# TRANSPORT AND THE ENVIRONMENT COMMITTEE

Wednesday 20 September 2000
(*Morning*)

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## Wednesday 20 September 2000



## TRANSPORT AND THE ENVIRONMENT COMMITTEE
**21st Meeting 2000, Session 1**

**CONVENER**

*Mr Andy Kerr (East Kilbride) (Lab)

**DEPUTY CONVENER**

Nora Radcliffe (Gordon) LD)

**COMMITTEE MEMBERS**

*Helen Eadie (Dunfermline East) (Lab)
Linda Fabiani (Central Scotland) (SNP)
*Robin Harper (Lothians) (Green)
*Janis Hughes (Glasgow Rutherglen) (Lab)
Cathy Jamieson (Carrick, Cumnock and Doon Valley) (Lab)
Mr Kenny MacAskill (Lothians) (SNP)
*Des McNulty (Clydebank and Milngavie) (Lab)
Tavish Scott (Shetland) (LD)
*Mr Murray Tosh (South of Scotland) (Con)

*attended

**WITNESSES**

Jonathan Curtoys (RSPB Scotland)
Kevin Dunion (Friends of the Earth Scotland)
Dr Ulrich Loening (Retired Director of Centre for Human Ecology)
Duncan Orr-Ewing (RSPB Scotland)

**CLERK TO THE COMMITTEE**

Shelagh McKinlay

**SENIOR ASSISTANT CLERK**

Richard Walsh

**ASSISTANT CLERK**

Alastair Macfie

**LOCATION**

Committee Room 2

# Scottish Parliament

## Transport and the Environment Committee

*Wednesday 20 September 2000*

(*Morning*)

[THE CONVENER *opened the meeting in private at 09:20*]

09:35

*Meeting continued in public—*

**The Convener (Mr Andy Kerr):** I welcome everyone in the public gallery and Kevin Dunion, who has joined us this morning to give evidence on genetically modified organisms. I also welcome the press to the 21st meeting of the Transport and the Environment Committee this year.

We have received apologies from Tavish Scott and Linda Fabiani, who are at the Holyrood progress group meeting. We have also received apologies from Nora Radcliffe, and from Cathy Jamieson, who is at the Education, Culture and Sport Committee meeting. Kenny MacAskill will be late. We are, therefore, slightly depleted in numbers, but I am sure that we will get through the business in our usual proficient and professional manner.

## Genetically Modified Organisms

**The Convener:** The first item on our agenda is GMOs. We took evidence at our previous meeting from representatives of the Scottish Crop Research Institute. Today we will hear from Friends of the Earth Scotland, RSPB Scotland and Dr Ulrich Loening, who is a retired director of the Centre for Human Ecology.

As members are aware, Friends of the Earth Scotland submitted a petition—PE51—which led to our inquiry into GMOs. I thank Kevin Dunion for his written submission, which has been circulated to committee members. Kevin will make a short introductory statement, after which we will move on to a question-and-answer session.

**Kevin Dunion (Friends of the Earth Scotland):** I will try to keep this brief. I would like to let members know why we thought it necessary to submit our petition in the first place. Until the events of this week, GMOs were the No 1 environmental issue. They have attracted a lot of attention and concern from a broad spectrum of the public, many of whom are our members. Those people feel frustration about two things: their commonsense anxieties seem not to be addressed in Government or industry statements; and there seems to be no locus through which they can exert any influence over decisions to release GMOs into Scotland's environment. In the background paper that I submitted, I said why we think that there are gaps in advice and decision-making on the subject and why there is some scope for manoeuvre for the Scottish Parliament and the Scottish Executive to adopt a more robust approach to the precautionary principle and its implementation. If the Executive decides to follow Westminster policy, that decision should be justified by an analysis of the precautionary principle rather than by a statement that there is no alternative, which seems to have been the mantra so far.

When we submitted our petition in January, its purpose was to establish a forum and a locus so that people in Scotland could make representations and see clearly what advice was being given to the Scottish Executive and what its response was. Since that time, the Agriculture and Environment Biotechnology Commission for the United Kingdom has been established. That goes some way towards meeting our concerns at UK level, but we feel that the commission is not sufficient to respond to Scottish concerns and interests, because Scotland is insufficiently represented on it.

**Janis Hughes (Glasgow Rutherglen) (Lab):** What do you consider to be the potential environmental benefits and risks that are associated with growing GM crops?

**Kevin Dunion:** Since I first began to study the subject, the benefits of GMOs have been considerably inflated. The early commercial justifications for GMOs were quite modest. Among the first products was a tomato that was called the "flavour saver". The only claim that was made for it was that it gave a better flavour to tomato purée. A lot of research has also gone into growing genetically modified potatoes that will, because they fry better, make better potato crisps. Those claims are, at least, honest. However, claims for benefits that are a long way down the line—if they ever come at all—are dishonest. I refer to claims relating to GMOs such as biopharmaceuticals or vitamin-enriched staple foodstuffs for the third world. Those are not yet near the commercial markets. The claimed benefits are overblown and are made by people who adopt a moral stance although they are involved in a very commercial activity.

The risks that are associated with GMOs have been heard by the committee before. At this stage, we are concerned primarily about environmental risks. The use of herbicides on herbicide-resistant

crops might alter biodiversity if the herbicides are used at different times or are used more extensively. There might be an increase in weeds. We are especially concerned that pest-resistant products are close to coming on the market. There might also be a loss of efficacy—some natural pesticides that are used in agriculture might lose their potency through overuse.

Those are the primary environmental risks. Our main point is that it is not evident that the benefits outweigh the risks. Some balance-sheet accounting has to be done. It should not simply be presumed that the benefits are so good that we have no choice but to accept them.

**Janis Hughes:** Do you have evidence on the perceived environmental risks?

**Kevin Dunion:** We have to test for those risks. We are concerned that we are pursuing the commercialisation of GMOs without anticipating possible risks and without conducting research proactively to discover whether those risks exist in the laboratory or in real life. An accumulated body of evidence shows, for example, that when crops have pesticide resistance implanted in them, the fertility and lifespan of non-target species are also affected. The pests that are the intended targets are the foodstuffs of prey species and the prey species are being affected—that was not anticipated.

German research into bees—as yet unpublished, as I acknowledge in my paper—shows that GM components are passing into bacteria in the guts of bees, which should not happen. There has always been a concern that GM foodstuffs would act differently from normal foodstuffs. That subject requires further attention.

Are those risks so substantial that we would want to hold up the release of GMOs? If there are decisions about risk taking, the whole of society should be involved in those decisions—they should not be left to scientists.

**Janis Hughes:** Do you accept that no activity in life is risk-free? Seeking definitive proof that GMOs carry no risk whatever could be unrealistic.

**Kevin Dunion:** We have the comfort of the precautionary principle now. In justifying current Government policy, the minister has interpreted that principle in a way that we think is open to challenge. The precautionary principle requires a judgment on whether the risks are so substantial that we cannot carry on regardless of those risks. We should either take measures to mitigate those risks or withhold development until we have decided whether the risks are real or not.

Society should be involved in the discussion of risks, because that discussion is extremely important. Janis Hughes is right to say that no activity involves no risks. However, we have to ask whether risk is voluntary or involuntary. If I choose to expose myself to risk on a football field, I cannot complain if I get kicked. If, however, I walk down the street and somebody kicks me from out of nowhere, that is an assault.

We have to ask whether the risks are irretrievable. If things go wrong, can we undo the harm? That is extremely important—and in the case of GMOs, we say that we cannot undo the harm.

We also have to ask who benefits. Are the risks shared evenly? We say no—the companies that produce the crops will benefit, and profitably so, but the risks will be borne by consumers here and in the third world.

09:45

**The Convener:** We are familiar with the risk assessment process because we covered it at our previous meeting. We are also familiar with the precautionary principle because it was a big aspect of the committee's telecoms inquiry, as you are aware. I am trying to return to the evidence. We did not find a direct effect on health during our telecoms masts inquiry, but we proposed the adoption of the precautionary principle. What is the scope and weight of the evidence that suggests that we need to recommend the adoption of the precautionary principle, particularly in relation to the current crop trials?

**Kevin Dunion:** The crop trials are part of the Government's seeking to implement the precautionary principle. I accept that the trials are not commercial releases. The question has to be: do the crop trials compound the problem or alleviate it? To our mind there are aspects of the crop trials that compound the problem. We would like to have seen a risk assessment process that considered a wider range of risks than those that were considered when the field and farms trials came into play. For example, we all know that biodiversity was considered only relatively late in the risk assessment process, with the expansion of the Advisory Committee on Releases to the Environment.

We are not satisfied that "all appropriate measures"—which is what EC directive 90/220/EEC requires—rather than some, or the most reasonable, measures have been taken to avoid risk. We are not convinced by the Executive's reading of that directive, particularly in terms of harm to the environment, which includes harm to property. That has not been dealt with adequately in the trials. In particular, our submission draws attention to the potential commercial impact on organic farmers if their oil-seed rape is close to trial sites, and to the impact on beekeepers and the products of beekeeping,

such as honey that is made with contaminated pollen. The commercial value and reputation of those products would be affected. That falls entirely within the scope of the precautionary principle and the directive. That has not been addressed satisfactorily.

