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BfR Consumer Conference Nanotechnology

Pilot project to identify consumer risk perception

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BfR Consumer Conference Nanotechnology –
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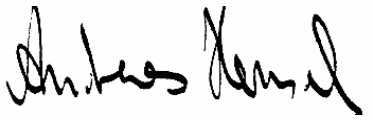
1 Preface

The "Consumer Conference Nanotechnology" was launched as a pilot project by the Federal Institute for Risk Assessment (BfR) as risk communication extends far beyond pure information about the situation of scientific research and knowledge about health risks. The basis for BfR's risk communication is a participatory dialogue. The staging of a consumer conference puts this into practice by directly involving consumers - upstream of the broad consumer use of nanotechnology - in discussions about opportunities and risks. It is the first time in Germany that a public institution has used this risk communication tool.

The Consumer Conference is based on the model of the consensus conference. This instrument was developed and is used in Denmark. The subject and goal of this consumer participation process is to assess new technologies and scientific developments from the angle of informed laymen (citizens or consumers). The characteristic feature of conferences of this kind is the structured public dialogue between experts and lay persons. At the "Consumer Conference Nanotechnology" a group of 16 consumers took a critical look at the subject of nanotechnology. The goal of the opinion-forming and evaluation process spanning several weeks was to identify the different stances, evaluations and expectations within the consumer group. Following the public questioning of experts, the group drew up a vote from the consumer angle on the opportunities and risks of this technology. The consumer vote was then passed on to decision makers in consumer protection, politics, science and industry.

The Consumer Conference is part of a whole series of dialogue and research activities launched by BfR in recent years. Together with the Federal Institute for Occupational Health and Safety and the Federal Environmental Agency, a research strategy was developed to identify the potential risks of nanotechnology. In parallel to this BfR conducted a Delphi survey of experts in the field of nanotechnology, a representative consumer survey and a media analysis of nanotechnology. All these activities share the common goal of giving an orientation and, by extension, maintaining the ability of society to respond in an informed manner to a new, complex technology. The vote prepared during the Consumer Conference by consumers provides orientation along these lines for manufacturers and decision makers from politics and state consumer protection when it comes to dealing with nanotechnology.

I would, therefore, like to extend a special thank you to the 16 consumers who gave up their free time to take a critical look at the subject nanotechnology. The success of this Consumer Conference has strengthened BfR's desire to place risk communication on a participatory basis.



Professor Dr. Dr. Andreas Hensel
President of the Federal Institute for Risk Assessment

2 Part 1: Staging the BfR Consumer Conference Nanotechnology

2.1 Introduction

Nanotechnology is seen as one of the key technologies of the 21st century. The hopes and expectations placed in it as a driver of innovation are enormous. This technology has considerable potential for the development of materials and products with completely new properties. Materials produced using nanotechnology are also to be found to a growing degree in consumer goods like cosmetics, clothing, household products and, in future, in foods and food supplements.

Since the effects of nanotechnology on human health have been largely speculative up to now, it makes sense to integrate the risk perception of various stakeholders into the risk assessment process. In this context the risk perception of consumers plays a very important role. That is why the Federal Institute for Risk Assessment (BfR) launched the first Consumer Conference in the spring of 2006 on nanotechnology applications in the fields of food, cosmetics and textiles. The Consumer Conference was staged together with the Independent Institute for Environmental Concerns (UfU) and the Institute for Ecological Economic Research (IÖW). Annex 14 contains a detailed overview of the project participants.

The goal of the project was to establish the potential opportunities and risks arising from the consumer use of these technologies and the extent to which consumers[1] are willing to tolerate the risks because of the associated benefits. The focus was on:

- overcoming information deficits and establishing differentiated opinions on nanotechnology amongst consumers,
- preparing a qualified consumer vote on the applications of nanotechnology in the areas food, cosmetics and textiles,
- handling over the consumer vote at a public event to decision-makers from consumer protection, politics, science and industry.

In terms of methodology the Consumer Conference is oriented towards the model of the consensus conference. The subject matter and goal of this procedure of consumer participation is to assess new technologies and scientific developments from the angle of informed lay persons (citizens or consumers). Based on this model three nationwide citizens' conferences were held in Germany on genetic diagnosis, stem cell research and brain research. The characteristic feature of these conferences is the structured public dialogue between experts and lay persons.

For the Consumer Conference Nanotechnology 16 citizens of differing age and from different professions were drawn by lots from a cohort of 6,000 randomly selected people according to sociodemographic criteria. This group came together at two preparatory weekends to take an extensive look at nanotechnology. The participants drew up questions on the various aspects of this technology relevant to consumers and selected experts from science, associations, state institutions and industry to answer these questions. The final event of the Consumer Conference was held in Berlin from 18 to 20 November 2006. At a public hearing the invited experts answered the questions from the consumer group on the use of nanotechnology in food, cosmetics and textiles. In a closed session the group then prepared its vote on nanotechnology. It was presented to the public on 20 November 2006 and handed over to representatives of state institutions, politics and associations.

[1] When the term "consumers" is used henceforth, then this refers to the consumers who took part in the Consumer Conference.

The timeline of the overall project was as follows:

April 2006	Setting up the project, methodological design, procurement of the mailing list, inspection of possible venues
May 2006	Establishment of the Advisory Committee, mailing of letters to the 6,000 randomly selected consumers from Berlin/Brandenburg, creation of a website
June 2006	Selection of moderators, selection of the 18 participants by drawing lots, booking of venues
July 2006	Search for and mailing of letters to possible experts for the hearing during the conference, extension of website
August 2006	Conceptual and organisational preparation of the two internal preparatory weekends
September 2006	First preparatory weekend of the consumer group (9-10 September 2006), review
October 2006	Second preparatory weekend of the consumer group (14-15 October 2006), review
November 2006	Public final conference (17-20 November 2006)
December 2006	Preparation of the consumer vote on nanotechnology, public relations
January 2007	Preparation of the final report

The "Consumer Conference Nanotechnology" was supported by a scientific advisory committee (see Annex 14). The advisory committee was independent and advised the project organisers on the preparation and putting of the contextual and methodological questions. This included for example the co-ordination of the information material which was made available to participants as preparation for the first preparatory weekend or discussions of the course and goals of the preparatory weekends and the public final conference.

The overall event was accompanied by experienced moderators. They structured the entire process and were responsible for the course and the success of the weekends.

2.2 Selection of consumers

One major element of a citizens' conference is the selection of consumers. There are various options:

- personal invitation to randomly selected inhabitants;
- telephone interviews with randomly generated telephone numbers, questions about basic interest, mailing of information material and a questionnaire to the interested persons;
- placing of ads in regional and nationwide print media, self-application.

As the return quotas for personal invitations are higher than in other methods, the first option was selected for the "Consumer Conference Nanotechnology".

2.2.1 Invitation to the 6,000 randomly selected citizens from Berlin and Brandenburg

Just under 6,000 randomly selected citizens were sent a personal invitation from Berlin/Brandenburg. It made sense to limit this to Berlin and Brandenburg as this region covered all the main social groups in Germany. First of all in Berlin there is the traditional east-west milieu. Furthermore, many of the people living in Berlin have moved there from other parts of Germany. Furthermore, in the interests of cost containment and effective time management, it made sense to restrict the circle of participants to this geographical region.

Eight local residents' registration offices from Brandenburg towns each supplied 250 addresses. Furthermore, eight Brandenburg districts were selected by the drawing of lots. Letters were sent out to each of them asking for 250 addresses. Berlin was also included with eight districts each with 250 addresses.[2]

Eight district towns, Brandenburg:
- Non-district towns (=4): Brandenburg an der Havel, Cottbus, Frankfurt/Oder, Potsdam
- District towns (4 from 14 rural districts by drawing lots; the related rural districts are then no longer available to the communes): Eberswalde, Lübben, Herzberg, Rathenow

Eight local authorities, Brandenburg:
- Niedergörsdorf, Gemeinde Wiesenburg Mark, Uckerland, Letschin, Heiligengrabe, Plattenburg, Tauche, Schipkau (8 out of 10 rural districts by drawing lots; then selection of communes by drawing lots)

Eight districts, Berlin:
- Charlottenburg-Wilmersdorf, Neukölln, Reinickendorf, Spandau, Steglitz-Zehlendorf, Tempelhof-Schöneberg, Treptow-Köpenick, Marzahn-Hellersdorf (6 west, 2 out of 6 east by drawing lots)

The background to this selection was the idea of contacting an equal number of rural, city and small town groups in the population in order to guarantee as a heterogeneous a composition as possible of the selected consumers.

Out of the 6,000 address data sets, 5,750 invitations were sent out (see Annex 1, invitation letter), as one commune did not respond to BfR's request for data sets. Up to 23 June 2006 41 people returned their participation forms to BfR. The return quota was, therefore, 0.71%. The reasons for this low return quota have possibly to do with the topic in addition to speculative formal reasons. It would seem that at the time when the invitations were sent out, nanotechnological developments were not very centre stage in the public perceptions so individuals did not manifest any direct interest in the subject. Nor did the average consumer see any clear controversy surrounding nanotechnology. Lay persons were perhaps of the opinion that the subject was not interesting or controversial enough.

