

Hilary Sutcliffe – Responsible Nano Forum

This is the response of Hilary Sutcliffe, Director of the Responsible Nano Forum, to the House of Lords Science and Technology Select Committee Call for Evidence on Nanotechnologies and Food.

Personal perspective only

It is a personal perspective only and does not represent the views of the Steering Group or Trustees of the Responsible Nano Forum who have not been consulted and have not contributed to the crafting of this submission.

View informed by...

- These views are formed in part from my recent involvement in the area of nanotechnology and governance through the development of the Responsible Nano Code for which I ran the secretariat and also through the work of the Responsible Nano Forum, a multi-stakeholder, not-for-profit organisation which was set up in August 2008. It's purpose is: *to serve the public good, we aim to inspire and motivate all stakeholders – business, government, scientists, ngos, the public, the media and others - to play their part responsibly in realising the benefits of nanotechnology, minimising risks and involving the public in deliberation about the social, ethical, health and environmental issues it raises.* (see Appendix 1 for further information).
- The research for and attendance at a recent Nano & Food meeting held by the Responsible Nano Forum . This brought together key stakeholders across business, government, ngos, research and academia to discuss the issues which arise in this area. This is part of the RNF remit to provide a 'Forum for Reflection' for different stakeholders in the area of nanotechnology and also fulfills its commitment to helping all stakeholders play their part in the responsible development of the nanotechnologies.

State of the science and its current use in the food sector

Response - the urgent need for a shared understanding of the spectrum of nanotechnologies in all food related applications (& in other products)

- It is unlikely that anyone can adequately answer most of these questions posed and the lack of transparency and understanding in this area may be a significant barrier to the effective current or future use of nanotechnologies in food. One of the most important issues getting in the way of a comprehensive response is the lack of a shared understanding of what actually constitutes nanotechnology and where areas of concern really lie.*
- The lack of a publicly available, agreed, clear description of the different ways in which the various nanotechnologies can be used in food (and many other applications) - from naturally occurring particles in, say, milk, to novel and new materials or processes. This has led to confusion among different stakeholders and perceptions of companies 'keeping quiet' about their use of the technology and ngos 'inflaming the debate' unnecessarily.*
- This debate has often got stuck on the discussion about the size of the particles which constitute nanotechnology in many fora, (eg under 100nm, up to 300nm etc), which has not been helpful as the question is richer than simply a size issue. The discussion about safety and usage of nanotechnologies needs to be broader than just a size issue*
- In addition to the 'what is nano' issue some information is required on where there are potentially real areas of concern and where the technology is an extension of existing processes and the risks are minimal.*
- Some work is being done on that at OECD, EU and UK government level, but the communication is often so heavily caveated that it is difficult to see, not where the risks lie, but actually where the lack of risk lies.*

- ☪ *Informal dialogues with experts in the area indicates that this is certainly possible, but concerns about, among other things, legal and perception issues prevent it from happening.*
- ☪ *This will allow for the focus of the discussion to be around these areas of uncertainty and potential concern rather than a general catch all discussion about nano in general.*
- ☪ *It will give all stakeholders the ability to focus their attention, whether it be testing, legal issues, campaigning positions etc where it is most needed.*
- ☪ **The Responsible Nano Forum, as an independent, multi-stakeholder body would be pleased to assist in the facilitation of this description and the multi-stakeholder dialogue which must support it.**

Health and safety

No response

Regulatory framework

Response - The effectiveness of voluntary self-regulation

- ☪ *Whilst I am fundamentally opposed to voluntary codes of conduct which are designed to subvert or delay the development of effective legislation, and some are transparently designed for this purpose, I believe that there may be a useful role for the right scheme in the area of nanotechnologies in which food and packaging companies can usefully participate.*