**Janis Hughes:** Are there circumstances in which Friends of the Earth would support the use of genetically modified crops?

**Kevin Dunion:** We have a clear position on that. We took a decision at board level and at our annual general meeting that we are not opposed in principle to GM crops. Some groups are, but we see that there are benefits to be gained from genetic modification in medical biotechnology. However, we take a more robust precautionary line on crops. We do not yet see benefits to society that would justify the risks. More laboratory work is required before the commercial release of crops.

**Helen Eadie (Dunfermline East) (Lab):** To what extent can the exclusion zones around GM crops reduce the environmental risk that is associated with those crops?

**Kevin Dunion:** Our feeling all along has been that the exclusion zones and separation distances have been insufficient to stop the risk of cross-pollination. I know that the committee has heard evidence from experts in the matter, some of whom sit on the Government committees that establish the separation zones. However, we point to the suggestion that the contaminated seed that came into Scotland recently was the result of cross-pollination that occurred in Canada at distances in excess of 4,000 m. There is a discrepancy when that is compared to the 100 m that we are talking about in the farm-scale trials in Scotland.

Secondly, Friends of the Earth in England has carried out research that established that contamination of hives occurred when they were more than 450 m away from the nearest GM crop. That suggests that commercial beekeepers will be affected by a separation distance of 100 m. Separation distances apply only between two crops that might have the capacity to cross-pollinate, but they do not take into account the interests of other organisms that might be affected.

**Helen Eadie:** What distance would you recommend for exclusion zones?

**Kevin Dunion:** The Soil Association is talking about exclusion zones in excess of 4,000 m to protect the reputation and uphold the viability of organic standards. Similarly, the Scottish Beekeepers Association is talking about exclusion zones of 6,000 m between GM crops and hives. The hives could be moved, but the question is whether the honey production would be viable. The separation distance of 100 m is inadequate.

**The Convener:** You appear to believe that the advice that is offered by existing advisory bodies is relevant equally to Scotland and other parts of the United Kingdom. Do you feel that the scientific and ethical questions in Scotland are the same as those that would be asked in the rest of the UK?

**Kevin Dunion:** That question is at the heart of our petition. From a scientific point of view, there is nothing particularly distinctive about Scottish circumstances. However, there might be economic and social differences. We need to be sure, for example, if we are talking about commercial releases of oil-seed rape, that we recognise the likely consequences to Scotland, which has a much higher proportion of oil-seed rape farming than England. For example, would it be possible to have more robust separation distances, given the broad swathe of Scottish agriculture that is given over to oil-seed rape? Large separation distances might not be possible because of contiguous farming in large areas of Scotland's countryside. In addition, what is the impact on crofting land? We must consider that. Although Scotland is not different scientifically from England, there might be economic differences.

Our fundamental point is that the Government has recognised that those issues relate to how we interpret the law, how we approach the issues ethically as a society and the risks that we are prepared to tolerate. The issues are not different in Scotland, but Scottish voices should be heard, given that responsibility for GM crops in Scotland is devolved.

If the Minister for Rural Affairs is to make decisions—and he has to take advice on the right thing to do—a Scottish body would be a competent sounding board for Scottish society. The new Agriculture and Environment Biotechnology Commission cannot be sensitive to expressions of Scottish interest on a devolved matter.

**The Convener:** That is fine. I think that you are saying that there are unique aspects to the Scottish countryside.

In your submission you say that you perceive "a lack of transparency", which is at the heart of some of your previous comments about

"the decision making processes, and the recognition and exercise of devolved powers."

Is there any further evidence to support that view, with regard to decisions that have been made? What alternative measures do you propose should be applied throughout the UK, given the EU regulatory framework?

**Kevin Dunion:** Lack of transparency is coming

to the fore more and more. First, the committee will be aware that Scottish Natural Heritage—which is part of the regulatory and advisory process—wrote a fortnight ago to Ross Finnie to express its lack of knowledge of that process. It said that the regulatory, advisory and decision-making processes were not transparent. That reflects the truth for everybody. It is an emperor's-new-clothes routine. Finally, somebody stood up and said, "I don't understand what is going on here." That is true of everybody.

Secondly, we are concerned about whether Scotland rubber-stamps decisions that are made elsewhere. In my submission, I draw particular attention to the court case that Friends of the Earth in England was involved in against the Minister for the Environment in England. The case was about a consent to grow autumn-sown oil-seed rape. That consent did not go through the proper regulatory processes. Friends of the Earth was successful in that challenge and the Minister for the Environment had to admit that the Government had, technically, acted illegally.

Exactly the same consent process was gone through in Scotland. So the question has to be: does Scotland have separate legal ministerial advice? Did the ministers in Scotland and England come to the same view independently, or did the minister in Scotland accept the assurances of the Department of the Environment, Transport and the Regions that the procedure was correct and follow it to the letter?

Unlike our colleagues in England, we cannot make a legal challenge to that. Unlike his counterpart in England, the Minister for Rural Affairs did not offer an apology or admit to an illegal act. He simply told groups such as Friends of the Earth that they should take him to court, knowing full well that they could not do that. That does not represent a transparent process of decision making.

The next area of concern, although it does not relate to a decision-making process, is the accidental contamination of crops in the past two years. Again, it appears that advice was not given to the Minister for Rural Affairs at the same time as it was given to the Minister of Agriculture, Fisheries and Food. Therefore, it is not clear whether Scotland is an equal partner in decision making or a subservient partner that is informed of decisions after the fact. There is much anxiety about the Government's delay in informing the Executive and the Executive's delay in informing farmers. Something could be done about the planting of the contaminated crop.

**The Convener:** Have you advised the Scottish Executive of any alternative, bearing in mind the European Union framework within which we must operate? Do you have a preferred option or model that would allow transparency and accountability?

**Kevin Dunion:** We have not advised the Scottish Executive of an alternative model, although we have raised a number of concerns with the Executive. Our petition was born out of frustration. We wanted the committee to take evidence as it is doing, and advise the Executive what the best system might be.

**Robin Harper (Lothians) (Green):** Can you expand on the statement in your submission, that the European Commission directive that governs the release of GMOs

"provides more scope for precautionary action than has been so far suggested"?

**Kevin Dunion:** As members know, the precautionary approach is not a scientifically resolved matter, but a matter of judgment. In Edinburgh earlier this year, I attended the Organisation for Economic Co-operation and Development conference on genetically modified foodstuffs. There was an interesting discussion between Sir John Krebs, the chairman of the Food Standards Agency and the head of the French food standards agency. We think that the French take a more rational approach to the precautionary principle. They operate a sliding scale of responses that is based on the plausibility of potential harm, but Britain is adopting an all-or-nothing approach. Either we demonstrate that there is a real and substantial risk or we have failed the precautionary test.

I draw the committee's attention to two things in EC directive 70/457 as amended by directive 98/95/EC. First, it mentions measures to avoid

"adverse effects on human health and the environment",

to which Ross Finnie and Susan Deacon have referred consistently to justify the trials and their decision not to inhibit the release of GMOs. When things have gone wrong, they have said that there have been no such adverse effects. However "adverse effects" encompasses the notion of harm to property. The issue of liability has not been addressed satisfactorily, as it would be if the precautionary principle were invoked.

Ross Finnie said that the question of liability should be tested in court and that it is not a matter for the Government. If that is the case, we are intrigued to know why the new Agriculture and Environment Biotechnology Commission has been asked to examine the issue of liability. Liability and harm to property must be addressed.

Secondly, my submission says that article 15(2)(c) has been added to directive 70/457, which has not yet been brought into force in UK law. The UK is in breach of the European directive, because it was supposed to come into force on 1 February 2000, so it cannot be said that

"all" appropriate measures have been taken. Article 15(2)(c) states that countries that have

"valid reasons for considering that the variety presents a risk for human health or the environment"

may prohibit the use of that variety, even if it is being used elsewhere in the European Union. We know from cases in Austria, Germany and France that specific varieties of GM maize have been banned, although they are used elsewhere in the European Union.

**Robin Harper:** In effect, you have answered my next question. You feel that we should be able to ban completely certain varieties of GM crops, if we are so minded.

**Kevin Dunion:** It is not open to us to impose a blanket ban and to say that we will have no GMOs in Scotland under any circumstances. Clearly, however, once article 15(2)(c) is transposed into UK law, we will have the right to ban a variety if we can supply a justification that meets the conditions that are set out in the article.

**Robin Harper:** On the precautionary principle, in questions to the Scottish Crop Research Institute, it transpired that no subsoil research is being conducted into the effects of planting GMOs. Do you regard that as a remarkable omission? Are all the right questions being asked about the planting of trial crops?