2.2.2 Selection of the consumer group by drawing lots

From the 41 returns 18 participants were selected by drawing lots on 29 June 2006 and six further individuals as potential back-up candidates. Despite the comparatively low number of returns the interested parties constituted a balanced random sample, i.e. an equal number of men and women of different ages. This meant that a combination could be selected on the basis of targeted pre-selection and the random principle. To this end the replies were presorted by gender and age. There was no further consideration of geographic location. There

[2] The Berlin data came from the regional office for citizens' and regulatory affairs, citizens' services local residents' registration affairs; the Brandenburg towns and communes were contacted through their respective local residents' registration office.

were no conditions for participation. One prerequisite was, however, that all participants could be present on all three weekends and that they had no professional interest in the subject of nanotechnology[3].

In terms of its composition the consumer group can be seen as a typical cross-section of the population. It was composed of seven women and seven men aged between 20 and 72. The range extended from students, young mothers, the unemployed, self-employed, an accountant down to a managing director and pensioner. In detail:

Name	Resident in…	Age	Professional background
Carola D.	Berlin	60	Retired town councillor
Jörg F.	Rathenow	63	Early retirement (farmer)
Detlef G.	Schipkau/Hörlitz	43	Employed (Management clerk)
Marcel G.	Eberswalde/Finow	24	Self-employed (telecommunications)
Frank H.	Niedergörsdorf/Dennewitz	41	Self-employed (EDP sales rep)
Dana K.	Schipkau / Annahütte	26	Unemployed (diploma landscape management)
Klaus M.	Brandenburg a.d.H.	65	Pensioner (car mechanic)
Regine O.	Frankfurt / Oder	47	Employed (financial accounting)
Sabine O.	Cottbus	64	Pensioner (teacher)
Mareen P.	Berlin	23	Employed (financial department)
Anneliese R.	Berlin	51	Employed (dental technician)
Ray R.	Berlin	20	Chemistry student
Dr. Bernhard S.	Berlin	51	Managing director (nature conservation)
Heidemarie S.	Lübben/Spreewald	63	Pensioner (textile industry)
Hans-Joachim S.	Eberswalde	72	Pensioner (criminal police)
Marko S.	Wiesenburg	32	Master craftsman (MAN commercial vehicles)

All the participants' expenses were reimbursed (accommodation, food, travel). However, they were not paid a fee or any compensation. Hence the consumer group worked on a voluntary basis for the three weekends. The same applies to the experts during the final weekend. All their costs were covered but no fee was paid.

2.3 Selection of the experts

A two-stage procedure was used to select the experts. The first step was to identify experts in the field of nanotechnology by

- adding to an existing IÖW mailing list;
- conducting an additional Internet search;
- analysing completed and ongoing research projects;
- identifying participants (speakers) at meetings in the various technical areas;
- asking for suggestions of further suitable experts at expert meetings.

Experts were identified in the topics that were the focus of the Consumer Conference. The recruitment of experts proved to be difficult to varying degrees. This was relatively easy for general questions on nanotechnology like for instance economic potential or toxicity. For some sub-areas, for instance food and cosmetics, it was far more difficult. This was partly because when this procedure was being established, food was not centre stage of the nanotechnology debate but also because the food industry had reacted with extreme reticence to the request for participants in the Consumer Conference.

The persons identified as possible experts were already contacted mid-July 2006 (e-mail and letter) and the purpose and format of the Consumer Conference were explained to them. Furthermore, they were asked if they were interested in participating in the Consumer Con-

[3] Because of problems with dates five of the orginally selected individuals did not participate. They were replaced by "suitable" reserve candidates (same group in terms of age and gender). Two people cancelled just before the first weekend.

ference, to indicate this to IÖW and to block the envisaged date for the conference in their diaries. Out of the 120 experts, 50 contacted us and informed us that they would be willing to participate in a hearing on the envisaged date of the Consumer Conference.

Prior to the second preparatory weekend the experts were asked to send BfR a short description of themselves and their work. This was to serve the consumer group as a basis to proceed to an informed selection of experts at the second preparatory weekend against the backdrop of the completed catalogue of questions. 30 experts sent us their profiles (see Annex 2).

2.4 Preparatory weekend

The consumer group came together on three weekends. The two first weekends served to prepare the public final event. In the run up to the first weekend letters had been sent to all participants. Besides organisational information, the letters also explained the procedure and asked for confirmation that all the consumers could come to Berlin for all three dates. Furthermore, they were given information about the organising institutions and provided with material on the subject of nanotechnology.

The information material on nanotechnology helped all participants to gain a first impression of the topic. The goal was to provide basic definitions, to identify possible areas of use and to highlight potential benefits, potential risks and any open questions. The information and texts were short and comprehensible. In order to give the group information that was as objective as possible, care was taken to ensure that the contents of the texts were balanced both concerning the opportunities and risks of this new technology and also the arguments presented.

The folders were prepared by the organisers and approved both by BfR and the advisory committee. They contained the following texts:

- Situation in the nanometre range (compiled on the basis of: Jennifer Kahn, Neues aus der Nanotechnologie, National Geographic Deutschland, June 2006, pp. 132-156; Nils Boeing, Alles Nano?! Die Technik des 21. Jahrhunderts. Reinbeck, p. 12.)
- Product selection in the nanotechnology context
- (http://www.nanotechproject.org/index.php?id=44 – Status: 2 August 2006)
- Study by Swiss Re: Nanotechnologie. Kleine Teile – große Zukunft? Extract from the introduction (pp. 4-7)
- Brochure: nanoTruck. Reise in den Nanokosmos. Die Welt kleinster Dimensionen – selected chapters (pp. 36-39)
- Brochure of the Federal Ministry of Education and Research: Nanotechnology. Innovation for the world of tomorrow – selected chapters (pp. 26-27)
- Newspaper article: "Sunscreen could soften brain" (taz of 11.07.2006)
- Article: "neosino. The nano miracle is kept secret" (ARD, daily news) and "Neosino has no approval" (ZDF, today, p. 1) of 31.03.2006; counter-depiction by neosino nanotechnologies AG (press release NS-25/06)
- BASF Ethics Code Nanotechnology
- Final report: Nanotechnology. Work report No. 92 of the Office for Technology Impact Assessment with the Deutscher Bundestag (TAB) – selected chapters (pp. 31-32, 81-83, 123-125, 172-173, 178-179)

2.4.1 First weekend (9 and 10 September 2006)

The first weekend of the Consumer Conference was an opportunity for the participants to get to know each another, to clarify procedural questions and to undertake a first critical examination of the subject nanotechnology. Furthermore, BfR outlined the wish of Bielefeld University to make an audio recording of the entire Consumer Conference for accompanying research in the field of the social sciences. In the ensuing group discussions, all participants voted in favour of the complete recording of the event. One staff member of Bielefeld University was responsible throughout the entire procedure for ensuring the technical success of the recordings.

In a series of small groups and plenary work (with different compositions), provisional questions on the following areas were formulated:

- Cross-disciplinary aspects of nanotechnology
- Food
- Textiles
- Cosmetics

One major goal of the first preparatory weekend was achieved: the drawing up the provisional catalogue of questions.

In preparation for the final weekend and the public hearing of experts, the organisers had already contacted experts from the following areas in the run up to the first weekend: surfaces, materials, textiles, food, physics, chemistry, dermatology, general medicine, technology impact assessments, ethics, sociology, philosophy, political science, consumer protection, product safety, associations and companies. They were presented to the group. In the ensuing discussions the group expressed the wish – based on the questions available up to then – for experts to be contacted from the following three areas by organisers for the final conference:

- Civilian observers from the areas military/space (research, applications)
- Representatives of öko-Test, Stiftung Warentest
- Experts from the area of research promotion (Who distributes the money? Relationship: basic, applied and accompanying research), BMBF (Federal Ministry of Education and Research, committees, scientific organisations (DFG – German Research Foundation, Helmholtz)

After the first weekend all experts, at the suggestion of the group, were sent an article from the latest issue of the Öko-Test magazine on the subject of nanotechnology[4] along with all the partial and interim results of the first weekend. Furthermore, all participants who had put their names on the list were sent the requested information by post (materials from the information desk).

2.4.2 Second weekend (14 and 15 October 2006)

During the second weekend the final catalogue of questions was prepared, experts were selected for the hearing at the final conference and the group was briefed for the final weekend. This was the procedure for the second weekend (Annex 6).

At the request of the group two experts were invited for the second preparatory weekend who engaged in a discussion of the subject nanotechnology from different angles. The group

[4] Jurkovics, U. (2006): Klein, kleiner – nano. In: Öko-Test No. 9, 90-93

agreed on the scientific journalist Nils Boeing and a representative from industry or the business community (one area which is already used and ideally comes from the three main topics). At short notice, Mrs Birgit Huber from the German Cosmetic, Toiletry, Perfumery and Detergent Association (IKW) agreed to participate. Firstly, the group hoped to obtain further background information and secondly dealing with experts was to be "a practice run" for the final weekend.

For the ensuing group work the random composition of small groups, the procedure adopted up to then, was abandoned and the groups were formed on the basis of interest. Each participant chose one of the three main topics (textiles, food or cosmetics). The five or six strong theme groups worked on their respective catalogue of questions and selected the experts from their area for the hearing. The same composition was used for the final weekend.

The topic-related catalogue of questions elaborated in the theme groups was then presented to the plenary and endorsed by the entire group. The final catalogue of questions focused exclusively on the three main areas textiles, food and cosmetics. Some of the questions on the general/multidisciplinary aspects of nanotechnology from the first weekend were either taken over into the main areas and concretised or dropped.

Consequently, the final catalogue of questions can be broken down into three parts:

A) Questions about nanotechnological applications in food

Introductory questions

- What opportunities/future visions do you see in the food sector? Could we, for instance, create new nanofoods?
- What advantages does nanotechnology offer in respect of high quality food products and does the use of nano in food offer any benefits at all?
- To what extent is it proven that nano-modified foods/food supplements can offer health benefits?