Current voluntary schemes

- ☪ *The UK Voluntary Reporting Scheme has been considered ineffective in that it had poor uptake among those groups to whom it was targeted. However this does not mean that a refined version may not achieve its aims, whether a voluntary scheme in this area is appropriate is not certain.*
- ☪ *Again the lack of clarity about the spectrum of nanotechnologies is not helpful in assessing which materials and processes are appropriate for such a scheme and which are not and whether a voluntary approach is in itself appropriate. It may be that a more targeted mandatory approach may be more effective where there is agreed concern about risks-as occurs with carbon nanotubes, or a precautionary approach appropriate where expert advice concurs - but not in other areas.*
- ☪ *The European Commission's recommendation for a Code of Conduct for Responsible Research exists, but drafting issues and lack of clarity about its monitoring and policing framework adds to the confusion about its role and effectiveness.*
- ☪ *In addition the food industry (through the CIAA Code of Conduct) and the chemical industry (through Responsible Care) are looking to demonstrate responsible behaviour through these initiatives. It is not clear how the all important monitoring and evaluation process will work for these, detailed guidance is lacking and industry support unclear.*
- ☪ *For these reasons they cannot be considered 'effective' in that the behaviours required, the companies involved and the monitoring process has not been fully developed to my current knowledge and so the success of their stated aims is not known. Certainly they have not resulted in increased transparency about safety and testing which is paramount, and therefore have probably not been successful so far.*
- ☪ *Other commercial certification schemes exist such as AssuredNano in the UK, forumnano in Germany and CENARIOS in Europe. The level of support for these is unclear, though such schemes can make a useful contribution to raising standards.*

The Responsible Nano Code

- *Another scheme for the monitoring and assessment of companies involved in nanotechnologies is the Responsible Nano Code (developed by a multi-stakeholder working group and sponsored by the Royal Society, Insight Investment and the Nano KTN) has the potential to be effective in its stated aims through a process of benchmarking and comply or explain adoption, with transparent governance and reporting schemes. Though it is a principles-based code and necessarily 'high level' the Responsible Nano Code could be effective in:
 - (a) *Promoting the issues of responsible nanotechnology to the range of organisations in all parts of the supply chain from materials manufacturers to retailers and those involved in disposal and recycling.*
 - (b) *Allowing companies to demonstrate compliance with good practice in a transparent and easily understood way for the consumer. Some aspects of the good practice outlined in the code are enshrined in law, others are not. A voluntary initiative like this allows that information to be made clear in a way that simple adherence to regulation does not.*
 - (c) *Some feel that regulation in this area is not clear and fit for purpose, if this is the case a voluntary initiative such as this may help bridge that gap and provide information in the public domain to allay concerns.**
- *There are a number of such principles-based codes in operation in a number of fields, some more effective than others. However where they are not monitored effectively, Codes of Conduct like this can provide a sort of 'fig leaf' which is counter productive to the responsible development of the sector and the perception of responsibility with critical stakeholders. This aspect must be effective in order for a voluntary initiative like this to make a useful contribution.*
- *The Responsible Nano Code is designed for use by companies across the world and has support and champions in the US, Asia and Europe. The Responsible Nano Code working group has partnered with Cranfield University for the delivery of the benchmark and adoption process. However its usefulness is dependent on significant funding to enable the secretariat at Cranfield to finalise the appropriate benchmarking and compliance mechanisms to make the code effective.*
- *It is not appropriate that this comes from business alone and the government should consider how the Responsible Nano Code can assist with the responsible development of nanotechnologies and how the UK can take a lead through the support of such an initiative whilst also assisting in the development of a 'level playing field' for UK companies operating across the globe.*

Public engagement and consumer information

Response - ongoing engagement required - not forgetting social and ethical issues

- We believe that it is important that consumer are given information on nanotechnologies because it likely to have a huge impact on all our lives. Not just because of the new and sometimes life changing products it may help create or even the potential risks which may arise from the use of some nano materials or applications, but the ways it, in combination with other technologies, may alter our societies, our attitudes and our approach to our world.
- This is central to the core purpose of the Responsible Nano Forum.
- Information about the use of the various nanotechnologies in food should be part of that communication and engagement programme. The description of the spectrum of the technology will be helpful in assessing when and what is appropriate. For example labelling may be important in some areas where there is a hazard or an uncertainty, but not in others where this is not the case.

Where there is uncertainty about the uncertainty it may also be appropriate to make this known in some way! (See Nano&me below).