10:00

**Kevin Dunion:** It is a remarkable omission that the likely and potential risks that could be anticipated from GMOs and the altered agricultural forms that they might give rise to have not been listed. For example, in the case of herbicide resistant crops, there has been some evidence of impacts on earthworms of altered agricultural practices. Subsoil testing should have been part of the tests.

The public have formed the view that a rigorous examination of the trial crops is taking place, but that is not the case. There is the presumption of substantial equivalence. Primarily, the trials are about how the crops perform commercially—such trials are conducted for any new crop, whether it is GM or not. It takes between 12 and 15 years to bring a new variety of potato to the market. The potential risks to society of GMOs have not been catalogued and an adequate testing framework has not been put in place.

**Des McNulty (Clydebank and Milngavie) (Lab):** I want to ask about contamination, in the context of the Advanta incident. What level of risk is associated with the recent accidental contamination of conventional crops by GM crops?

**Kevin Dunion:** It is hard to give you a view of the level of risk because, as you say, the contamination was accidental and, as we have not been told precisely where the planting took place, we do not know what the possibility is of further contamination. Although the crop was male sterile, it could be pollinated. The subsequent generation of that crop would be fertile and could express pollen. Therefore, we need to identify where the seed was distributed and grown and we need to know whether there has been any analysis of the level of volunteer crops that have come through in the second year.

If one travels through the Scottish countryside, one will see fields of a crop—of one species of root vegetable, for example—in which significant amounts of oil-seed rape are growing. One will also see lots of oil-seed rape on the verges. They are the volunteers from the previous year's crops. All those plants will produce pollen and have the capacity to contaminate conventional and organic oil-seed rape that is grown commercially. We cannot know the level of risk until the benchmark work is done.

**Des McNulty:** Could Scottish ministers have done more to minimise the environmental risks that are associated with accidental contamination?

**Kevin Dunion:** It is not clear why contamination occurred in the first place. To that extent, we cannot hold ministers responsible for poor practices or accidents that took place thousands of miles away in Canada. However, it is precisely that kind of outcome that environmentalists always presume. We say that even with the best will in the world, if something can go wrong, it will. It appears that in Canada there was an attempt to avoid such contamination.

We feel that if Scottish ministers had been genuine partners in decision making, they would have been alerted at the same time as their English colleagues. They would have been entitled to assess whether action should have been taken to order the destruction of the crops, rather than waiting until a decision had been taken further down the line by the Ministry of Agriculture, Fisheries and Food and DETR.

**The Convener:** At our previous meeting, the learned doctors gave us an insight into the process that takes place—not the general perception on risk assessment and benefits to society, but the very specific circumstances of one trial, one crop type and one seed type. Are you familiar with that process? How confident are you about how the scientists carry out their part of the process?

**Kevin Dunion:** Nothing we say in our evidence should be thought to impugn the reputation of those scientists. In fact, in response to outside pressure, the scientific framework has been made more robust. There has been more caution about

what is let through. One of the witnesses said that no application gets through unscathed—some amendment is always made to it. The process is being tightened.

On a case-by-case approach, the framework is reasonable and I would not want to substitute it with a Scottish framework. We are focusing on the citizen end of it. The public wants some locus for their voice to be heard and for some Scottish expression of opinion on a matter that is devolved to Scotland.

**The Convener:** If there are no other questions, I thank you for an interesting session this morning.

I ask Duncan Orr-Ewing to join us at the table.

**Duncan Orr-Ewing (RSPB Scotland):** I want to make it clear at the outset that two of us are here representing the RSPB. This is my colleague Jonathan Curtoys.

**The Convener:** It would be useful if you would tell us your role and, if you desire, make a short opening statement.

**Duncan Orr-Ewing:** I will give a brief opening statement. I am head of land use policy at RSPB Scotland and am based in Edinburgh. Jonathan is an agriculture policy officer for the RSPB and is based at our main office in Bedfordshire. I am afraid that Dr David Gibbons, who is our representative on the ACRE steering committee that is overseeing the crop trials, was unavailable to attend. We will try to answer as many questions as we can, but we must make it clear that we are not geneticists or lawyers.

RSPB Scotland's angle on this is our concern about the impact of GM crops on farmland biodiversity. We are especially concerned that the expansion of GM crops and the use of GM crops in the landscape will exacerbate an already serious problem in relation to the decline in farmland biodiversity.

The research we have undertaken over a number of years shows that declines in farmland birds are serious and have been caused by the intensification and specialisation of agriculture, which in the main has been supported by common agricultural policy subsidies. We are not blaming individual farmers for those declines, but we are concerned about the agricultural system that is causing the declines in farmland birds.

In 1997-98, RSPB Scotland called for a moratorium on the release of GM crops until more research had been undertaken on the impacts. That included the biodiversity impacts of GM crops. As you are all aware, the UK Government considered a moratorium illegal and field trials were allowed to proceed. We decided to support those field trials, on the basis that it was better to be involved than to be on the edge of the situation. We were concerned that if crop trials went ahead, a full analysis should be made of the impacts on biodiversity. You are aware that the research has been expanded to cover biodiversity impacts. We are pleased about that.

Our position is clear. If the crop trials of particular types of GMOs are shown to have adverse impacts on farmland biodiversity, we will seek a ban on the further release and the commercial expansion of those crops.

In Scotland, we are concerned that Scottish ministers should be well briefed on GM issues. To reiterate what Kevin Dunion said, special Scottish agricultural circumstances, including issues such as branding in relation to Scotland, should be taken on board. Scotland prides itself in trading on a clean environment. That is important, especially to the crofting industry, which Kevin also mentioned.

Our main recommendation would be that the Transport and the Environment Committee produce a paper that identifies the Scotland-specific issues that should be dealt with. We would not recommend that Scotland try to undertake its own research on GM crops, because that needs to be well resourced. A UK framework has been set up to consider biodiversity issues. That has big funding implications and we are anxious that if the research is to be done properly, it should be well resourced.

There may be a case for a Scottish advisory body to oversee crop trials in Scotland, but if there were to be such a body, it might be better if it considers the socio-economic impacts of GM crops rather than the research angles. Our written submission expands on my comments.

**The Convener:** Thank you for those opening remarks. If members ask a question that you cannot answer, we can get a written response from you.

**Janis Hughes:** Given your concerns about biodiversity, do you consider that the potential benefits of growing GM crops outweigh the risks?

**Duncan Orr-Ewing:** That is being considered at the moment in the crop trials.

**Jonathan Curtoys (RSPB Scotland):** Our concerns about the GM crops that are coming through at the moment are based on scientific evidence, not about the GM crops but about the management of those crops. However, we recognise that the crops could have some benefits. The purpose of the farm-scale trials is to find out where the benefits lie. We might see reduced herbicide usage, but if we do not see reduced impacts on biodiversity, we would consider that a problem. With any technology there are possible benefits and possible risks. The

farm-scale trials are the best way of summing up the overall issues.

**Duncan Orr-Ewing:** It would be fair to say that our main concerns in relation to GMOs stem not only from the technology but from the management of crops. That applies equally to non-GM crops.

**Janis Hughes:** But you have not concluded that the benefits would outweigh the risks?

**Jonathan Curtoys:** No.

**Janis Hughes:** Given that nothing in life is free of risk, could seeking definitive proof that there is no risk be seen as unrealistic?

**Duncan Orr-Ewing:** That is a difficult one. You might say that I am sitting on the fence, but we retain an open mind until we see the results of the crop trials. If the trials show significant detriment to biodiversity, we will shout as loudly as anybody for bans on those crop types.

**Helen Eadie:** Why did the RSPB decide to take a seat on the steering committee overseeing farm-scale trials?

10:15

**Duncan Orr-Ewing:** Jonathan Curtoys will tell you more about that in a minute, but we felt that, once a moratorium had been ruled as illegal, it was better to seek to influence the process from within. I came in on the tail-end of the previous discussion, but in certain circumstances we find it difficult to get a clear view of what is happening. We thought that we would get the clearest view if we worked in the system. Now that we have done so, that remains our view.

**Jonathan Curtoys:** I do not have much to add, except to say that we wanted to bring our expertise, to ensure that the right things were being considered from our point of view.

**Helen Eadie:** To what extent do you think that the exclusion zones around GM crops reduce the risk to the environment and to bird-life?

**Jonathan Curtoys:** The exclusion zones are relatively unimportant to bird-life, because birds move around. That also applies, although rather less so, to bees, for example. The situation is almost impossible to control.

From a bird-life point of view, we are not particularly concerned about the crops involved in the trials that are being conducted at present. The real problem for us is the way in which the crops are managed. Crop management is our principal concern. Exclusion zones do not make a difference to bird-life.

**Helen Eadie:** Are you implying that the RSPB does not have a view on exclusion zones?

**Jonathan Curtoys:** We have a view, which is that cross-pollination and the impact on organic farming must be minimised as far as possible. We want to ensure that other businesses are not affected by the trials.