Baby/child area

- Are there plans to use nanotechnologically processed foods in the baby-child segment? Are there special, stricter guidelines?
- Can the consumption of nanofoods influence the quality of human milk? To what extent has research been conducted into whether human milk can transport nanoparticles?

Guidelines and labelling

- How are consumers informed about nanotechnology in food, e.g. via the (general) mandatory labelling of nanofoods?
- To what extent is an organic product still organic when, for instance, its packaging contains nanoparticles?
- What restrictions must be complied with and which yardsticks must be met before a nano-modified food can be placed on the market?

Packaging

- How far advanced is research and the implementation of “smart” packaging, e.g. to extend shelf life?
- Can nanoparticles detach themselves from these new packages and, for instance, reach foods and the disposal phase?

- To what extent has research been conducted into what happens to nano particles in various disposal paths?

Risks
- What risks are linked to production, to consumption? What research findings have been obtained so far?
- How long can nanoparticles (e.g. nano-encapsulated pesticides) remain in the environment?
- Can nanoparticles of this kind reach the (human) body?

Ingredients
- Which nano-modified substances should be used in foods and how are these substances modified or produced?

Preservation
- Can nanotechnology replace conventional preservation options in food technology?
- Can the shelf life of foods/raw products (processed/unprocessed) be extended through nanotechnology? If so, by how long?

B) Questions about nanotechnological applications in cosmetics

Health risks
- What are the health risks (damage to the body)?
- When can nanoparticles reach the body or blood?
- With what degree of certainty can one say that nanoparticles do not reach the blood stream and organs or that they are not mutagenic?
- How great is the health risk associated with sprays which may also be inhaled?
- Do nanoparticles penetrate the skin? (Contradiction: on the one hand nanoparticles are easily taken up by the skin, on the other they clump and tend not to be taken up). How can health risks be ruled out during the production process?
- Are organic nanoparticles safer?

Ecological aspects
- What are the ecological risks (degradability in nature)?
- Is research being conducted into the possible consequential damage resulting from the input of nanoparticles into the environment and nature and, if so, by whom?
- Are nanotechnologically treated substances recyclable? Can nano ensure environmentally friendly rotting?
- Is research being conducted into the interaction between nanocosmetics and other nanoproducts?
- Can nanoparticles trigger dangerous chemical reactions? (during production, in consumers)

Consumer information
- Why are consumers not being informed about nanotechnology in products?
- What mandatory labelling is being planned for nano?

- Who should monitor compliance with the mandatory labelling of nanoproducts and who should inform consumers? Should nanoproducts in the cosmetics area carry warnings until it has been proven that they are completely safe? (see cigarette packs)

General
- Are there internationally standardised measurement methods for the detection of nanoparticles?
- What's the point of using nano in cosmetics?

C) Questions concerning nanotechnological applications in textiles

Production
- Are specific properties of nanotextiles achieved through the material or the structure of the nanoparticles?
- Aside from the coating of conventional materials, can nanotextiles be woven completely from nanoelements?
- Is there a need for weaving at all in order to obtain nanofibres?
- What other ways are there of producing nanofibres?
- How much energy is used in the production of nanotextiles and what are the costs?
- How will this impact on the consumer?
- Can nanotextiles meet the ÖKOTEX100 Standard?
- How is the purchaser informed about the presence of nanoparticles in the textile (easily comprehensible mandatory labelling)?
- What links do you see between the technological developments of nanotextiles and the genetic manipulation of fibre plants?

Use
- What improved properties do nanotextiles offer compared with conventional textiles? (Examples: industrial health and safety, fire protection, sports clothing, daily clothing)
- How is the safety of nanotextiles guaranteed for the wearer, particularly children?
- Are nanoparticles lost during the use of textiles (wear and tear) or during cleaning? What happens to the nanoparticles washed out during cleaning in the sewage treatment plant?
- Are there specific detergents for nanotextiles? Can standard detergents be used?

Disposal/recycling
- Can nanotextiles be recycled?
- What happens to nanoparticles during the disposal of textiles?
- Do nanotextiles have to be considered as hazardous waste?

Once the catalogue of questions had been completed, the experts were selected who were to answer the respective questions. Here again the theme group agreed on one candidate. These candidates were then presented to and endorsed by the plenary which meant that the invited experts had the support of the entire group[5].

The experts were chosen from the pool of experts who had been contacted by the organisers previously, who had declared their willingness to participate and who had provided some

[5] For the second weekend see the proceedings, Annex 10.

details about themselves (institution, function, focus of their work). From this pool of approximately 30 experts (Annex 2), the group selected a total of 14:

- Dr. Jan Beringer (International Textile Research Centre Hohensteiner Institute)
- Monika Büning (Federation of German Consumer Organisations (vzbv))
- Prof. Dr. Tilman Butz (Leipzig University, Faculty of Physics and Geosciences)
- Torsten Fleischer (Research Centre Karlsruhe, Institute for Technology Impact Assessment and System Analysis)
- Prof. Dr. Helmut Horn (Association for the Environment and Nature Conservation)
- Prof. Dr. Rüdiger Iden (BASF, Ludwigshafen)
- Dr. Wolfgang Kreyling (GSF-Research Centre for Environment and Health)
- Prof. Dr. Harald Krug (EMPA, St. Gallen)
- Prof. Dr. Jürgen Lademann (Humboldt University Berlin, Clinic for Dermatology, Venerology and Allergology)
- Dr. Wolfgang Luther (Association of German Engineers, VDI Technology Centre)
- Prof. Dr. Hans Micklitz (Bamberg University, Chair for Private Law)
- Sabine Plitzko (Federal Institute for Occupational Safety and Health)
- Dr. Markus Pridöhl (Degussa, Advanced Nanomaterials)
- Dr. Petra Schaper-Rinkel (Free University Berlin, Otto Suhr Institute for Political Science)

Monika Büning (Federation of German Consumer Organisations (vzbv)) and Professor Dr. Harald Krug (EMPA, St. Gallen) were to be asked questions on each of the three main themes[6].

After the second preparatory weekend the experts selected by the consumer group were contacted (by e-mail and letter) and invited to attend. Furthermore, the wish was expressed for the consumers to be given a short statement on the assigned questions. Most of the experts then agreed to participate.

Some of the consumers' questions could not be assigned to the selected experts (particularly in the area of food). Consequently, an extensive search process was launched in order to quickly find the appropriate experts. This was not successful particularly in the area of food. The experts contacted were initially willing to take part but then there were co-ordination difficulties within the institutions which meant that in the final instance they did not participate.

2.5 Final weekend (17 - 20 November 2006)

The final public weekend was the highlight of the "BfR Consumer Conference Nanotechnology" (see Annex 11, detailed schedule of the final weekend). The consumer group already came together in Erkner on 17 November. All questions were extensively discussed with the moderator by way of preparation for the public hearing.

The final event was public (see Annex 9, Event flyer); around 50 people registered for the public hearing, the presentation and the handing over of the vote (see Annex 10, Registrations for the public hearing).

[6] Prof. Dr. Krug was in fact only available to the group for the public hearing because of his tight schedule.

For various reasons not all of the selected experts came to Berlin on 18 and 19 November for the public hearing. Five experts withdrew:

- Three experts pointed out that the concrete questions were not in their area of competence.
- One expert (from a company) informed us that the question was not oriented towards one company but towards the entire sector and for that reason it would be better for the association to send a representative.
- One company expert informed us that he could not attend the hearing because he was sick. No replacement was provided.

Annex 3 contains a list of the experts who actually appeared.

The original idea of separating the hearing – a question and answer session – from the discussions between the consumer group and experts or the audience with a coffee break was not feasible. As a consequence of the situation, discussions always returned to individual aspects which were currently being discussed.

Immediately after the hearing on the individual topics, the group withdrew in order to discuss what they had heard and to establish a first opinion. This opinion was then used in the written phase of the vote as orientation although the key words were only used indirectly as a basis for the individual chapters.

2.6 The consumer vote

On conclusion of the public hearing the group came together and prepared their consumer vote on the use of nanotechnology in the areas food, textiles and cosmetics. To this end, small groups were initially formed who restricted themselves to one of the main points of the topic and prepared a text proposal for one chapter. This was presented to the plenary, discussed with all participants and any supplements, deviating opinions or deletions recorded. Hence the text was composed by the consumer group itself and endorsed by all the participants.

The consumer vote is the central result of the "BfR Consumer Conference Nanotechnology". On approximately eight pages the 16 consumers set out their views on the application of nanotechnology in the areas food, cosmetics and textiles. The general part and the chapters on food, cosmetics and textiles were compiled on Saturday afternoon and evening and on Sunday night. The preamble was already drafted on Friday evening by individual members of the group. It was presented on Sunday for a vote as was the executive organiser’s preface, the title page and all annexes.

“Consumer vote on the application of nanotechnology in the areas food, cosmetics and textiles”

1 Preamble

"We are a group of people with varying qualifications and occupations who embarked on this process with considerable interest but initially very unclear ideas about nanotechnology and the Consumer Conference. There were fears – sales or alibi event? – but also the hope of achieving something with our opinion as the expression of the citizens of this country, of raising awareness amongst consumers and calling on politicians, scientists and industry to deal with nanotechnology in a responsible manner.

It very soon became clear to us that many experts are looking at the opportunities presented by nanotechnological applications. That's why we focused more on the risks. Despite the diverse opinions within the group the discussions were always constructive and the opinion-forming process always resulted in major agreement.