- Clarity about the benefits will also assist in building confidence in the technology. At the moment it appears, according to a submission to our Nano&Food meeting *'there is no 'killer app' in the food area which makes it worth the potential downside'*. Also companies are too nervous to put their head above the parapet in this area to promote a benefit in case it gets shot off, and the reputational hit affects their other products.

Previous initiatives - basically effective in their context

- There isn't any particular reason why the public should currently know much about nanotechnologies, so naturally the awareness is low. Neither is there any stakeholder to whom it is particularly important that they know - ditto.
- That being said, the UK is considered to be a leader in the area of public engagement with nanotechnologies - there have been a number of engagement initiatives sponsored by the government, the Research Councils, the consumer group Which?, various social science departments of universities, Phd students and even the East Midlands Development Agency. This is more than most/any other country has done and should be applauded.
- The general attitude of the public may be summarised as - supportive, as long as the technology provides real benefits and is made safe for people to use and not destructive of the environment. Not an unreasonable approach to a new technology!
- These initiatives were considered effective in achieving their goals in the context in which they took place. However we now believe, as did the recent Royal Commission on Environmental Pollution, that it is now appropriate to develop a more sustained approach to public communication and engagement on nanotechnologies. This is central to the work of the Responsible Nano Forum.

Nano&me - permanent, ongoing information for the public

- The Responsible Nano Forum has developed the concept of a website, called *nanoandme.org* through which we hope to contribute to this sustained approach. (See attached www.responsiblenanoforum.org for brief outline of the site's aims and style and 'stills' of its proposed style - the pilot site will differ, but not in overall design 'feel'.)
- It aims to provide balanced information to the public and engage them in the debate about the issues - in particular the potential social and ethical issues which may arise from the development of the technology.
- We have had significant co-operation from all stakeholders in the development of the content of this site, including a government group convened to help communicate about regulation, ngo involvement in content development and review, and business support and assistance in the development of product sectors and overall review. This is hugely encouraging and will help achieve our aim of providing balanced information, developed through an inclusive mechanism, in an easy to understand format.
- DIUS have agreed to fund a pilot of this site for consultation with the participants of the previous public engagement initiatives and opinion formers. The outcome of this consultation and the appetite and scope of a final site should be available in August 2009.
- The site will incorporate a 'Nano Debate' section which will not only feature the Forum's own direct and on-line engagement initiatives, but will also act as a showcase for others programmes.
- For example sponsored initiatives by government or research councils on specific applications, online versions of the relevant DEMOCS engagement projects, 'Nano Cafe's' (done successfully in the US), Meet the Scientist events or business engagement projects.

- We believe that this is an important contribution to the ongoing dialogue and involvement with the public. It will require significant ongoing funding, which we hope to achieve through multi-stakeholder funding streams from government, business and charitable foundations.

Benefits of nanotechnologies

- Our research has indicated that the focus of public debate was very much on the risks of nanotechnologies and that the benefits of the technology and linkages to some of society's pressing problems has not been adequately explored, particularly in relation to the important challenges facing the UK - eg obesity, poverty, energy, ageing etc.
- We are aware of ad hoc initiatives looking at the benefits of the technology in specific areas (eg environment, nanomedicine) but that a cohesive strategy had not been developed which makes these connections and links nano development with the UK research strategy, the commercialisation incentives for the technology and the UK development strategy. This may be particularly interesting in relation to nano in food and the obesity debate.
- We believe that the government's ministerial committee has indicated that a public and stakeholder debate about the UK's nanotechnology strategy may be appropriate, but that this is not currently envisaged as linked to some of the UK's challenges. We support that move, but think that it is essential to join up the discussion about nano and other technologies with the pressing issues we face as a society.

The potential for a permanent 'Nano Commission' style organisation?

Would it be useful to have a permanent, independent organisation with the authority to engage stakeholders and advise government on these issues - in the style of Human Genetics Commission or the Sustainable Development Commission - with multi-stakeholder governance and an independent remit?

The stakeholder engagement we undertook as part of the development process for the Responsible Nano Forum and our subsequent work has led us to consider that this may be a useful step in promoting the responsible development of the technology in a way which maximises its potential for the UK and engages the public appropriately in the process of its development. This is as necessary in the area of nano and food as it is in any other.