As Duncan Orr-Ewing said, we are not experts on exclusion zones, but our views are being fed into the Government through our involvement in the trials, to ensure that the socio-economic effects of the trials are minimised as far as possible.

**Helen Eadie:** Would you recommend a specific distance for the exclusion zones?

**Jonathan Curtoys:** We have not recommended a specific distance, as we relied on the experts to consider that point. We said that we would like the exclusion zones to be considered and expanded to whatever distance the experts think is needed.

**Helen Eadie:** To an extent, you have answered my final question. Do you think that the exclusion zones around GM crops in Scotland are adequate?

**Jonathan Curtoys:** We are waiting to hear what Westminster ministers say about the examination of separation distances that has been conducted.

**The Convener:** I will ask a similar question to the question I put to Kevin Dunion. I will move away from the generic argument and back to the specific process that was outlined at our previous meeting on the selection of sites, crops, seeds to be used and exclusion zones. From your position on the steering group, are you happy with the risk assessments that have been carried out for individual crop trials?

**Duncan Orr-Ewing:** We are happy with the process. The advice that we get from our scientists who sit on ACRE is that the process seems to be fairly rigorous and we are happy with what is happening.

It is important that I say that we are also happy with the geographical spread of the crop trials in Scotland. If a thorough scientific evaluation is to be made of the impact of GM crops, there must be sites in Scotland in order to take into account our climate and topography.

**Jonathan Curtoys:** We became concerned about GM crops partly because we felt that the risk assessments did not cover the biodiversity issues—the indirect, or wider, impact of the crops—that were of particular concern to us.

For example, initially, when ACRE considered the safety of a GM crop, it would consider cross-pollination, outcrossing, toxicity and so on. The Pesticides Safety Directorate, which is an executive agency under MAFF, would consider the herbicide, and the toxicity of that herbicide, to be

used on the crop. However, there was a hole in the process, in relation to the effect of using the herbicide on the crop, as that issue, which is of particular concern to us, was not being examined.

The point of holding farm-scale trials is to fill a hole in the regulatory process. We want that wider examination of GM crops to be built into the regulatory process in future. A clear gap existed, but it has been plugged so far.

**Robin Harper:** Do you think that there is a need to change the current advisory framework, to take into account specifically Scottish concerns?

**Duncan Orr-Ewing:** That is for you to decide, but it is our view that it is important for specifically Scottish issues to be taken on board. We draw attention to crofting in particular, as it has significant environmental benefits. As an organisation, the RSPB has been very supportive of crofting.

We are examining the situation in relation to Scottish agriculture, on which the Executive is consulting at present. Industries such as crofting have the potential for niche, or green, marketing opportunities. We are concerned to ensure that such opportunities in the Scottish context are not compromised by whatever happens in relation to GM crops.

At present, the UK minister represents the UK in negotiations in Brussels and elsewhere and it is essential that Scottish ministers are aware of what is going on in relation to the scientific overview of the crop trials. It is also essential that they are aware of what is happening in Scotland and that they are in a position to be able to feed Scottish views to the UK minister, who might be negotiating in Brussels, at the World Trade Organisation, or wherever.

**Robin Harper:** Are you indicating that RSPB policy on GMO releases in Scotland differs, or could differ, from its policy on UK releases?

**Duncan Orr-Ewing:** It could differ.

**Robin Harper:** Does it differ at present?

**Duncan Orr-Ewing:** I am probably not qualified to answer that question.

**Robin Harper:** Is there a role for the general public in deciding whether individual GM crop trials should go ahead?

**Duncan Orr-Ewing:** Yes. We would say that the role of the general public is important. We hope that the issues are consulted upon in the normal way.

**Robin Harper:** Would you expand on the environmental implications for conventional and organic farmers in Scotland of the possible spread of herbicide-tolerant crops?

**Jonathan Curtoys:** Would you repeat the question?

**Robin Harper:** What do you believe are the environmental implications of the possible spread of herbicide-tolerant crops?

**Jonathan Curtoys:** We are concerned that herbicide-tolerant crops will become ever more weed-free. Weeds, and the insects that are associated with them, form the basis of the food chain for much of our wildlife. Most of our countryside is farmed in some way and birds depend on that land for food. The problem is that intensification of agriculture has gone on for the past 40 years. We are concerned that herbicide-tolerant crops may be a further progression of the intensification of agriculture and result in the loss of food sources for birds in the countryside. That is our main worry about herbicide-tolerant crops.

Members may be aware of a piece of research from the University of East Anglia, which modelled the impact of the loss of weed species on the bird population of the skylark and specifically examined herbicide-tolerant crops. It was interesting to note the model's prediction that, in farmland where intensive farming practices were already taking place, herbicide-tolerant crops might not have an impact. However, in crops where there were plenty of weeds and where farmers might have problems clearing out those weeds, herbicide-tolerant crops would have a significant impact. That could be relevant to Scotland, where there are a lot of weedy, or weedier, crops—fodder crops in particular. That would cause us great concern, as the research suggests that there would be a significant impact on bird populations.

**Robin Harper:** I will pick up on your earlier comments on plugging gaps in the research. To your knowledge, does the research still contain gaps that you would like to plug?

**Jonathan Curtoys:** We do not think so. Initially, we were concerned that gene flow was not being studied as part of the trials, for example. Through our involvement, gene flow is now being studied further as part of the farm-scale trials, although we were not wholly responsible for that decision. We also talked about conducting some kind of bird and invertebrate monitoring within the farm-scale trials. Again, that has been done. You could ask Dr Gibbons if you want, but, as far as we are aware, nothing is missing from the trials.

**Des McNulty:** You said that it is important that Scottish ministers are aware of what is going on in Brussels. Are Scottish interests adequately taken into account when decisions to permit a GM release are made in Europe? What evidence is there to support your answer?

**Duncan Orr-Ewing:** I am not sure that I am qualified to answer that question, as I do not know

the mechanics of the way in which the Executive interacts with Brussels. However, we are concerned that a full evaluation of impacts is being undertaken, and that Scottish ministers are aware of what is going on and are in a position to input Scottish views into the system.

**Des McNulty:** Should member states be able to impose a complete ban on the cultivation of specific GM crops?

**Duncan Orr-Ewing:** That is perhaps a legal issue. I am sorry to have to sit on the fence, but that is a difficult question for us to answer. We are aware that certain areas within countries, such as the Basque area in Spain, have made the decision to ban GM crops.

**Des McNulty:** Is the quality of scientific evidence that is available, which proves that trials are harmful to the environment, sufficient to allow a member state to make such a robust decision?

**Jonathan Curtoys:** As Duncan Orr-Ewing said, there is not sufficient evidence. That is the view of the UK Government, which is why we are involved with the trials. If the trials showed that the herbicide-tolerant crops were impacting significantly on the environment, we would call for a ban. Michael Meacher has said that the Government will ban crops that are seen to be damaging from the farm-scale trials.

**The Convener:** Let us consider briefly the Advanta incident. What are your perceptions of that? What level of environmental risk do you consider to be associated with the recent accidental contamination of conventional crops?

**Duncan Orr-Ewing:** We were thrown into that situation. As part of our approach to trying to save farmland birds in certain parts of Scotland, we have been involved in sowing sacrificial crops on RSPB reserves and paying farmers in the countryside to sow sacrificial crops. We discovered, to our dismay, that one of the crop varieties that we were using on our reserves and giving to other farmers to sow as sacrificial crops was the Advanta mix. We were very disappointed to find that an escape of GMs into the environment could happen so easily. It was obviously illegal under the crop trial process.

Our immediate reaction—which may have been a knee-jerk reaction—was to plough the crops into the ground. We were disappointed, as we had been trying to help farmland birds, yet we were inadvertently getting involved in something that we would not have wanted to do. The advice that we got at the time, from our people who were involved with ACRE, was that the environmental risks of a release were pretty low, as there was only a low percentage of GM seed in the mix.

**Jonathan Curtoys:** As we said earlier, our concerns are over the way in which herbicide-tolerant crops are managed; that is where the main environmental risks lie, particularly in the use of the herbicide on the crop. As it had not got to that stage, the risk was minimised.

**Duncan Orr-Ewing:** When we discovered GM crops on our reserves and on other farmers' lands, we were so concerned that we ploughed the crops into the ground before they flowered. Most of the crops that we were involved with were oil-seed rape and were sown in northern areas, such as Orkney and the Grampian region. They had not flowered, but we decided to plough them in immediately.

**The Convener:** In advance of any reports or information that you will receive about the Advanta release, have the Scottish ministers done any more to minimise the environmental risks associated with that release?

10:30

**Duncan Orr-Ewing:** I cannot answer that question. Once the release had occurred, we were extremely concerned that the mechanisms were not in place to deal with the situation. When we asked what we had to do, we got no sound advice from the Scottish Executive rural affairs department. In fact, we felt that people in that department were running around asking the same question. There should be a mechanism in place to guide the situation if such releases happen in future.

**Jonathan Curtoys:** The evidence from the Scottish Crop Research Institute shows that it was in the same situation: it heard about the problem through the media, as we did.