The vote refers to the application areas food, textiles and cosmetics. Furthermore, numerous other aspects have also been touched on: military applications of nanotechnology, contribution of nanotechnology to solving global environmental problems (e.g. drinking water treatment), the widening technological gap between industrial and developing countries as well as medical applications of nanotechnology. We were not able to examine these in any depth. We do, however, feel there is a need to take a critical look at these questions in future.

2 General section

Nanotechnologies constitute a major challenge for our society. We must deal responsibly with the term "nano". Hence, we are calling for a uniform definition of "nano" and a scientific and legal definition of the terms nanotechnology, nanoparticles and nanomaterials.

The labelling of nanotechnologies is a very important aspect for us. In order to be able to undertake labelling at all, there is an urgent need for the rapid establishment of standards on nanotechnologies and nanoparticles. We refer here to the individual topic complexes.

We are concerned that there are scarcely any measurement methods. We note that up to now no limit values have been established for the risk assessment of nanoparticles. In order to be able to carry out an exact control of nanoparticles, we call for new analytical and measurement methods to be developed and standardised by independent bodies. In this way standards for industrial safety and end products can be established and, in the final instance, risks for consumers avoided.

Risk assessments must take into account the entire product life cycle (production, use and disposal).

The production process of nanoparticles, which should be undertaken in a closed system, seems to be safe in Germany. In other countries this (industrial) safety is not guaranteed. Companies that use nanotechnologies at their production sites abroad or in cheap wage countries should be required to give their employees the greatest possible protection. The majority of the group, as responsible consumers, want to see the establishment of uniformly high safety standards around the world.
In research on nanotechnologies far more weight should be attributed to risk research. The share of public funds for risk research must be considerably increased. This research should be conducted above all by independent, state research institutes.

Very little information on nanotechnologies is available to the public at large. In order to allow consumers to make up their own minds about industrial nanoproducts, comprehensive infor-

mation must be available on the advantages and disadvantages. Only then can we expect consumers to adopt a positive attitude towards nanotechnologies. Topics which should be dealt with in the media are: What is nano? What products are there, what methods, the pros and contras, benefits of the products? The information should be provided via the mass media and during prime time TV also quoting the information source.

The Federal Institute for Risk Assessment and other social stakeholders should extend their activities involving a dialogue with the general public and risk communication with consumers. We suggest measuring the impact of the consumer vote in the near future and organising a review meeting.

3 Special section: Food

We believe that the use of nanotechnologies in food is a very delicate area. The development of the new products for the market calls for industry to show a highly responsible attitude. We regret the fact that no representatives of the food industry were on hand to respond to our questions. This meant that questions concerning food for infants and children remained unanswered.

We welcome the fact that nanotechnologies create opportunities which will offer benefits to consumers particularly in respect of food safety, whether it be re-examining the cooling chain or unmasking perished food. The question in our minds is whether we need foods that can change their properties by pressing a button, e.g. taste. In the final instance, it is the consumer who decides whether these products will be successful on the market or not.

It is reassuring that the statutory provisions on the mandatory labelling of foods are very stiff in the European Union. When known substances are used in the nanoscale range, they may have completely new and different chemical and physical properties from the ones they had in their conventional format.

Only a minimal share of the current funding of research into nanotechnologies is spent on risk research in the EU and Germany. That is very unsatisfactory.

3.1 Recommendations/Demands

We are of the opinion that research must be undertaken into the really important topics of nanotechnology in the food area (e.g. improved drinking water treatment, quality control and assurance, intelligent (smart) packaging and shelf life) and corresponding products.

We call for mandatory labelling for "nano" so that consumers firstly have freedom of choice and secondly we can avoid them being misled. We believe that mandatory labelling is particularly important in the food sector as here substances can be directly taken up in the body.

We need an approval procedure for nanoscale substances in foods and their packaging. In this context we call for already approved substances (silicon dioxide, titanium dioxide, aluminium silicates…) to be re-examined (additional tests) when they are used in the nanoscale range.

4 Special section: Cosmetics

New technologies are being used in processes and in specific substances in the field of cosmetics (nanotechnologies, nanoparticles). One of the advantages they offer is, for instance, limited use of nano-structured material whilst achieving the same major effect. There are many examples for this application: day creams with UV protection, toothpastes, active substances in hair products. What is particularly interesting is that sunscreens can only

achieve SPFs of more than 15 by using nanoparticles. In today's world with a higher incidence of skin cancer, this is a particularly welcome application.

4.1 Health risks

There has not yet been comprehensive examination of the risks apart from the three common substances titanium dioxide, zinc oxide, silicon dioxide. All the same, health risks cannot be ruled out. This is probably less true of creams than of sprays. Nanoparticles may reach the blood stream where they may have an oxidative impact and, by extension, affect the heart, brain, other internal organs and the embryo. We call for further studies on the health impact.

4.2 Ecological aspects

Since larger volumes of the nanoparticles used most also occur as substances in nature, we are not of the opinion that this leads to any major ecological problems. However, any new substances which do not occur in nature are a cause for concern viewed from where we stand today. We fear that particles of this kind could reach the food chain via rivers. Until we know more about this, we recommend that these new ingredients should be dramatically reduced and their release into nature avoided as far as possible. We recommend early (proactive) risk assessment.

Interaction with other chemical elements cannot be ruled out in various scenarios. Nanoparticles may trigger chemical reactions in the environment and, if used in the wrong place, lead to risks for organisms. Research into the ecological risks and interactions when using cosmetics must be stepped up.

4.3 Consumer information

So far there has been no standardisation of nanotechnologies or nanoparticles. Hence we recommend rapidly drawing up guidelines. On this basis we call for mandatory labelling. The labelling should be comprehensible to consumers. The Federal Institute for Risk Assessment should draw up proposals for the legislator. Until then we call for the particle size to be indicated alongside the substances in all cosmetic applications.

5 Special part: Textiles

The questions raised by us were answered in detail by the experts. This meant that many prejudices could be overcome. It became clear to us that, in principle, every nanotechnological effect can be transferred to textiles. We are now more convinced than ever that the advantages of nanotechnologies for textiles far outweigh the risks.

5.1 Production

It was reassuring for us to hear that the experts say that nanoparticles for textiles are produced in closed systems and that, therefore, their release into the environment is largely prevented.

One new finding for us is that up to now no pure nanofibres could be produced industrially. Only existing textile fibres can be finished with nanoparticles either by weaving them into the threads or by applying a coating to the surface.

We welcome the statement that any further processing of textiles produced using nanotechnology can be done on conventional machines using the same amount of energy. We, therefore, expect that the products produced in this way will not be considerably more expensive.

We also welcome the fact that various standards (e.g. Öko-Tex 100) are to be extended by including limit values (less than 100 nm as the critical range) for the assessment of nanoparticles. We, as consumers, call for the labelling of nano-finished textiles (e.g. Hohensteiner quality label) by manufacturers.

5.2 Use

After the hearing we are of the opinion that the use of nanotechnologies to improve the functionality of textiles, which is gaining ground in many areas of life (e.g. industrial safety, sports clothing, clothing with an antibacterial finish and UV protection) is important. It is our belief that this development constitutes a step towards more quality of life.

We believe that nano-finished textiles with high user value are a good thing. The improvements to textile properties should be proven to be lasting (little or no wear and tear, relative wash fastness). If this can be guaranteed, then our concerns about the health risks for users and contamination of the environment have largely been allayed.

5.3 Disposal/recycling

Our fears that nano-finished textiles would have to be classified as hazardous waste were not confirmed. They can be recycled or thermally reutilised using conventional methods.

There are still questions about the mass landfilling of nano-finished textiles (possible impairment of water and soil). Here we believe there is a need for research and action prior to their market introduction in order to avoid any damage to humans and the environment from the very outset. If pure nanomaterials are manufactured or there is mass use of materials finished with nanoparticles, then the recycling systems must be upgraded to keep pace with these technological developments.

2.7 Publication of the vote

2.7.1 Presentation and handing over to the Federal Press Agency

The consumer vote was presented on 20 November 2006 to the Federal Press Agency in Berlin. At a press conference the procedure and the main results were presented to the media representatives. Then the consumer vote was handed over to representatives of the Bundestag, the Federal Ministry of Food, Agriculture and Consumer Protection, associations and BfR (see Annex 11, Detailed schedule Monday). The following individuals accepted the vote:

- Ulrike Höfken, Chair of the Bundestag Committee for Food, Agriculture and Consumer Protection, Bündnis 90/Die Grünen
- Min. Dir. Bernhard Kühnle, Departmental Head within the Federal Ministry of Food, Agriculture and Consumer Protection
- Dr. Gerhard Timm, Federal President of the Association for Environment and Nature Conservation Germany
- Prof. Dr. Reiner Wittkowski, Vice-President of the Federal Institute for Risk Assessment

No representatives of the scientific administration or industry were present to accept the vote contrary to what had been planned[7].

[7] Requested individuals or institutions included: Prof. Dr. Edda Müller, Chairman of the Federal Association of Consumer Associations; Prof. Dr. Jürgen Mlynek, President of the Helmholtz Community; Dr. Wilfried Sahm, Managing Director of the German Association of the Chemical Industry.

2.7.2 Further activities

The consumer vote was posted on the BfR website on http://www.bfr.bund.de/cm/220/ verbrauchervotum_zur_nanotechnologie.pdf and can be downloaded. On the A-Z Index pages of the BfR Homepage the following documents are available on the Consumer Conference under the heading "Nanotechnology":

- Event flyer (see Annex 9)
- Background information on the project (see Annex 12)
- BfR press releases (see Annex 13)

The consumer vote was also published on the UfU and IÖW websites.

