do you determine 20 metres?

LORD MELCHETT: A combination of things. First of all, I think from the point of view of your inquiry it is worth bearing in mind that we are talking about spray, this is not a buffer zone designed to protect people from the spray itself, this is a buffer zone designed to reduce or hopefully eliminate the residue of the pesticide in the crop when it is finally eaten. It is a different sort of buffer zone designed for a different purpose.

PROF. HOSKINS: But if someone is living nearby then their garden is like this, presumably.

LORD MELCHETT: Yes, that is true. The buffer zone was designed with practicality in mind, particularly bearing in mind that organic farming for most of the last 50 years since chemical farming started used to be rightly described as a niche market with relatively very few farmers farming organically, and they were small slices of the market. That is changing quite rapidly now in Western Europe and North America, and elsewhere in the world. That was the history and this was what felt like a small and oppressed minority who were not in a position to say, "We want 100 metres or a 6-mile buffer zone," or anything like that. That was the political reality of the organic sector, we want to produce food organically which has no pesticides in it. On the whole, we are successfully doing that.

PROF. HOSKINS: So measurements have been made that 20 metres is sufficient?

LORD MELCHETT: Our own certification subsidiary tests for residues, the Food Standards Agency tests for residues, supermarkets test for residues. Sir John Cripps, not as I said earlier our greatest fan, has said that if people want to avoid pesticide residues one way of doing it is to eat organic food. The other ways of doing it he has not vouchsafed for us yet but nevertheless organic is one way of doing it. There have been quite big studies in the US, for example. The residues are ----

PROF. HOSKINS: So you suggest that 20 metres is sufficient for ----

LORD MELCHETT: No, I would not; that is a different thing. We would like to have much greater zones. The ideal from the organic farmer's point of view is to farm next to another organic farm.

PROF. HOSKINS: Yes, but you said you could not measure anything so.....

LORD MELCHETT: No, we said on the whole the residues in food, we on the whole avoid them. We have two areas where there are problems. First of all, there are environmental contaminants like dioxins and PCBs which cause significant problems, equal problems for us as they do others in the food industry. Organic food is not exempt from those, of course, and some of that is a legacy of

past pesticide use, and we do find residues from contamination from local farmers occasionally, but it is pretty occasional.

PROF. HOSKINS: What about this barrier? You have some design of barrier that is sufficient?

LORD MELCHETT: No, this would just be if there was a hedge or a wood, or a road, or something like that, you would not then need the additional 20 metres.

MS. AZEEZ: You cannot compare residues in food with exposure to neighbouring residues.

PROF. HOSKINS: It is one of the pathways through to the people who live there so they spray direct, but there is also what they have then in terms of their garden.

MS. AZEEZ: All conventional farms will be using chemicals but only about a third of food ends up with detectable residues in the food, yet if you were standing actually next to the crop while it was being sprayed you would be sprayed 100 per cent. The amount of residue that actually ends up in the food and being detected and possibly affecting us is quite different, and you cannot compare the two.

ROF HOSKINS: So you would say it means that any barrier strip should be at least 20 metres in terms of some neighbour?

LORD MELCHETT: No, if you have been asked to design a barrier to reduce the pesticide residues in food grown near a farm, then 20 metres might be something you could consider. If you have been asked to consider a barrier to protect somebody standing in a garden while the sprayer goes past, we would not suggest 20 metres or a hedge is going to be adequate. That is not what our barriers are designed to achieve. In any event, our barriers are not, in our view, adequate, they were designed in the real world where we wanted to encourage people to become organic farmers and not put impossible barriers in their place.

THE CHAIRMAN: Thank you. We have to finish in a moment so can I just come back to this whole question of the FSA and the PSD. In your new world and maybe what we may recommend, what would the PSD and the ACP look like then? How would it change? What will be the central ingredients to a more open structure?

LORD MELCHETT: I suppose the rationale of the argument we tried to put to you, there would be two things. First of all, the framework within which they operated will not be one which insisted, or which assumed I should say, that farming with pesticides was so important that nothing should be allowed to make it uneconomic. In other words, the organising principles should be, we are going to protect the public from these substances. They say a third. Prof. Coggon is saying, "I have heard one member of the ACP say at the open meeting in York recently that they do not consider the economics at all," and actually Prof. Coggon then corrected him and said, "Well, we do." Of course we all know that every regulator, every advisory committee, every Royal Commission, every politician, every NGO or sector body, we are all considering the issues we look at within a framework of what we think is necessary, and acceptable, and possible, and desirable, and so on. That is how all of us operate. I would like to see that shift in the case of pesticide regulation so that there is an acceptance that agricultural policy has changed, that it is not now a requirement for British agriculture to feed the nation or to produce more and more food, more and more cheaply, the drivers of policy since the Second World War, during and since. That is the first thing. The second thing would be the degree of openness. Clearly, openness about information and all that, all

advisory committees are moving in that direction, but crucially openness about uncertainty and unknowns.