**The Convener:** There should be some procedures to deal with such situations.

**Jonathan Curtoys:** Yes.

**Duncan Orr-Ewing:** We are basing our view on practical experience. A lot of farmers who talked to us at that time were asking exactly the same questions that we were asking.

**Jonathan Curtoys:** As a big organisation, we were much more likely to be informed about how to handle the situation. It must have been very concerning for the individual farmers.

**The Convener:** That was my final question. I thank you both for coming along to speak to us. That has been a very useful session.

As Duncan and Jonathan depart, I invite Dr Ulrich Loening to join us. Dr Loening, I note from your submission that you have been growing organic vegetables for 50 years.

**Dr Ulrich Loening (Retired Director of Centre**

**for Human Ecology):** Yes. That submission has been circulated.

**The Convener:** I must say that you are looking well for it.

**Dr Loening:** Thank you.

**The Convener:** We will try to keep this session as informal as we can. I invite you to make an opening statement.

**Dr Loening:** Thank you very much. I am not sure what has been circulated. I sent in a rather long and unwieldy paper, which was not written for the general public. A shorter, more easily digested version, which I shall submit at a later date, is in preparation. The points that I shall make are essentially contained in that paper. I also submitted a two-page e-mail document a few days ago, which you may not have received. I shall run through that in my opening statement, if that would be useful.

**The Convener:** We have copies of both those documents.

**Dr Loening:** I shall highlight the main points and try to relate them to the previous evidence.

My background is in molecular biology; I spent many years researching closely related fields and making technical improvements. I was also the director of the Centre for Human Ecology. I am therefore in a somewhat mixed position and I hope that I can use my expertise in biochemistry and molecular biology in a wider perspective.

I would like to highlight the issue that Mr MacAskill raised—it was mentioned in a different context this morning—on whether the Scottish farming industry wants to market itself as a brand of pure and natural products. Dr Robinson, from the SCRI, replied to Mr MacAskill:

> "That is not a scientific risk; it is an economic risk or a risk to the public perception."—[*Official Report*, *Transport and the Environment Committee*, 6 September 2000; c 920.]

That is inadequate, as my long, cumbersome paper makes clear. There is a lot of scientific background to the ecology of how agriculture works.

We come up against the fundamental issue that our two friends from the RSPB just raised. Agriculture has always involved some abuse of the environment. It has reduced the diversity both of itself—latterly—and of the wider environment, including bird life. Economic control of agriculture is increasingly in the hands of a few seed companies. At all levels, agriculture has been reducing diversity. We now need to ask ourselves whether GM crops are one more huge step in that direction.

In the first paragraph of my submission, I set out two conflicting visions. The first is of an agriculture based on a rather narrow science, such as nitrogen fertilisers, and on a reduction in diversity. That is set against a more organic approach—I use the word "organic" in the wider sense, rather than the Soil Association sense—based on seeing how the ecosphere works and tying in the complexity of agriculture more closely with natural processes. I see those visions as polar opposites. We are faced by a fundamental question, which, for the most part, we are not tackling.

In my brief paper, I suggest three levels of inquiry as a way of tackling that question. The first is the case-by-case analysis of immediate environmental impacts and health effects, which we have discussed this morning. That needs to be done and bodies such as ACRE are doing a very good job on it. I have examined much of the work that it has done and have met its chairman.

The second involves a broader, long-term examination of the technical development of agriculture generally—something that the representatives of the RSPB mentioned. How is that affecting biodiversity? On the whole, that issue has not been examined. There has been some research into the effects of different sorts of agriculture on biodiversity and there are various experimental results that show why birds have decreased in number and species variety. However, we have not taken that further with GM crops. The trials that are under way cannot answer questions at that level or determine whether GM is another big step towards reducing biodiversity. They are only three-year trials, and even the largest of them are taking place on a farm scale only. The issue is much bigger than that, but time is not available to consider it.

At the third level is the biggest type of inquiry. It involves consideration of the extent to which the GM idea is compatible with a more organic approach to agriculture, which is gaining ground fast because of improved understanding of ecological matters. There is an economic and research danger—it has already been realised to some extent—that, if the GM path is followed vigorously, alternative strategies involving more diversity will be neglected. That is what happened as a result of the more toxic pesticide and fertiliser research of earlier years.

I apologise for the fact that, although I mentioned ACRE, the Food Standards Agency and the Advisory Committee on Novel Foods and Processes in my submission, I left out the new Agriculture and Environment Biotechnology Commission, whose first meeting I missed, because I was ill. The commission should be included alongside ACRE, the FSA and the ACNFP.

I thought that it would be useful to list a few

short case studies as an illustration of the problems that we face. We need some sort of research or advisory body to do something about those. Under the heading "Spread and Contamination", I picked the example of Advanta, making the point that contamination is inevitable at every stage—from the pollen, through the seed, to distribution and marketing. One need only consider the number of products on supermarket shelves that state "This may contain traces of materials from nuts" when the product has nothing to do with nuts. Things cannot be kept separate. If GM cropping continues to grow worldwide—and it is already very large in America—there is zero hope of any sort of separation. We need to face up to the nitty-gritty of that.

From my limited knowledge, I do not believe that GM crops necessarily pose a health risk to the human population. In general, I would not mind eating GM potatoes, wheat or bread. However, Dr Pusztai's work at the Rowett Research Institute showed that there are real difficulties. He showed that one of the two GM potato varieties that he used was not equivalent to its parent—the potato variety Desiree. It differed in its nutritional content and in a number of more subtle contents, which are more difficult to measure, although he measured half a dozen of them. The amounts and activities of tripsin inhibitor, for example, which most plants contain, were different.

Under those conditions, one would expect there to be health effects. Those are due not to the GM component—probably—but to the mere fact that the product is GM. In contrast to what the industry says, the gene that is chosen for insertion goes into the chromosomes at random and may upset the chromosome arrangements in the developing embryo. The Desiree potatoes in Dr Pusztai's experiment were probably examples of that. In subtle ways, and in this case also in gross ways, the product had changed. I feel very strongly that Scotland has lost a rather good laboratory as a result of the panic closure of Pusztai's lab. That is very serious and could become more so.

On the question of resistance, I should say first that that is the wrong word for what is taking place. The plants into which Bt genes are inserted are not resistant, but poisonous. It is very common in nature for plants to contain a poison. However, that is only one of many ways in which plants are resistant to pests. I resent the scientific inexactitude of using the word "resistance" when poison is meant. If one inserts the Bt poison into four or five crops, as has been done, and grows them over large areas, there is no better way to create resistance among the pests. It is certain to happen; if one were to design an experiment to bring that about, that is how one would do it. We need to see what is being done from the perspective of how useful it is. It is like over-using antibiotics, which has led to resistance all over the world. It prevents the sustainable use of the same bacterium as a pesticide that has a very short life and is not present in every tissue of every plant all the time, as this one is. If one looks more than two or three years ahead, the benefits of inserting this gene are almost zero.

The GM industry claims that it can feed the world better. Feeding the world is a gigantic problem. At the moment, Europe is very rich in food, so we tend to have a distorted view of the magnitude of feeding the world. I do not say this in my paper, but Europe is not overproducing. We have mountains and lakes of wine, wheat, butter, milk and so on, but that is due to ransacking a large percentage of the rest of the world and importing agricultural produce. We need to keep that in perspective. It is estimated that 15 to 18 per cent of European agricultural land is not in Europe, but in the third world. A further percentage is in Canada, north America and Australia.

10:45

In considering answers to the problem, I should point out first that genetic engineers are not plant breeders. Plant breeding has done far more than anything else for crop yields over the past 100 years or so. For example, the international maize and wheat improvement centre—CIMMYT is the acronym of its name in Spanish—has used sophisticated breeding techniques to produce a new variety of maize that better withstands drought conditions. The Rockefeller Foundation has been promoting the production of golden rice. One must ask whether that is valuable. If 100 million Indians are going blind and dying, we need something to supply the vitamin A that is lacking in their diet. However, wholegrain rice contains vitamin A, as do greens. If they choose to eat white rice, that is their choice. There should not be a problem and there is no call for GM. The problem of how to feed the world is what should be tackled.

The questions that need to be asked relate not only to health and safety, environment and ethical issues; we must ask whether GM cropping is beneficial to or damages agriculture. Is it another step in the current direction of agriculture, against which there is a lot of opposition?

**Janis Hughes:** I would like to ask about the environmental risks of growing GM crops. In your weighty submission, you conclude that public opposition to GMOs is based on "sound intuition". Why did you choose that phrase?

**Dr Loening:** As it happens, almost concurrently and unbeknown to me, a project by the University of Sussex and the University of Lancaster sponsored by the Economic and Social Research

Council came to exactly that conclusion and used almost the same phrase. I believe the public intuition to be correct, but for the wrong reasons. Health is not the major issue; the bigger issue is the movement towards diminishing diversity and the creation of ever-bigger mono-cultures, both on the ground and financially and structurally. The study was parallel to my findings—although I must say that it had good funding, whereas I worked at home.