Besides material on the Internet, which was used as the main information source for the project, other public relations work was carried out. In the run up to the public final event of the Consumer Conference, invitations were publicly extended via expert mailing lists, event websites on the Internet and the internal mailing lists of UfU and IÖW. Roughly 50 people registered for the public hearing and for the presentation and handing over of the vote (see Annex 10).

Furthermore, the consumer vote was sent to the consumers who had applied to participate in the Consumer Conference but had not been selected and to all experts who had been contacted at the beginning about participating in the public hearing. Individual questions from private individuals, institutions and media representatives were and are answered individually.

There was coverage of the conference and the consumer vote in print and online media.

2.8 Summary Part 1: Project management

The work of the consumer group was decisive for the success of the process and its findings: the randomly composed group of consumers of differing age, professional background and gender were all interested in the subject nanotechnology and were curious about the procedure. The open discussion atmosphere, the discussions which were at all times fair and constructive and the disciplined compliance with the narrow time window – this all confirmed the commitment of each individual and reaffirmed the goal "of achieving an impact with this opinion as the expression of civil society, of raising awareness amongst consumers and calling on politicians, scientists and industry to adopt a responsible attitude towards nanotechnology (from the Preamble of the consumer vote). What further confirms the serious nature of the work and the common goal is the fact that all 16 participants stayed on board for the entire process and that not one of them dropped out.

The results of the "Consumer Conference Nanotechnology" in the form of the consumer vote and the experiences in constructive group work during the three weekends all confirm one thing: the possibility for the systematic and structured acquisition of knowledge, for the discussion and evaluation of information, for the weighing up of various imponderables and the carrying over of this knowledge into consumer behaviour.

Hence the initial idea of securing a qualified consumer opinion on questions of nanotechnology in the areas food, textiles and cosmetics via a consumer conference proved to be successful. With this procedure it was possible to identify the consumer requirements to be met by sustainable nanotechnologies.

3 Part 2: Evaluation of the BfR Consumer Conference Nanotechnology

3.1 Evaluation "Consumer Conference Nanotechnology"

The subject matter of evaluation is the "Consumer Conference Nanotechnology". This project was carried out on behalf of the Federal Institute for Risk Assessment (BfR) by the Independent Institute for Environmental Concerns (UfU) and the Institute for Ecological Economic Research (IÖW). It examined the opportunities and risks of nanotechnological applications from the consumer perspective. In the context of consumer health protection the focus was on risk assessment in the areas food, cosmetics and textiles.

Within the framework of the Consumer Conference the group, consisting of 16 consumers[8] from Berlin and Brandenburg examined the opportunities and risks of nanotechnology in a process that spanned several weeks. At two preparatory weekends conducted in a closed circle, the group was introduced to the topic. Furthermore, the main areas were discussed, experts were selected and questions for them were formulated. This was followed by a public final conference during which the invited experts were questioned on the topics. Finally, the group drew up an opinion ("consumer vote") on the opportunities and risks of this technology from the consumer perspective and submitted this to important public stakeholders from consumer protection, politics, economics and industry.

The Consumer Conference was based on the methodology of the consensus or citizens' conferences. Previously, they had mostly been staged in several countries on the national and international level using the model of the Danish "Consensus Conference" mainly on the topic of "genetically modified food". The Consumer Conference focused both on consumer perceptions of the risks of nanotechnology and on consumer requirements to be met by the sustainable development of nanotechnologies.

The main emphasis was on:

- the application areas of nanotechnology in the fields food, cosmetics and textiles with their intended and (possibly) unintended effects;
- elaborating a perception of risks and benefits and management recommendations by consumers and
- channelling these into public debate and indirectly influencing regulatory policy.

The prerequisite to the evaluation undertaken here is knowledge about the fundamental format of the consumer conference (cf. inter alia Part 1 of this report or: http://www.bfr.bund.de/cm/220/verbrauchervotum_zur_nanotechnologie.pdf).

3.1.1 Goal of the evaluation

Evaluation pursues the goal of evaluating the procedure "Consumer Conference". What added value does the procedure offer? How does this added value relate to the resources needed for the procedure? Besides evaluating the Consumer Conference in terms of efficiency and effectiveness, particular attention is paid to the points - fairness (can all consumers take part?), competence (were all the important topics addressed, was appropriate account taken of the scientific findings?) and transparency (is this procedure comprehensible for all participants and third parties?).

This evaluation provides insight into the importance and function of consumer conferences for the work of BfR. Furthermore, action recommendations are derived for possible future

[8] When the term "consumers" is used henceforth, then this refers to the consumers who took part in the Consumer Conference.

consumer conferences. This study could not examine the extent to which the consumer vote was taken up and used by politicians.

3.1.2 Evaluation method

The evaluation was carried out from 1 July to 1 October 2007. The study was based on 14 qualitative telephone interviews with participants in the Consumer Conference. All 16 participating consumers received a written request from UfU for their agreement to an interview or a written survey. Three of the consumers agreed to give an interview. These interviews were supplemented by four further telephone interviews with the organisers and the executive organiser (BfR, IÖW, UfU), the main moderator of the final event, two members of the advisory committee and four invited experts from the panel at the main event. All interviews were conducted by phone using a questionnaire-based format. The questionnaire was co-ordinated with BfR (see Annex) and broken down into three sections: evaluation of the “run up to the event”, evaluation of the "course of the event" and "satisfaction with the results".

3.2 Functions and remit of consumer conferences

The consumer conference procedure is closely linked to the concept of consensus conferences that have been well researched. This concept involves the participation of model lay decisions in political decision making processes about issues of relevance to the environment and technology (overviews in Durant and Joss 1995; Andersen 1996, p. 206ff; UK National Consensus Conference 1994). The consensus conference has the following structural characteristics:

- The discussion organiser obtains contact data from the local residents’ registration offices and contacts citizens by post and asks whether they are willing to participate in a consensus conference on a specific subject. Between 10 and 15 people are selected from those who respond to the request. This roughly corresponds to a cross-section of the population in terms of age, gender, education level and range of professions.
- The selected participants in the consensus conference are given sufficient material about the question on which they have to decide. The material consists of background reports, newspaper articles, opinions of stakeholders and other relevant information.
- The members of the consensus conference come together at two weekends for preparatory meetings. At these meetings they exchange their impressions, demarcate the main problems, formulate questions for experts and select, with the help of the discussion organisers, the experts to whom they wish to put questions.
- The consensus conference itself is staged on three consecutive days. On the first day the participants put their questions to the invited experts. This is like a classical hearing. The questions are only put by participants in the consensus conference. The hearing is public. It is expected that the statutory decision makers (for instance members of parliament) attend as observers. The question session can be continued on the morning of the second day; in some cases questions may be permitted from the audience. In the afternoon the members of the consensus conference come together and draw up a short report with their recommendations. On the third day these recommendations are taken back to the experts. At a public meeting the experts can provide additional information (about substantial errors or inadmissible generalisations); however they are not entitled to correct or change the report. The participants in the consensus conference then have another opportunity to fine tune the recommendations in the light of the discussions with experts. Late in the afternoon on the third day the results are made public and explained at a press conference.

The individual phases of the consensus conference can be further extended or modified. The main component of every consensus conference is the involvement of laypersons as experts in the evaluation process and a public hearing which is closed to the media and political public. This procedure has mainly been used in Denmark by the National Board of Technology for problems in regulating genetic engineering, motorised road traffic, sustainable agriculture, information technology and risk analyses for chemical supplements in foods (Andersen 1995, p. 91). Similar procedures have also been staged in Norway, Sweden, Switzerland, France, Germany, Australia, Japan and the United Kingdom.

Consensus conferences have proved to be a robust, time-restricted and cost-effective variant of a discursive decision-making process. Previous experience with this tool can largely be deemed to be positive according to an empirical study by Simon Joss (Joss 1997). However there are some problematic points. Selection of participants is done on the basis of two criteria: "self-selection" by answering the invitation and "external selection" according to representative criteria by the organisers. Given the low number of selected participants, this certainly cannot be called a representative cross-section of the population. Nor do the advocates of this procedure claim that that is the case. Whether the participant composition has the desired heterogeneity is questionable despite the very best efforts to make a fair selection. Furthermore, in the case of a small group the influence of individual personalities should not be underestimated. Depending on how the group is composed, the results will scatter the recommendations[9]. Hence it is very difficult to assess the legitimacy of recommendations, particularly in the case of far-reaching collectively binding decisions. In contrast to the planning cell and citizens' juries, special importance is attributed to the imparting of technical competence to the participants in the consensus conference. Thanks to the feedback option possible mistakes can be uncovered and erroneous conclusions can be corrected. Nevertheless, the pressure for consensus in the conferences can lead to only trivial statements being accepted as the common denominator and the trend towards "mediocrity" being the strategy that attract the greatest consensus. The consumer vote in this case (Chapter 2.6) does, however, contain truly innovative proposals and, in some cases, courageous wishes for regulation.

The consumer conference only deviates to a minor degree from the model of the consensus conference. One area where it does differ is the selection procedure of consumers. It is also borne by the idea that the fundamental interests and classifications of consumers can also be represented by just a few individuals. This is based on the idea that it is not the diversity of opinions but the commonalities within the framework of the equal opportunities of those concerned that characterises the assessment of technologies or risks/opportunities. If one shares this opinion then consumer conferences can produce valid and generalisable statements even when the number of representatives is low. Nevertheless success depends on consumers making a judgement in their role as consumers largely independent of their preferences, interests or alliances. Whether this succeeds depends to a large degree on the structural conditions which are the subject covered in the next Chapter of this report.