The Responsible Nano Forum as it is currently configured is funded a charitable foundation (the Esme Fairbairn Foundation) and by money raised for projects. We are more of an 'ngo' or 'think tank' than a formally constituted organisation. No detailed planning has been undertaken to assess the usefulness of such an organisation, its governance or its remit and if or how the Responsible Nano Forum could contribute to or evolve into such an organisation, neither has our Steering Group had chance to discuss this thinking.

But we raise it here to contribute to take further the question raised in the original Royal Society report of 2004 and mentioned by the Royal Commission for Environmental Pollution of what institutions may be most appropriate to help ensure the responsible development of the technology, in food and any other area sector.

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Appendix 1 - The Responsible Nano Forum



Our Purpose

To serve the public good, we aim to inspire and motivate all stakeholders – business, government, scientists, ngos, the public, the media and others - to play their part responsibly in realising the benefits of nanotechnology, minimising risks and involving the public in deliberation about the social, ethical, health and environmental issues it raises.

Why this is important

Nanotechnology is likely to have a huge impact on all our lives. Not just because of the new and sometimes life changing products it may help create or even the potential risks which may arise from the use of some nano materials or applications, but the ways it, in combination with other technologies, may alter our societies, our attitudes and our approach to our world.

Because of this, we believe it is essential that everyone, particularly the general public, is aware of the nanotechnology, has access to information about its uses and has the opportunity to help shape the way the technology develops. We believe there is a need for an impartial voice in the debates around nano and we will strive to avoid creating concern or confidence where it is not appropriate.

Our strategy is:

- To ensure easy access to clear and balanced information on nanotechnologies and the products it enables
- To act as a catalyst for the involvement of the general public in shaping and contributing to the debate about nanotechnologies and the direction of current and future research
- To stimulate others to play their part in the responsible development of nanotechnologies and nano-enabled applications
- To be a trusted forum for reflection about some of the social, ethical, health and environmental issues, in which all stakeholders can and do participate
- To stimulate and promote the development of 'socially beneficial' applications of nanotechnology

Our plan of action

Our plan of action will evolve as we continue our process of research, engagement and involvement with opinion formers and the general public. However, an opinion former consultation sponsored by the UK government (DIUS) inspired our plan for a number of important areas of work with which to begin:

- www.nanoandme.org - a website for consumers
 - The hub of public engagement and communication for the general public
 - Comprising easy to understand, impartial information on nano, including the range of stakeholder perspectives and current and future social, ethical health and environmental aspects
 - Highlighting ways people can get involved and contribute to the debate and shape its development
 - Including database of current UK consumer products using nano, the classification and definitions used in the different sectors and the benefits and any potential risks



Public engagement programmes

- The UK is considered a world leader in public engagement with nanotechnologies.
- We would like to take this engagement to its next stage as the facilitator and catalyst for deeper and more specific engagement, in particular around the social, ethical and environmental aspects of current and future applications and the direction of research.
- We would work with opinion formers and the public to prioritise the key issues and design a dynamic engagement programme. This may include direct groups such as citizen's juries, or through media partners, You Tube debates, polling and website interaction through Nanoandme.org. We would also hope to work with existing initiatives (eg East Midlands NanoWhat project), to include social and ethical issues in their programmes and where appropriate publicise these initiatives.
- We would articulate the 'business case' for public engagement to help businesses and universities understand why public engagement is important and how to do it.



A trusted forum for reflection - Debates and events on social and ethical issues

- We would undertake deliberative research with opinion formers to prioritise the areas for debate around the wider social and ethical impacts of nanotechnologies and help shape the information available on the consumer website.
- We propose holding a series of debates, both 'live' and internet run which explore these issues with opinion formers and the general public
- We may also facilitate dialogues for others – eg nano labelling – where our independence adds value



Stimulate others to play their part in the responsible development of the technology

- Our approach to this area is still under discussion. However we see some valuable contributions through:
- Ongoing involvement with the Responsible Nano Code through Steering Group members participation in oversight group and support of its aims
- Through the Responsible Nano Forum website providing information and interaction with opinion formers on 'what is responsible nanotechnology' and what organisations can do to discharge their responsibilities.
- Initiatives to effectively promote and support responsible nano – eg *The Responsible Nano Awards*, to highlight responsible behaviours, initiatives and partnerships