**Janis Hughes:** How do you limit the influence of intuition? Could it not be seen as flying in the face of progress?

**Dr Loening:** No. It is a good antidote to exaggerated and rather narrow scientific claims. As a narrow scientist, I am allowed to say that. One must consider the history of the science of nutritional inputs, such as vitamins, fibre and types of fat. In general, public perception has been ahead of the science, which has followed behind and confirmed that perception. There have been public perceptions that were totally wrong, but there have also been scientific perceptions that were totally wrong, such as spinach being good for people. The basis of that assumption was incorrect; spinach may be good, but not for the reasons that were published in the 1930s.

**Janis Hughes:** What are the potential environmental benefits and risks associated with growing GM crops? Are there any circumstances in which you would support their use?

**Dr Loening:** I might support the use of a GM crop that could do a specific thing—for example, a breed of insect-resistant wheat or barley, if it were possible to breed—and that became one of many varieties. There might conceivably be a place for a GM crop through which agriculture could promote diverse technology—just because a crop is GM does not necessarily mean that it is bad. However, GM does something that has never been done before—it puts a strange gene into a crop plant that could not get that gene in any other way. There are technical arguments against doing it, including the example of Pusztai's potatoes, in which the product that was created was not the one that was intended.

However, such considerations are not the driving force of the industry. We see that in those countries that have taken on GM: 60 per cent of maize in the US comes from one or two GM varieties that are resistant to the borer insect. I do not see any scope for GM on a large scale, because it would narrow agriculture, leading to a loss of diversity in all respects.

**Helen Eadie:** You state that farm-scale trials are inadequate to the task and cannot contribute much to a rational debate. Could you explain that?

**Dr Loening:** Farm-scale trials can help to answer particular questions. They can help us in finding out the amount of weed growth in the conditions in which the crop is grown—that could apply, for example, to the current crop of herbicide-resistant oil-seed rape and a maize crop that might also be introduced in Scotland. One can find out whether there is an immediate effect on the ground using such practices. Some of those effects are being studied.

One can also consider the potential spread of the pollen and cross-infection to wild or other rape crops. Much is known about that, although it was not mentioned this morning—indeed, it is not often mentioned.

Helen Eadie asked about the distance between crops. Different crops behave differently in the way in which they are pollinated. Barley does not cross-pollinate at a distance of 4 m or 5 m, whereas rape, which is spread by insects, might pollinate across 4 km or 5 km. One should consider that because, clearly, for rape the danger of cross-contamination is high. That needs to be investigated.

However, farm-scale trials will not tell us what effects there could be on the way in which the community will conduct its agricultural activity if the GM crop is widespread and makes up a large percentage of the total growth. In principle, that cannot be answered by a small-scale crop trial. My second level of concern is not answered, nor is the third level, about socio-economic effects.

**Helen Eadie:** To some extent you have already answered my next question, but perhaps I can ask you to expand your points. Given that the farm-scale trials are under way, to what extent do exclusion zones around GM crops reduce environmental risk?

**Dr Loening:** They must reduce that risk, including through the pollen spread. Furthermore, the volunteer crop that will come up next year, which is longer term and has a slower spread, should also be examined. The following year a few seeds will fall only a dozen yards away from the crop; they will grow and seed and the next year they will fall another 20 yards away, and so on. One needs an exclusion zone that is big enough to contain the volunteer crop, not just the pollen.

There is a case for an exclusion zone to ensure that the overall effects of that sort of farming can be observed more clearly than if the crop were immediately adjacent to other crops. Exclusion zones are vital. If, on the basis of tests, permission were granted to grow a crop commercially, exclusion zones would disappear, as almost by definition it is not possible to have exclusion zones for commercial crops that are scattered. If the exclusion zone is considered important for the crop's acceptance, that fact effectively means that

the crop cannot be accepted.

**Helen Eadie:** The $64,000 question is: what do you think would be an adequate exclusion zone?

**Dr Loening:** I would go along with several kilometres for oil-seed rape and I would be content with much less for barley—down to 50 m or 100 m.

**Robin Harper:** My question follows on from that. Do you think that organic standards for wind and insect-pollinated crops can be maintained while genetically engineered varieties of the same crops are cultivated?

**Dr Loening:** No is the simple answer, for an interesting biological reason. Maize is the wind-pollinated crop that causes serious concern and that led to destruction of crops in England. It has been argued that if people who grow maize want to grow organic maize, which is then cross-pollinated by GM maize, the bulk of the maize flour will not be contaminated, because it is part of the parent plant—but the embryo will be contaminated. The next generation—and, crucially for organic people, the wholemeal part of the crop—is affected. That is serious, even if the organic farm does not keep its own seed.

**Robin Harper:** In your submission, you say that the questions about whether and how to take on a new technology that is certain to have far-reaching consequences have been missing from the debate To an extent, you have begun to answer those questions today. What do we need to do to refocus the debate?

**Dr Loening:** First, we need wide public participation and understanding. That needs to include agricultural policy rather than just a discussion of what is technically good and bad. That is a short version of the answer that I gave earlier.

The parallel with nuclear power, which led to huge demonstrations 25 years ago, is striking. In a sense, the demonstrators have been proved right: nuclear power is uneconomic, it continues to be dangerous and the problem of waste systems has not been solved. This is probably the first time in the development of any large technology that such a decision has had to be taken.

To take a different perspective from the traumatic nuclear one, one might consider the introduction of the motor car. If we were to do that again, would we do it in the same way? At the start, there were demonstrations against the car and there was a law requiring a man with a red flag to keep the car going slowly—that is the equivalent of the crop trials. Nevertheless, we went ahead and had an absurd system of cars driving in opposite directions within a few millimetres of each other on the same road, instead of making the whole transport system one-way, which is how one would design it if one started again. We got it wrong. We need that consultation if we are to get the system right for GM.

**Robin Harper:** Is there a role for the public in deciding whether individual GM crop trials should go ahead?

**Dr Loening:** That is too technical a job. I am not in favour of members of the public destroying crops. That is counter-productive. I even think that it might have been better not to have destroyed the mistakenly planted Advanta crop, because one farmer's crop was killed with a herbicide. That did much damage and affected the local beekeepers. A lot of damage can be done easily. I do not know whether that suggests an answer.

**Robin Harper:** I have a couple of questions on science. I will restate the question that I put earlier. There is some research on nematodes and worms, but as far as I know, and as far as the Scottish Crop Research Institute is aware, there is no research on sub-soil fungi, viruses or bacteria. Is that a significant omission?

11:00

**Dr Loening:** Research badly needs to be done because of the farming practice that the GM crop engenders. In a way, that research is not so much on GM, but on how one grows one's crop as a result—for example, with a different and rather exacting herbicide programme or possibly a pesticide programme to supplement the Bt gene.

I have to say that what happens under the soil has been neglected by agriculture; even the Scottish Agricultural College is only beginning to examine it. About 10 years ago, the SAC, at an open day in Edinburgh, admitted that it had neglected what happens below the soil.

A major area of neglect is nitrate fertilisers, which are bad for earthworms; earthworms go deep down into the soil to get away from them. Only one or two people have researched that matter. I suspect that the herbicides and GM crops will have the same effect as nitrate fertilisers. Depending on where one looks, one will be able to see that they have had a dramatic effect.

Plants practise their own integrated pest management, if one can call it that. Herbicides affect that biochemically. I know something about that, although I will not go into it now. What is the effect on the plants' biochemical mechanisms for avoiding pest attack—true resistance, not poison—of using the same herbicide again and again on a large crop and on a large scale? I do not think that anyone has mentioned the possibility that there might be an effect, but it is important.

**Robin Harper:** You have mentioned this already, but it is worth exploring it further. Current genetic engineering technology inserts the donor gene sequences into relatively unpredictable locations. Might that interfere with the expression of other sequences?

**Dr Loening:** It not only might, but often does. The potato example that I gave is relevant. The method of doing the insertion is wholly unpredictable—it is extremely crude. It is reasonably successful due to the fact that most of the DNA is not genes. Around 90 per cent of one's DNA does nothing, so it does not matter if it is interfered with. If a functional gene is hit, a plant may be so deficient that it will be rejected. There is some automatic selection. However, if a good plant is produced, the chances of some of its function being changed are quite high. The process is uncertain and potentially dangerous.

Of course, a lot of research is being done, which I am not against, to find ways of understanding how the process works. However, I think that it will never be understood. Einstein was right when he suggested that nature is too complex ever to be fully understood by humans—a bit like our economic system.

**Robin Harper:** Yet geneticists claim that their methods are precise.

**Dr Loening:** Indeed. Monsanto's lectures had slides showing that one can take a gene from an organism—that is precise—and put it in one place in another organism. It is true to say that it is in one place, but there is no way of knowing where that place will be—it is random. That side of things is imprecise.

**Des McNulty:** It strikes me that part of your argument is that we are having the wrong debate between the wrong people about GM foods.