[9] As far as we know no consensus conferences have been staged so far with parallel working groups as is the case for planning cells or citizens' juries. For that reason the question about the reliability of the method (similarity of results in several conferences organised in parallel) cannot be answered.

3.3 Results of the empirical evaluation on the basis of the survey

The telephone survey of participants is the empirical foundation for the following comments.

3.3.1 Evaluation of activities upstream of the event

Goal of the Conference
According to the executive organiser, the goal of the conference was to invite consumers to reflect on risk and opportunity perception, to draw up action recommendations and to carry these over into public debate.

One side effect expected by the executive organiser was information for the core task of risk assessment[10] i.e. to establish for which sub-aspects of nanotechnology consumers call for additional risk assessments. The extent to which the results of the conference, if they were taken up by politicians, were also to forge a conceptual bridge between assessment and management, which takes into account the legitimate wishes and desires of the public, had not been defined upstream of the event. The handing over of the citizens' vote to politicians was, however, an important and planned part of the procedure.

Consumer selection and invitation procedure
6,000 randomly selected individuals from Berlin and Brandenburg were contacted (from both rural and urban areas). Almost 1% of those contacted responded and indicated their interest. The organisers suspect that the reasons for the relatively low response were the Football World Cup and the summer break. From the 48 interested persons a group of 16 was selected by drawing lots following systematic pre-selection (age and gender). The random procedure was deemed to be particularly important by the organisers:

"This principle of random selection was important for the group dynamics. This meant that the situation was deemed to be equally "strange" by all consumers and they could react to each other in an unprejudiced manner."[11]
In addition the organisers made the following comments on the selection procedure:

"We had to restrict ourselves to the region Berlin and Brandenburg because of the limited resources available. But that was not a problem because Berlin is highly heterogeneous."

"It would have been good to have one school pupil as well. But that was not possible with our pool. The youngest participant was 20."

The first letter (invitation) to consumers was praised by the consumers interviewed on the phone. Nevertheless, the respondents were initially sceptical. Here we have a verbatim quote from one of the consumers:

"First of all I phoned before I committed to taking part. I was not familiar with BfR as an institution and so I wanted to make sure that this was serious. Since a "Dr" had signed the invitation, this indicated that it was serious but that it's better to make sure. After my phone call I was pleasantly surprised. I had the impression that I could really influence politics."

The formulations from the invitation letter – "This vote will be handed over at the end to representatives of science, politics and the general public." – motivated all consumers to participate.

[10] Scientific process to determine the adverse consequences and their causes and to measure probabilities and scale of damage.
[11] The quotations given below have been selected by way of example.

"My main motivation for taking part in the event was to influence politics. In addition it was important for me that I wouldn't have any expenses for hotels etc."

The selection process led to a heterogeneous composition of the group in terms of age, gender and profession. The interviewed consumers and organisers praised the composition of the group as being highly heterogeneous and successful.

"At our first meeting my initial reaction was that such different people would never be able to work together. But once we had come a bit closer to one another, the discussion culture was excellent and effective."

In particular the members of the advisory committee interviewed said that the selection process had the disadvantage that people were only selected from one region but they did not fear any distortion in respect of the results. One member of the advisory committee said that the procedure had been very efficient in terms of costs and benefits.

Convocation of the advisory committee
The convocation of an advisory committee was deemed to be very helpful by the organisers in order to be able to tap into the knowledge of the participating experts for the procedure. The members of the advisory committee were interviewed individually on individual questions by e-mail by the organisers. The organisers and members of the advisory committee also confirmed that the advisory committee strengthened the legitimacy of the procedure. One organiser who was asked commented:

"Co-ordination with the advisory committee by e-mail was sporadic, efficient and uncomplicated. In addition to making comments on the procedure the advisory committee also put us in touch with experts. That helped us to find recognised experts in the scientific community."

Demarcation of the topic in the run up
BfR stipulated the applications of nanotechnology that were to be discussed: food, cosmetics and textiles. This was deemed to be positive by all those interviewed as discussion focused efficiently on the stipulated topics. They also praised the reasons given for the selection of the topics. Hence the consumers were able to understand that their forum could not discuss all application areas (for instance military uses were not taken into account). One consumer commented:

"You have to select and limit the topics in order to avoid having to select the topics with the group. This meant that we had an opportunity to discuss specific aspects in-depth later. That was a considerable advantage."

3.3.2 Assessment of the preparatory weekends with consumers

Introduction to the topic
The consumers explicitly praised the introduction to the topics. This was done by a central introductory presentation, through the mailing of written documentation and by two expert presentations. The typical feature of consumer conferences - relatively long breaks between the working sessions - was deemed to be particularly important (six weeks).

"After our first meeting I was a bit swamped. The introductory presentation was very extensive. But this feeling disappeared very quickly because I had six weeks to examine this topic. During that time I talked a lot to friends and acquaintances. Based on the documentation and additional Internet searches I was able to prepare myself for the next meeting. Our contacts were also available during that period. That helped me very much to get to grips with this topic."

The framework programme and the interaction during the introductory events were deemed to be particularly important by participants and organisers. One consumer said:

"There was enough time to get to know one another in a relaxed atmosphere. For example we had a barbecue and played familiarisation games. That really helped me to be able to speak freely in front of the group. After all we were a very heterogeneous group."

"It was very important to create a discussion framework based on trust so that the participants could speak freely. That was done very well. If journalists had been around from the very beginning we wouldn't have been able to be so honest."

Besides the preparatory meetings the consumers felt that they were well informed:

"After the introductory presentations[12] and our discussions we were in a good position to select experts and formulate questions."

Working methods used
The methods used like moderation and small group work were praised by the consumers and deemed to be particularly important for the success of the procedure.

"The work in small groups created a pleasant atmosphere where we trusted one another to ask all kinds of questions and to make comments. Everything that was said was also taken into account. In addition the "quiet ones" in the group were encouraged by the moderator to participate in the discussions."

"The work in the groups and the ensuing presentation in the plenary were very efficient. The work of each small group was approved by the plenary. This meant that in a short space of time the topics could be dealt with in a very comprehensive manner."

"Support from the organisers to put something down on paper was great. They did all the hard work. We could completely concentrate on the topics."

"The group work was optimal. With 16 there were enough people in order to be able to work efficiently in small groups. But even in the plenary everyone had a chance to speak."

Expert selection
One important characteristic of the consumer conference is that the consumers themselves select the experts for the procedure. This does mean a bigger work load for the organisers since they are forced to contact far more experts than will be needed. This is also dependent on the willingness of the experts contacted to be "uninvited" at a later date if the consumers do not "call for" the corresponding person. The consumers selected experts on the basis of short profiles prepared by the organisers. This organisational input is essential, in the opinion of all those questioned, if the choice of experts is to be left to consumers.

One organiser commented:

"The Achilles heel of the procedure is the pre-selection and selection of experts. We invested a great deal of energy in order to make a good choice."

"We had to be careful not to offer consumers too many experts. Otherwise that would have been very difficult to manage in the stipulated time available."

[12] Niels Boeing (business journalist), Birgit Huber (German Cosmetic, Toiletry, Perfumery and Detergent Association) and Ulrich Petschow (Institute for Ecological Economic Research)

The option of being able to select the experts themselves was deemed to be essential by consumers. One participant voiced the opinion that company representatives had been slightly under-represented in their pre-selection. According to the organisers company representatives were less willing to take part in the selection procedure than other groups of individuals contacted. Two consumers were of the opinion that there were not enough industry representatives:

"On the basis of the prepared profiles we were able to get a good idea of which experts we wanted. That was well done. Unfortunately the company representatives were slightly under-represented."

Furthermore, company representatives had reservations because of company policy about participating in the consumer conference.

One company representative commented:

"For us it was not clear whether we should send a natural scientist or an employee from our communications department. Both options meant advantages and disadvantages."

3.3.3 Assessment of the final weekend (expert survey, consumer vote)

Moderation
Both consumers and organisers praised the fact that it was particularly relevant for the success of this event that the moderator of an expert round of this kind have both expert knowledge on the subject of nanotechnology and professional moderation methods. The three consumers interviewed explained:

"The moderator interrupted the experts at the right moment, for instance when they used too many technical terms and a kind of "translation function" was needed between the experts and us."

"The discussion rules and the planned procedure were explained very well to all those concerned. An appeal was made to the fairness of participants and the time constraints were explicitly explained."

Expert survey
In the opinion of the consumers and organisers the questions developed upstream could be sufficiently answered by the expert panel.

However the consumers did complain:

"More industry representatives should be invited and those who are there have to put their cards on the table and report what they are planning for the future".

One consumer stressed one positive aspect:

"As not all the experts stuck to their position, we could discuss the pros and cons."

The invited experts assessed the quality of the questions put by the consumers as good:

"The consumers asked many relevant questions. In some areas they had similar knowledge to mine. It was very impressive to see that the very different consumers had been able to acquire so much technical knowledge in a relatively short space of time."

One expert commented:

"Of course there was a certain degree of naivety in the questions of the consumers. But generally speaking the standard was good."

Drawing up the consumer vote

The work mood was deemed to be constructive and very positive by consumers and organisers:

"There was a good atmosphere. We worked together as colleagues. Everyone listened to everyone else. We could even have constructive disputes without people feeling they were being attacked."