Stimulate and promote the development of 'socially beneficial' applications using nano

- Our most appropriate contribution to this area is also still under discussion. However we feel that not enough is done to stimulate the socially beneficial aspects and are seeking ways to do that. Eg
- Research to articulate UK priorities for beneficial applications (eg like the Foresight Challenges), including opinion former and public engagement
- Engage with business leaders, government and scientists to promote these priorities (eg CEO dinners with the Centre for Tomorrow's Company, initiatives with KTN's etc)
- Partnership broking – with ngos, business and government to support highly practical ventures to support the priorities. (Eg arsenic measurement tech in Nepal with Practical Action ngo)

The way we work – we are:

Inclusive – this is demonstrated by the multi-stakeholder governance of the organisation, our commitment to balanced debate & bringing stakeholders together to develop solutions.

Trustworthy – this is demonstrated by the importance we give to the integrity of our information and communication; our commitment to transparency and disclosure and the direct and clear style of our communication.

We are mindful of the responsibility which comes with a focus on the public good – ensuring scientific integrity, avoiding bias or sensation, avoiding creating either concern or confidence where it is not appropriate and avoiding ‘favour’ in terms of stakeholders or points of view.

Challenging – these other values do not prevent us from also being challenging without favour or bias. A multi-stakeholder approach can result in watered-down perspectives, stagnancy and bureaucracy. We aim to create an organisation that can retain its dynamism and energy despite these potential constraints, which is actually more enlivened because of our structure and the way we work.

Enthusiastic – we love what we do and we think it is important. This enthusiasm for our work shows - you will find it in our humour, our honesty, a ‘can do’ attitude and a dedication to solving problems, clearing blockages and smoothing feathers to get the best outcomes we can.

1. Who is involved?

The Director of the Forum, Hilary Sutcliffe, has significant expertise running small and ‘virtual’ companies over a twelve-year period, both as an executive director of *Addition, Shared View* and *Responsible Futures* and as a non-executive director of the *Ethical Investment Research Service*. She also has experience in working in communication, public engagement and in corporate responsibility over a period of 27 years, in the UK and USA, working in the field of nanotechnologies since 2006. She previously ran the secretariat for the Responsible Nano Code and is author of the paper ‘*An uncertain business: the technical, social and commercial challenges presented by nanotechnology*’, sponsored by the Royal Society, Insight Investment and the NIA.

The Managing Director of the Forum – Graham Broadbelt has extensive experience in management and operations for organisations similar in many ways to the Forum, being previously managing director of the think tank *Demos* and the community involvement charity *Common Purpose*.

Trustees and The Steering Group

The direction of work for the Responsible Nano Forum is set by a multi-stakeholder Steering Group and delivered by a small executive group and strategic partnerships, while the formal Board of Trustees of the charity will oversee its governance and organisational competence. The Board of Trustees is currently being appointed, but it will be multi-stakeholder in its make up. The Steering Group is comprised as follows: (shown here in alphabetical order):

- 👤 Mr Frank Barry, *Unite Union*
- 👤 Mr David Baxter, Lead Researcher, Emerging Risks, *Lloyds (Insurance)*
- 👤 Mr Stuart Challenor, Trading Law & Technical Manager – *Tesco*
- 👤 Ms Rachel Crossley, Director, Investor Responsibility, *Insight Investment*
- 👤 Dr Robert Doubleday, Dept Geography, *University of Cambridge*
- 👤 Ms Karen Folkes, Head of Public Engagement with Science and Technology, *DIUS*
- 👤 Professor Richard Jones, FRS, EPSRC Senior Strategic Advisor for Nanotechnology, Professor of Physics, *University of Sheffield*
- 👤 Dr David Grimshaw, Head of Prog: New Technologies, *Practical Action*
- 👤 Arved Luth, *forumnano* (A group of German SMEs seeking to build their reputation for responsible nanotechnologies)
- 👤 Gene Matthews, *Leigh Day Solicitors*
- 👤 Dr David Santillo, Senior Scientist, *Greenpeace International*