PROF. EKINS: Could I ask you to draw out some of the potential implications of what you have just said in this context of agricultural reform. Do you think it is possible or even likely, now that there will be less and in the future no support for production, that farmers or landholders, because as you said they may not actually grow food which means they will not be farmers, will simply be supported because they have land? Do you think that a likely result is that we will in any case see much less conventional farming and much more specialised conventional farming in those crops, those few crops that the UK is actually good at growing? There are relatively few crops that the UK is globally competitive in growing, from my understanding, in conventional terms, leaving aside all the local manufacturers you were talking about earlier. So that one might imagine that the demand to use pesticides in the future is going to fall anyway because farmers will not find it is in their economic interest to grow food in that kind of way.

LORD MELCHETT: That is possible but the difficulty in predicting what is going to happen in agriculture is that this is not an industry based on rational economics, and never has been. Anybody who looks at the cost ----

PROF. EKINS: It sounds as if we have taken a step in that direction ----

LORD MELCHETT: The first example anyone looking at agriculture needs to think about is the return on capital. There is no return on capital in agriculture. If the economic rules which are applied to capital investment anywhere else in the economy applied to agriculture nobody would farm at all because of the value of land. That is the first thing. Land ownership and how land is managed are not driven either by economics or to the extent people asssume even by public policy. Many new organic farms are farms which people who have made money elsewhere in the City, or in business, have bought and which they then want to manage in a way which accords not with their view about how they make money but with their personal beliefs and their values. They want to produce food which is environmentally friendly, which is healthy, which is good for nature, and which provides an attractive countryside; all perfectly worthy objectives but not things determined either by the Ministry of Agriculture, Defra, or by the Common Agricultural Policy. That will continue to be faced. Now there is an equal and maybe even greater sector of agriculture which has a huge sort of supertanker force behind it still, both in this country and globally, which has been going since the War, and which is getting bigger and bigger and simpler and simpler. If you talk to farmers in North America about why GM crops have been popular, it is because, and I have had this conversation with people from Canada and the US, if you want to farm 20,000 or 30,000 acres with one manager and one set of machinery, and as small a labour force as possible, you have to be able to spray to suit you regardless of weather, the crop condition and crop growth. GM crops allow you to do that, herbicide tolerant crops allow you to do that, which you cannot do in non GM or it is more difficult. That sort of move to very large scale, very simple, highly mechanised, highly centralised operations is continuing in this country. There is a huge amount of money and capital, and industrial interest, and chemical interest, tied up in that and that is not independent of but will not be as affected by the decoupling and changing of that as people foresee. I think a lot of people say we will see a greater division. I think the hopeful sign in all of this from the Soil Association's perspective is that the organic market continues to grow in Western Europe, 10 per cent or more than 10 per cent in this country, the market for local organic food, avoiding the supermarkets and multiple retailers, is growing faster than the market overall, 16 per cent for the last two years now. There is a significant growth in people, and this is moving from the South East to the middle-class, across the country and through different income groups, to buying locally produced food where you

know the source, know the origin; people are seeing real differences in the quality of food and taste. If that continues to grow, I think we are in for a future where we will be producing food in the UK.

THE CHAIRMAN: Maybe we better end on that note. Gundula, do you want to say anything because you have been very patient with us?

MS. AZEEZ: There is one thing I would like to say. I think it would be wrong for this inquiry to overly focus on people with particular sensitivities.

THE CHAIRMAN: That is all we have been asked to address.

MS. AZEEZ: No, I do not think so, not from my understanding. I think there are people who are in particular circumstances, a group of people in particular circumstances, who are not medically..... I would not just worry about the 5 per cent of people in rural areas who live next to farms and who may have particular chemical sensitivity. In conventional farming you can use 350 chemicals at the farm stage, about 500 chemicals during food processing, and 95 per cent of that is not allowed in organic. We actually think these 800 chemicals are probably affecting all of our health to a significant degree; for example, with the fall in fertility and the rise in cancers. We do not have the scientific proof but we think there are big issues of public health generally about the use of chemicals. Whatever you were to recommend that would not just protect people with particular biological sensitivities but it would also protect, whether we are sure it is necessary or not, people generally, the general public health as well. I suppose we feel you can never prove the health effect of the environmental exposure of multiple chemicals probably ever adequately, but where you have a choice, where we do now with organic farming, and pushing agriculture more in that direction actually is not a luxury, we should not be still allowing or supporting chemical-based farming. We should not be gambling the public health in that way.

THE CHAIRMAN: Okay. We can continue a little over lunch.

DR. OWENS: Which is probably not organic!

THE CHAIRMAN: No. I think we have been mainly focused on not having fish for lunch! I do not think we have refocused on not having chemicals. Anyway, thank you very much for a very helpful session. We are in a rather focused area and, of course, we are asking some rather specific questions. I think this sort of background discussion has been very helpful. As you quite rightly pointed out at our open day in September, we did not ask that broad question and we have done this morning.