"There was a highly constructive and very positive atmosphere."

"We sat together until late in the night and drew up our vote. We wanted to do this "properly"."

"We had achieved the goals we had set ourselves. We now all knew what we wanted to know in order to form an opinion. Now we had to formulate it."

3.3.4 Assessment of the overall procedure and the consumer vote

The members of the advisory committee and experts interviewed deemed the quality of the consumer vote to be very good and comprehensive. Hence, the relative discussion points about nanotechnology are reflected in the consumer vote. In addition the procedure, independently of the quality of the vote, is deemed to be important by the members of the advisory committee as procedures of this kind in politics have important symbolic power for the legitimisation of decisions.

The interviewed experts rated the results (consumer vote) as good. Existing scientific findings were taken into account to an appropriate degree in the discussions. According to the experts interviewed, few new arguments or aspects were advanced but the different weightings by consumers were deemed to be of value.

However, the importance of the vote and the procedure was not clear to one expert:

"The questions of the consumers were very good in terms of quality. But they didn't reinvent the wheel. Hence when I look back on it the advantage of an event of this kind is not clear to me."

The experts interviewed rated the selection procedure used as good when it came to the heterogeneous composition of the consumer group but not when it came to achieving representativeness.

"I am only familiar to a limited degree with the methods of the consumer survey. Are there consumer survey options which are more representative? Then perhaps the event would have a greater impact on the public at large."

"I think that in addition to qualitative research, quantitative surveys should also be carried out."

Another critical comment by an expert:

"For me as an expert it was not clear how the procedure moved from the expert survey to the consumer vote. In the discussions there were foci which were not necessarily reflected in the vote."

Three of the experts interviewed made the following comments about the cost benefits of the Consumer Conference:

"The event costs are peanuts compared with the opportunities and risks linked to nanotechnology."

"If nanotechnology changes the world, then the costs of this consumer event are ridiculous in comparison. Events of this kind should definitely be staged because they are very enriching. It is desirable for events of this kind to also be broadcast on radio or television. After all there are so many Bundestag debates on TV."

All respondents thought it was extremely important to undertake a review of the event.
One expert commented:

"Conferences of this kind are definitely worthwhile. However you have to invest a lot of time and money in the review of the event in order to optimise the results. The results don't find their way on their own into schools and political circles. You need the help of professional agencies. That would definitely be worthwhile."

Another expert:

"The conference was particularly worthwhile because you could take the results to politicians!"
One industry representative:

"A procedure of this kind is helpful to avoid hysteria in the population at large. The results are of major value. But you would need to publicise this far more. For example the filmed final conference could be distributed to schools."

"The results are good but won't achieve a great deal."

The public final event and handing over of the consumer vote were deemed to be successful by all participants. One consumer commented:

"I was really please by the handing over of the consumer vote. It was a great feeling. All 16 of us were behind the result and are convinced of its quality."

"The impact for me was far better than expected. The experts surprisingly gave us a great deal of their time. It was great to see how important this was for them even on a Sunday. Hence we also tried to do our very best."

Experts and members of the advisory committee called for even greater involvement of the general public in order to ensure the results are used:

"More efforts should be made from the very beginning to involve politicians, journalists and mass media in the procedure in order to increase the binding nature of the results for politicians."

One consumer commented:

"Of course it would have been good if politicians, whom we were familiar with from radio or television, had been present when the vote was handed over. But it was relatively high level

all the same. The President of BfR was there and promised us that they would keep us up to speed about the next steps. Hence I am looking forward to the next meeting. So far I've only received a press release."

Finally all the respondents said that further conferences should be conducted in future ("for example on climate change") and that they would be happy to participate again.

3.4 Evaluation of the procedure and results in the overall presentation

The data collected during the survey were then assessed on the basis of five relevant evaluation criteria. The five selected criteria are theoretically founded and have already been tested empirically on several occasions (Renn 2004):

- Effectiveness (were the set targets achieved?)
- Efficiency (were these goals achieved with a justifiable amount of time and money?)
- Fairness (were all interests fairly treated?)
- Competence (were all important topics touched on, were the scientific results sufficiently taken into account?)
- Transparency (were the steps clear and transparent for all the parties concerned? Was the procedure transparent for outsiders? Could outsiders gain an impression of the process?)

Effectiveness
The consumer vote underlines the fact that the goals set by BfR were achieved. This was about getting consumers to develop a perception of the risks and opportunities as well as the action recommendations which would then be taken over into public debate. The consumer vote encompasses consumer perceptions of the risks and opportunities, and the action recommendations. The debate was also launched and attracted a considerabe amount of media interest (cf. the press kit available to BfR).

In the opinion of consumers their own expectations of the procedure were considerably exceeded and, with the consumer vote, the goal they had set themselves had been achieved.

Individual opinions of the advisory committee members and experts do, however, show that the procedure in their opinion is only "effective" when it is taken up thereafter by politicians. The extent to which that happened was not examined in this study.

Efficiency
Efficiency refers to the use of resources compared with the results. A lot was done in a relatively short space of time. The procedure for selecting participants contributed to increasing efficiency as it only covered Berlin and Brandenburg (instead of being nationwide) and nevertheless a heterogeneous group was created.

The organisation form and methods of the consumer conference enabled consumers and experts to co-operate effectively (work in small groups; the questions were sent in advance by e-mail to the experts, etc.).

According to the participants they were able to acquire considerable knowledge in a short space of time. The experts were efficiently recruited as one of the organisers already had good contacts to the relevant players in the field of nanotechnology.

Fairness
The participants particularly praised the fair way in which they dealt with one another. Each one of them could speak whenever he/she wanted. The decision making methods in the plenary were praised by all consumers. Individual opinions were always taken into account and noted in the vote.

Another aspect is whether the groups of relevance for the procedure all had equal access to the event. This was not completely the case. Firstly, the selection method chosen led to a relatively small group of consumers. An additional parallel group would have increased the level of fairness. A fair participation procedure should give each potential participant the right to take part in the decisions. Given the low number of consumers involved, the criteria of fairness and legitimacy were only met to a certain degree. It is questionable whether the votes of the consumers involved can really be deemed to be representative for consumer interests.

Furthermore, the selection of experts for the procedure was primarily done through the contacts of the organisers and advisory committees. The experts were, therefore, sought by the organisers. Hence experts who were known to them had easier access to the procedure.

Competence
All participants had the communication skills to take part in the procedure. The experts interviewed confirmed the good level of questions asked during the discussions. The selected experts brought with them a gap in competence in terms of industry representatives. The consumer vote is deemed to be comprehensive by the experts. The current state of scientific knowledge is appropriately reflected in the vote.

Transparency
Consumers and experts were clear about their functions in the procedure. However not all participants were clear about the relevance of the procedure for politicians. The statements of some industry representatives were deemed by the consumers to be incomplete or lacking in transparency (the suspected reason was thought to be trade secrets). The procedure was rendered transparent for third parties by means of considerable press work.

3.5 The potential added value of consumer conferences for BfR

- Consumer conferences can provide insight into how the latent tensions between risk assessment and management can be bridged by experts and regulatory authorities on the one hand and risk perception by the public at large on the other.
- The procedure did not have the goal of making a contribution to risk assessment itself; however consumer conferences can supply additional information on possible social and cultural risks.
- Consumer conferences can provide insight into which risk assessments are relevant for citizens. For instance the subject food attracted considerable interest amongst consumers and they articulated the need for additional research on risk assessment. But then this has to be taken up[13].
- In comparison to quantitative surveys, consumer conferences can more efficiently show a more detailed image of the mood in the population on a selected topic which is, however, not representative.

[13] The working group 2 "Risks and Safety Research", within the framework of the "NanoDialog 2006-2008", took up the subject of nanomaterials and nanofood in its area of work in July 2007. The NanoDialog is co-ordinated by the NanoCommission, which was set up in November 2006 by the Federal Ministry of the Environment.

- What is of particular interest in consumer conferences is not just the input of "new" arguments into the debate but also the weighting of topics of relevance for consumers.
- Consumer conferences can help to establish trust amongst consumers in state risk management. By means of these activities BfR becomes visible to citizens and fulfils its statutory remit on risk communication.

3.6 Planning and organisation of future consumer conferences

The following points were deemed to be of relevance for the organisation of a consumer conference:

Specify the importance of the procedure in great detail:

From the very outset it should be specified why the procedure is to take place. The motivation and goals of consumer conferences can be very diverse but this must be specified from the very outset so as not to awaken any false expectations concerning the importance of the procedure amongst the participants. The consumers who took part in the conference were able to provide details on the quality of their results and thought it was very positive that a review meeting was immediately arranged.[14] At this meeting the participants hoped, amongst other things, that they would be informed about the importance of the procedure in the political context.

If the results are to be taken over in political circles, then politicians and the media in particular must be involved early on in order to guarantee public awareness of the results. Some of the consumers interviewed also called for this: greater efforts should be made from the very outset to involve politicians, journalists and the mass media in the procedure in order to make the results more binding for politicians. If appropriate an institution could be commissioned to undertake the public relations work in order to push for the systematic publication of the results in press releases.

Selection of consumers:
The quality of the letter sent to consumers influences to a considerable degree their willingness to participate. The text should aim to create trust and highlight the possible political impact.

Framework programme:
The surveys of all consumers revealed that to overcome differences (which result from the heterogeneous composition of the group) team-building exercises are very good and are an important element for group dynamics.