**Dr Loening:** You could put it as bluntly as that.

**Des McNulty:** You are a biochemist with an interest in biochemical questions, but it appears that the important issues would best be dealt with by agronomists or people examining large-scale, longer-term impact. However, part of your argument is that we should constrain and curtail trials. Are you not contradicting yourself?

**Dr Loening:** We need both approaches. I talk, rather loosely, about strategic elements of the debate. Those elements are fundamental and should be the main part of the debate. An important question, however, is how one conducts research to increase understanding. The farm trials are probably rather trivial, as I have suggested. A lot of other research can be done to evaluate beforehand what a field trial might give. On the whole, that research has been done only trivially, as the industry has been keen to move forward rather more quickly than the scientists. However, there is no hurry.

**Des McNulty:** The paradox might be that the people who are most opposed to GMOs also want to keep the debate quite close.

**Dr Loening:** There is a lot of political manoeuvring. The request for a moratorium is a delaying tactic when what people really want is for the trials to be abandoned. We might well debate the paradox or self-contradiction that you raise. Clearly, research needs done in relation to the potential application of genetic technology. That can go ahead, but there is no need to apply any of it at farm scale at this stage.

**Des McNulty:** Are you saying that farm-scale trials are not of the scale that we need to demonstrate what we need to know?

**Dr Loening:** Yes.

**Des McNulty:** Should member states be able to impose a complete ban on the cultivation of GM crops in general or particular GM crops? Is there the evidence base that would allow that to be done?

**Dr Loening:** They should be able to do it, and not only on the precautionary principle, which, despite the fact that many people promote it, is a form of clutching at straws. If a precautionary principle were always followed, there would be no progress anywhere. One cannot always follow that principle.

A nation that is trying to carve another path for its agriculture to make itself more self-reliant—not self-sufficient—in what it does might find that GM crops are such a big distraction that the easiest way forward is to ban them. I had not heard about what the Basque country has done, but I think that it should be allowed to do it. The decision should depend on nothing other than the policy decisions of a Government, such as Scotland's, working in consultation with its people. Scotland has a great opportunity to lead the way into a better agriculture.

**Des McNulty:** Are you saying that the basis on which it should do that is not the minute measurement of small-scale impacts arising from field trials?

**Dr Loening:** That is the excuse. Like the famous owl or dart fish in the United States of America, it is the excuse, not the reason.

**The Convener:** I thank Ulrich Loening for what has been an entertaining session in this morning's consideration of GMOs.

**Dr Loening:** I want to ask what happens next. What more should we all do? I hope that you are going to take all this into account.

**The Convener:** We have a further session next week, involving the minister, ACRE and the AEBC. We will then consider a draft report on the basis of the evidence given to us by the witnesses that we heard at the three meetings. That will become public when the report is published.

I thank all our witnesses for attending.

## Telecommunications

**The Convener:** The next item is a brief update on the telecommunications inquiry. As members will know, some steps were taken on it recently. Members will have copies of a letter from John Gunstone, dated 6 July, and my response to the minister, which was copied to the same people as John Gunstone's letter was copied to. I felt that that was appropriate.

As promised, the minister recently held the telecoms summit, which Richard Walsh attended on the committee's behalf. I think Helen Eadie and Linda Fabiani also attended. We will soon receive a report from Richard and a note from the Executive, both of which we will consider carefully. Do members have any questions or comments on the inquiry?

**Des McNulty:** We had very short notice of the summit. I found it impossible to reorganise my week around it.

**The Convener:** At first, we thought the summit was a non-members, officer-only event, but that status changed at very short notice. I should state for the *Official Report* that the matter was out of our hands.

## Public Petitions (Procedure)

**The Convener:** We move swiftly on to item four on the agenda. I refer members to the paper that outlines a possible new approach to dealing with public petitions. As the paper indicates, we are having to cope with a large number of petitions that have been referred to us. Out of 36 petitions that have been referred to us for action, 26 are still outstanding and have not been concluded. I should also tell the committee that more petitions have been referred to this committee than to any other committee in the Parliament.

If we do not take action, the management of petitions will become increasingly burdensome. The situation also becomes difficult for the petitioners, who sometimes have to wait a very long time for our response. We should be able to provide a clearer and speedier response to petitioners, particularly in cases where other committees have been asked for their views. Furthermore, if we are going to deal with petitions speedily and responsibly, we might have to increase the number of our meetings.

A similar paper has been circulated to the Local Government Committee and the Health and Community Care Committee, both of which have approved the approach that is outlined—other committees are finding it increasingly difficult to deal with petitions under the current system.

In a sense, I am in the committee's hands. I want to hear members' views on the contents of the paper, which outlines a number of steps that we could take. For example, we could comment on our particular problems with the current position; we could agree to take no further action on individual cases that have been subject to legal or court proceedings, industrial tribunals or other statutory processes and procedures; we could note the possible alternative procedure for consideration; or we could adopt the new procedure, which is my preference.

**Mr Murray Tosh (South of Scotland) (Con):** It is a bit worrying that committees are adopting new procedures without discussing them at the conveners liaison group or through the Procedures Committee. Although I have had no time to research the matter since I received the paper, it seems that the whole basis of dealing with petitions is to open up a dialogue with people and supply them with answers.

I am uneasy about accepting a petition and leaving it in limbo, which is effectively what would happen if the petition were left for a member to raise. That might mean anything from enthusiastic members raising all petitions—petitioners will not be slow to work out the situation—to no petitions being raised if members take a determined and united view. That is probably less likely to happen.

The best way to manage the situation is, first, for the Public Petitions Committee to refer on fewer petitions. I recently raised a point about a petition that concerns reserved matters. Helen Eadie explained the situation, but that case still raises a broader issue for the Public Petitions Committee.

Secondly, the committee holds the situation in its own hands. We must put our work load first and foremost. We must say that we will not take on major inquiries if we have not already agreed to do so and that we can accept that a petition raises a worthwhile topic and agree to consider it when we next review our work programme. Committees are able to say no and give reasons for that decision. We might also be able to manage petitions by referring them to one committee instead of several.

11:15

The paper raises the fair concern that the committee might become a final court of appeal on planning matters and so on. We discussed that matter some months ago and agreed not to assume that role. Each committee will probably have to work out how to cope with its work load but, as I said, I am instinctively unhappy about the suggestion that individual committees should adopt procedures that might undermine the petitions procedures. Committee conveners should discuss the situation and the Procedures Committee might have a role to play after such a discussion.

**Helen Eadie:** I support many of Murray Tosh's comments. It is right that individual committees should determine their own work loads and prioritise within those agendas. As a member of the Public Petitions Committee, I have found that there has been great value in allowing individuals to present their point of view, which allows us to give them a clear answer. We also need a defined time scale within which to respond to the petitioner, even if the response is that the committee cannot pursue the petition for X, Y and Z reasons or because it feels it has other priorities. Although I am reluctant to change the current system, my mind is not closed to the arguments and it would be helpful for the Procedures Committee to take a view on the matter.

Some time ago, the European Parliamentary Commissioner told the Public Petitions Committee that the German Länder provide one of the best examples of how a public petitions committee should cope with petitions. Indeed, the Public Petitions Committee should try to identify examples of best practice across Europe and the rest of the world and introduce them to the

Scottish Parliament. At the same time, we are all on a steep learning curve about the best way forward. Petitions give the public a gateway to the Parliament and a cathartic opportunity to get certain issues off their chest. Even if the response is that the issues raised in a petition cannot be pursued, at least the petitioner is receiving a clear answer. I suggest that the views of other committees and individuals should be gathered, along with feedback from the conveners liaison group and the Procedures Committee.

**Des McNulty:** I take quite a robust view on this matter. The Public Petitions Committee should either change its ways or be abolished. It currently acts as nothing more than a postbox that refers petitions to relevant committees and does no evidently useful work. It has been argued that petitions should be made available to the Parliament, but we have not properly sorted out how to deal with them. I agree with Murray Tosh that the matter should be referred to the Procedures Committee, as the procedures in this area are quite deficient. If the Public Petitions Committee is not prepared to reform itself, the matter should be taken through the appropriate route.

I have a number of concerns about the possible new approach. First, Murray Tosh pointed out the opportunity cost of dealing with petitions thoroughly. Ultimately, we have to decide that it is not reasonable for the committee to deal with 36 petitions, which means that we will have to select the petition issues that we will pursue and make a firm declaration that the other petitions will not be dealt with.

How do we go about that? We could sit down with all 36 petitions, decide that we will deal with a certain number of them—perhaps 10—and then discuss which those will be, but that might be a lengthy discussion in itself and may not be the most appropriate method. Another way would be to put the onus on individual members: if they wanted a particular petition to be taken forward, they would have to be involved in dealing with the paperwork. Members could then organise petitions as part of their work load, recognising that the committee may allocate only a limited amount of time to dealing with them. It would be up to individual members: if they wanted to sponsor a particular petition—argue that it should be dealt with and discuss how—part of the responsibility would be theirs.

