EFSA CONSULTATIVE WORKSHOP ON INDEPENDENCE AND SCIENTIFIC DECISION-MAKING PROCESSES

Brussels, 12th October 2011

Round table: Trust in Science

10 min presentation by Andrew Wadge on '*Explaining the Scientific Process'*

Good Morning ladies and gentleman. I am very grateful for the opportunity to participate in this important discussion on independence and scientific decision making, which are key factors in establishing trust in food safety.

Confidence in the safety of our food is a fundamental issue for all of us in Europe. When we sit down to a meal with family or friends, we want to enjoy the social occasion and the fine food, rather than be worried about whether we will get sick.

And yet each year we estimate that the numbers of people in the EU who get food poisoning runs into several millions, whilst the European Commission issued more than 3000 RASFF alerts about food incidents in 2009 alone. This, together with the sometimes alarmist reporting on food safety in the media, can damage trust and confidence in food safety – and the processes in place to protect consumers.

I want to address the role that science can play in re-building that trust and to describe briefly the scientific process. But it is important to recognise that science is the starting point – the foundation if you like – for achieving trust in food safety. Science underpins risk assessment – but risk managers will quite properly take wider social, political and economic considerations into account before reaching decisions.

I have a few comments I would like to make to risk managers and risk communicators – which I will cover later, but first let's focus on science.

I would argue that science provides the most robust means of assessing food safety, for the same reason we rely upon Newtonian physics to navigate airplanes – simply because it works! Those of you who flew to this meeting today arrived safely not because the pilot had a lucky day, but because our understanding of navigation is grounded in firm scientific principles.

Similarly, science enables us to eat safely because our risk assessments are based on firm scientific principles. We can measure accurately levels of contaminants in food and identify levels of those contaminants that will be harmful to health.

But I am a scientist – my role is Chief Scientist at the Food Standards Agency in the UK – so you may reasonably argue that I have a vested interest and I would say that science can be trusted wouldn't I?

Well, if science were a secret activity, or the preserve of the elite, then I would be joining you in questioning whether we can trust the scientific process.

But the great beauty of science – and one of the fundamental reasons why it is such a solid foundation for basing our trust in risk assessment – is that science is an open

process. Just because someone is a respected Professor – or indeed a Chief Scientist – doesn't mean that we should simply accept what they say as 'the truth, the whole truth and nothing but the truth'. Scientific understanding progresses not through dogma, but through open challenge and peer-review. And for those of you who look at my blog, you will know that many people disagree with me, not always, it has to be said, in the politest of terms, but nevertheless, I welcome this!

Peer-review is the gold-standard of science. Scientists expose their methodology and conclusions to challenge and a key measure of whether these views are accepted as valid or not is whether the results are reproducible by others.

Whilst we cannot all understand the complex science behind, for example, the risks of dioxin contaminants in food, the fact that the methodology is open to scrutiny by those who do understand gives us reassurance, since this work will be publicly criticised if there are flaws in the process.

So the scientists at CERN who have apparently detected neutrinos travelling faster than the speed of light have invited challenge before we reject Einstein. On a slightly more mundane level – but no less important – the science underpinning risk assessments needs to be open and transparent.

It is important to recognise that, since science progresses through open debate and challenge, science is not an absolute. We cannot say that anything is absolutely safe and science cannot ever prove safety. But what we can do is use science to assess and estimate risks – and importantly, acknowledge uncertainties and divergent opinions.

So science cannot prove, for example, that a particular GM food is safe, and anyone who insists that we should not permit the use of GM until it is proved safe is being disingenuous. But we can use the information on its composition and metabolism in humans to conclude that it is as safe as its conventional counterpart. And our experience over the last 15 years has informed us that many millions of meals containing GM food have been eaten without apparent harmful effects.

If, as I would argue, science provides us with a robust methodology for assessing the safety of the food we eat, then we need to ensure we have the best scientists employed in this task. By definition, this will mean we need those people experienced in carrying out research and risk assessments on food. It is more than likely that they will have done work in the past funded by industry. I have no problem with industry-funded research, provided it is subject to the same peer review requirements. And it is essential that the funding is transparent and industry should recognise that. But it does not make the research or the scientists tainted or undermine their ability to conduct robust science, and we should challenge those who say it does.

We are very fortunate in being able to draw upon the advice of expert scientists who give up their time to sit on scientific panels, rather than simply relying on the regulators, industry, lobby groups or even politicians to tell us what's safe. I call these scientific experts the 'jewels in the crown' of the whole risk analysis process. These scientists do not have an axe to grind, other than to ensure that risks consumers may face in relation to food are properly evaluated. And this again is open to scrutiny by ensuring that these experts declare their interests.

It is also clearly valuable that there continues to be a core of research funded by governments or independent research institutions. The European Commission has an important role to play here and its investment in research is therefore of huge value. In the FSA we spend around €28M a year on research into delivering effective meat controls, actions to reduce campylobacter and controversial areas such as aspartame.

But, science is only the starting point, not the end point. To get to that end we need to bring into play social, economic and political factors. That is the role of the risk managers – but it is important that there is dialogue between the scientists and decision makers.

As the FSA Chief Scientist, I oversee all our risk assessment, but I'm integral to our risk management decisions and often involved in risk communication. And as I'm saying that all our risk assessors need to be transparent about their funding and accept the rigorous scrutiny of the peer review process, I also have a message for risk managers, risk communicators and those working for lobby groups.

You need to be clear how the science is used and not fall into the trap of citing scientific uncertainties to justify decisions which are actually motivated by other factors. There are always uncertainties in the science but that does not mean we ban everything on precautionary grounds – rather we should pursue a risk-based approach. So where regulators and politicians reach decisions that diverge from the advice of risk assessors, there is a duty that they explain the reasons for these decisions, rather than simply hiding behind 'scientific uncertainty' and the 'precautionary principle'.

I would argue that, in recent years, we have seen decision makers citing scientific uncertainty to justify decisions where careful risk assessments by EFSA have advised that exposures are not harmful. This happened in relation to the decision to overturn the Commission proposal to permit the use of Anti-Microbial Treatment Agents, which would have prevented thousands of cases of foodborne illness each year due to Campylobacter in chicken.

Similarly, decisions to ban the use of Bisphenol A in certain products are not justified on scientific grounds alone.

These decisions cannot and should not be justified by citing so-called scientific uncertainty, and we are in danger of undermining trust in the scientific process if and when this happens.

So, to summarise:

- Science provides the most secure foundation for assessing the safety of food – but it is only the starting point
- Science is robust and the best basis for building trust because it is open to scrutiny and challenge
- We need the best scientists to advise us. We should challenge anyone who thinks that we should exclude good scientists just because they have worked for industry, but these scientists must declare their interests.

- Risk managers, communicators and those working for industry and lobby groups need to stop selectively citing parts of the scientific literature to justify their positions. This undermines confidence in the scientific process.

- If your position is driven by social, political or economic factors rather than science, then have the courage to say so.

- And finally, we all depend on the scientific process to ensure the safety of the food we eat – we must not undermine confidence in that process.

Thank you for your attention.