Even when a petition is dealt with, how satisfied are we that the petitioners benefit? That is an interesting question that has not yet been resolved. All we have been concerned about so far are the mechanisms for handling petitions. I am interested in outcomes. What happens at the end of the process when a petition has been exhausted? How beneficial is the process? Is the selection process discriminatory? Fairness is an issue.

For all those reasons, I think that the Procedures Committee should consider whether the Public Petitions Committee should continue. It is important to deal with petitions, but there is an issue about how we do that. The onus should be much more on members. If they think that a petition is worthwhile and worth their time, they can deal with it. That would be a good filter.

**Janis Hughes:** I agree with most of Des McNulty's comments. We have to take some action as the present situation is unworkable. I agree with Des's comments about the Public Petitions Committee. I am not sure of its exact remit, but passing on every petition, irrespective of whether it relates to a reserved matter or to something we can do anything about, is not the way forward. However, it is fundamental that the Scottish Parliament should be able to receive petitions. I would have grave concerns about any attempt to dilute that facility. For that reason, the matter should be referred to the conveners liaison group, so that it can feed into the Procedures Committee.

Far be it from me to punt for extra work for the Procedures Committee, but a fundamental building block of this Parliament is the fact that people can submit petitions. The matter must be considered at a much more serious level than this paper suggests. If there is an issue about the role of the Public Petitions Committee, that is something the Procedures Committee will have to address, perhaps by changing the committee's remit or by giving it more guidance on how to deal with petitions.

**Robin Harper:** I am always boasting about how different our procedure for dealing with petitions is from Westminster, in that all petitions are heard. It is important not only to protect that but to improve on it. A good way round the problem would be to ask the Public Petitions Committee to draw up its own report on its procedures and to pass that to the Procedures Committee. That would be preferable to the other rather top-down approach that was suggested. The Procedures Committee would then take things from there.

**The Convener:** I am more than happy with what members have said—there is an issue about the Public Petitions Committee, and the Procedures Committee has a role to play in that—but the paper tries to discuss the mechanics of how we deal with petitions once we receive them.

Helen Eadie mentioned that petitions can be cathartic for petitioners. Members sometimes feel that they must deal with every petition because people have made the effort to submit them and

because they deal with issues that are central to their lives and livelihoods. We must be more disciplined in our approach, however, because, as members have said, we have a work programme that needs to be dealt with. I am happy for a higher level discussion in the Procedures Committee to deal with the matter.

Some time ago, I spoke informally to the convener of the Public Petitions Committee about these matters. Not much has changed since then in terms of the number, style and content of the petitions that we receive. I am more than happy to allow the discussion to take place at the conveners liaison group if that seems appropriate. Do not get me wrong: the purpose of the paper was not to dilute the work that we do on petitions, it was to prioritise the work that we can do on petitions. The question is whether the glass is half empty or half full. Every petition will go to every member and every member will have the opportunity to take a petition forward. At some point in the process, all the petitions will end up back here to be dealt with in some shape or form, whether it is for the committee to note them or for it to decide to take action.

I fully accept what members are saying. Referring the work and role of the Public Petitions Committee and how that impacts on our work to the Procedures Committee is a valid approach and I am happy to promulgate discussion at the conveners liaison group.

We have a serious situation with petitions. We have 26 petitions and there will be more. I too take pride in the fact that we do not do what Westminster does with its petitions. When I go to public meetings, I proudly boast about our system, but it is beginning to have a major impact on our work load and we need to prioritise our work.

**Helen Eadie:** One of the issues that Parliament might want to consider is the fact that any individual can petition the Parliament. There has been some debate about whether only petitions from more than one individual should be accepted and about whether the Parliament should set a minimum number of petitioners. One particularly famous gentleman—Frank Harvey from Glasgow—submits probably more than half the petitions that come before the Public Petitions Committee, although that is not to diminish the importance of some of the issues that he raises.

The remedies open to the Public Petitions Committee are limited. It can refer petitions to a subject committee or to the full Parliament—that has happened in only one instance—or it can conduct its own inquiry. However, that remedy has proven to be a major problem, because other conveners feel that members of the Public Petitions Committee are either duplicating work or do not have the capacity in terms of research staff or support to deal with such inquiries.

It was interesting to hear what Des McNulty said about any member or any committee initiating legislation. That might be one of the things that could be considered if a sufficient number of members wanted it to be.

It is important for members to have that background. There have been some positive outcomes. We should ask the Public Petitions Committee for a report on all the cases that have been resolved. That would give a more balanced view. Let us consider not only the problems, but the instances in which we have been able directly to resolve issues for local people.

**The Convener:** That is a fair comment. The Public Petitions Committee does not hand over every petition it receives—it deals with some of them directly and it does sift them. We have agreed a course of action. If members are comfortable with that, we will proceed on that basis. First, we will refer the question of petitions to the Procedures Committee. Secondly, we will promulgate a discussion on the handling of petitions by committees at the conveners liaison group. How petitions will be dealt with by the Parliament will be discussed at two levels.

11:30

**Des McNulty:** We can certainly refer it, but we should be a bit clearer about what we want out of the process. Simply referring the matter does not resolve the problem. I would be keen to establish a filtering process that allows this committee to deal more effectively than has been possible hitherto with a proportion of the petitions that are currently routed to us.

The Public Petitions Committee could decide that a petition raises issues of principle or has such a great weight of opinion behind it that it deserves consideration, and it could refer such a petition on to us. Alternatively, we could get information about all petitions that concern our area of responsibility and individual members could be responsible for pursuing particular petitions. There could be a variety of ways of handling petitions, but the current system is impossible. We say that we are dealing with 36 petitions in a year, but we are not really doing that, and that is unacceptable. We need a mechanism that enables us to deal with a smaller number of petitions appropriately, so that the ones we take on are the most pressing ones.

We also need a mechanism for the petitions that we are not going to deal with. We need a way of saying, “Thank you very much for sending your petition. It has been considered by members of the Public Petitions Committee and the Transport and the Environment Committee, but it has been

decided that we will not pursue the matter further." We must accept that we will have to do that in some cases. If we do not, our work load will be distorted by the petitions process. We must bite the bullet and just deal with the matter.

**Mr Tosh:** I suggest that we draw up a paper summarising the outstanding petitions. Perhaps we could do that when we have received all the referrals from the Public Petitions Committee for petitions received during the summer. The committee, or a sub-committee set up for the purpose, could then prune that list and bring to the committee's attention those that we feel are the most pressing and the ones that fit in best with our priorities.

**The Convener:** That is a sensible suggestion, which we shall take on board.

**Helen Eadie:** One point that seems to come up time and time again is whether any member of the public should be able to submit a petition on their own, or whether there should be a minimum number of signatories.

**Mr Tosh:** That is a much broader issue.

**The Convener:** That is a strategic matter to do with the petitions process in general. We are concerned, at a local level, with how this committee should handle the petitions that are referred to us. Des McNulty and Murray Tosh have suggested how that could be done. Do members agree to proceed on that basis?

**Members** *indicated agreement.*

**Mr Tosh:** I also suggest that we may want to circulate a note of our discussion to all the other committee clerks. Some committees have rushed into pursuing petitions, but it is something that we should all discuss together.

**The Convener:** That is also a good point.

# Petitions

**The Convener:** We now move to consideration of petitions. Petition PE96, from Mr Allan Berry, calls on the Scottish Parliament to hold an independent public inquiry into the adverse environmental effects of sea cage fish farming. A copy of the petition has been circulated to members. Members will also have received a list of indications of support for the petition, a copy of the information requested by the Scottish Executive rural affairs department, and a letter from Mr Frank Buckley, which raises similar issues.

We considered the petition on 13 June and agreed in principle to support the petitioner's call for an inquiry. However, we noted that the committee already had a significant work load and had previously agreed other priorities. We agreed that I should consult the convener of the Rural Affairs Committee about the possible scope and time scale of an inquiry. To that end, I met Alex Johnstone on 31 August to discuss a way forward.

The Rural Affairs Committee, as the lead committee, met yesterday, but was unable to discuss this item of business because of pressure of work. It will consider the petition at its next meeting. This committee is also meeting next week. I therefore recommend that we also defer our business until the Rural Affairs Committee has discussed the parameters that it wants to adopt for an inquiry. We shall then discuss that committee's comments and agree our own course of action.

**Robin Harper:** The petitioner is in the public gallery now.

**The Convener:** To be blunt, whether he is in the room is neither here nor there. I agreed a course of action and the lead committee has not yet discussed its approach. We have to get the cart and horse in the right order, so we have limited scope to do anything today.

**Mr Tosh:** I suggest that all members keep the papers relating to this item, rather than make the clerk reproduce them for a subsequent meeting.

**The Convener:** Thank you for that good point. We shall take that approach.

We have previously agreed to take agenda item 6, relating to stage 2 of the Transport (Scotland) Bill, in private.

11:36

*Meeting continued in private until 12:15.*

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