Pre-selection of experts:
A good pre-selection of experts constitutes a challenge. It makes sense to call on an expert from each area. The advisory committee can be very helpful in this and act as a multiplier. It is necessary to contact industry representatives early on and to explain the benefits of the event for industry.

Moderation/working methods:
The moderator of the main even should be qualified and have expertise on the subject in hand. Hence he/she will be able to ask specific questions if consumers have not understood something.

Announcement of the results:

[14] It should be mentioned here that a review event was staged with consumers in December 2007.

It makes sense to push for the publication of the results beyond political circles, for instance in schools as a video or the like. These measures must be prepared early on.

3.7 Summary Part 2: Evaluation

The need for participatory debate, particularly in the area of consumer politics, results from the fact that collective decisions increasingly have far-reaching temporal and spatial consequences, our knowledge about interdependencies is becoming increasingly complex and specialised and, at the same time those affected by the decisions, want to have a say in the shaping of their world (Beck 1986; Fiorino 1989). Basing decisions solely on complex expert knowledge violates the fundamental right to a fair balancing of interests between various parties; decisions taken only on the basis of the participation of stakeholders opens the door to dilettantism and leads to action consequences which no-one can want. The rational, structured involvement of the people concerned tries to do justice to both requirements. The action consequences as well as the side effects must be thought through and the related values and preferences must be treated fairly and appropriately.

Although there is agreement that the participation of the people concerned should be an integral part of integrated consumer protection, the question is highly controversial about who may and should participate with what full powers and according to what procedure in decision-making. Firstly, it must be guaranteed that there is adequate representation of those concerned (subject to the condition that not all those potentially affected can and want to participate). Secondly, it must be ensured that the participation of those concerned does not constrain or negate the efficacy of expert knowledge as an essential element of decision making (cf. Dahl 1989, p. 119ff).

First problem: Who represents those affected? Self-appointed representatives of the people or interest groups can certainly speak for some of those concerned but definitely not for all. A participation method based on the voluntary principle (everyone is invited) generally leads in practice to distortions of true citizens opinions because only the activists take up these invitations (Reagan and Fedor-Thurmon 1987, p. 107; Cupps 1977). In the case of procedures in which interest groups are invited to a discussion round, non-organised citizens are normally excluded. A fair participation procedure should, by contrast, give every potentially affected person the right to take part in the resolution phase. The consumer conference does enable consumers to represent themselves and not just their organisations. However the question must be asked whether the selection of 16 people is sufficient in order to reflect the diversity of consumer interests. For the purposes of legitimisation, it would certainly have been better to set up several parallel consumer fora based on the model of the planning cells and then to clarify which common assessments had been prepared by these groups independently of one another and where there were major differences. However, it must also be borne in mind that a solution of this kind would have meant a far higher financial input.

Second problem: How can expert knowledge and the participation of lay persons be reconciled? Case studies from the literature clearly show that many participation procedures fail at this obstacle (Rosenbaum 1978, p. 48; Cupps 1977; Aron 1979). Often the necessary expertise is not taken into account or only insufficiently. In some cases the participants bring with them their own prejudices or anecdotal experiences into the deliberation process without being willing to take into account the expert knowledge on offer. The procedures are frequently inefficient and expensive without this investment leading to competent recommendations. Furthermore, participation can also achieve the opposite of what is intended: a sharpening of conflicts, increase in protests and emotional hardening of positions which means that nothing functions any more (Jasanoff 1982). However, the literature also offers evidence of the contrary: for instance citizens have helped – by drawing on specific experience from their daily lives - to improve the quality of planning. They have introduced knowledge that

was not even available to experts or have challenged the unjustified self-certainty of experts (Aron 1979, p. 480; Laksmanan 1990; Krimsky 1979; Dienel 1992).

By linking the expert survey and background information, a high number of learning processes could be initiated in the case of the consumer conference evaluated here. Furthermore, the interviews with experts confirmed that the results of the consumer conference also in the opinion of experts were appropriate, substantial and balanced. There were concerns about an overly sceptical stance, in the opinion of experts, about nanoparticles in food. This criticism can, however, certainly be attributed less to inadequate knowledge amongst the consumers interviewed and more to assessment differences.

Third problem: The results of a participation procedure must be tenable and justifiable vis a vis the participants themselves, decision-makers and the public at large. Aside from referenda, all formal procedures of citizen participation have the disadvantage that only some citizens can actively take part in the procedure whereas the vast majority remains passive and only participate as external observers (Renn and Webler 1996). No matter how efficient, fair and competent a participation procedure is, it will not develop any political efficacy if it does not succeed in familiarising political decision-makers and the interested general public with the process and the results of the participation and in instilling in decision-makers in politics, industry and society trust in the power of lay judgements. So far up to now there haven't been enough practical instructions. In the eyes of the media the participation of citizens in the shaping of policies is not sensational enough for this message to be broadcast widely. Politicians are very distrustful about the demand mentality of the population and it is very difficult to convince them of the opposite. All too frequently the votes of participation methods are accepted with thanks by the sponsors and then end up in the notorious bureaucrats' drawers without anyone taking on board the recommendations. In this case the public institution explicitly formulated its own goals and accompanied the procedure in a very intensive manner in order to gain insight into how to improve its own work. In this instance the results are, therefore, input for BfR risk communication on the subject of nanotechnology. For instance the focus established by consumers on nanofood was taken over into the communication work of BfR.

It is still too early to tell whether the recommendations of the Consumer Conference will also have an added "impact" in the political context. The announcement of the votes in a press conference and the general press work indicate the wish of the executive organisers to scatter the results amongst the public at large. The scale of the activities, however, leads to doubts whether after the high impact presentation there will be any political implementation of the recommendations.

If there is no response from the executive organisers to a consumer vote then resources have been wasted which could have been put to other better use. Furthermore, this would lead to a gradual loss of the trust which had been established by involving lay people in the regulation of risks of daily products (Fisher *et al.* 1993). To counteract this, BfR organised a review meeting as an important part of the procedure. At that review meeting citizens were informed about the importance and effectiveness of their work. BfR, in turn, gained insight into the importance which the participants attributed retrospectively to the overall procedure. What is required here is great sensitivity and honest self-examination. Not everything can be implemented 1:1 – that would be contradictory to the principles of representative democracy and the legitimisation principle of the regulatory authority. Active, committed efforts must be visible for everyone to constructively take up the essence of the recommendations in their own actions.

Fourth problem: Is this procedure worth it? Consumer participation procedures are both time and cost-consuming. Frequently, the well-minded meetings between concerned or affected citizens are reduced to non-binding debating societies or self-righteous tribunals to condemn

the "evil" world. Conflicting goals are not seen and obvious limits through legal provisions or physical factors are ignored. Participation procedures must also be efficient. The results of participation must be appropriate to the effort involved. We purposefully included the criterion of efficiency in this evaluation. Many case studies from inside and outside Germany have shown that these procedures can be conducted efficiently and in a targeted manner without impairing fairness and mutual respect. Our analysis has shown that there were some deficits in fairness which could have been overcome without having any negative knock-on effects on other important evaluation criteria. Nevertheless, bearing in mind the relatively low volume of funding used for the overall procedure, this procedure can be deemed to be highly efficient.

So what conclusions can be drawn? If the goal of a consumer conference is to explore some concerns, worries and tips from concerned citizens, then the concept evaluated here can be deemed to be very positive (on the prejudices and disadvantages of consensus conferences see: Durant and Joss 1995, Andersen 1996). It largely provides competent, consistent and transparent results. Furthermore, the procedure is cost-effective and can be implemented in short periods of time. Because of the low number of consumers involved, the criteria of fairness and legitimating are only met to a limited degree. Whether the votes of the consumers concerned can really be deemed to be representative of consumer interests is questionable. If that is the goal then use must be made of other procedures (for instance several parallel citizens' fora). These more comprehensive procedures will not supply representative results in the statistical sense of the term either (but this is of course not necessary) but they can extend the basis for the diversity of possible attitudes and establish a consensus in a more valid manner.

For BfR the conference offered considerable benefits in terms of information for its own work. In principle, it is absolutely essential for the executive organisers to see the participation measures not primarily as a PR task or as a means of increasing its legitimation but as a benefit for its own work. Only when institutions are willing to learn from the votes and deliberations of the participating citizens does participation make sense. No evaluation can examine this inner willingness. This is where the executive organisers are called on to examine the purpose of the participation measures. If they want PR or more legitimation for their own work then there are better alternatives than staging participation procedures. If they really want to draw inspiration for their own work from the independent wishes, preferences and values of the people concerned, then participation procedures are the best form for achieving that goal. Amongst the participation options the consumer conference used here is a particularly cost effective form. It does not achieve optimum results in terms of all criteria but procedures which promise that are far more complicated.

We are convinced that investment in the judgement and competence of citizens will prove to be a reliable and future-centric capital investment on the market of political opinion-forming. We only hope that public agencies and politicians will be capable of using this capital investment in a wise and appreciative manner.

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5 Overview of Annexes

5.1 Annex 1: Invitation letter

BfR
Risiken erkennen – Gesundheit schützen

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16.01.2007

Invitation to the "Consumer Conference: Nanotechnology"

- We cordially invite you to participate in an unusual project in Germany. On behalf of the Federal Institute for Risk Assessment (BfR), the Independent Institute for Environmental Concerns (UfU), together with the Institute for Ecological Economic Research (IÖW), is staging the *first nationwide consumer conference* on *nanotechnology* in the course of the next few months.

  Nanotechnology is deemed to be one of the key technologies of the new century. Already today consumers come into contact with products, normally without realising it, produced with the help of nanotechnological methods, be it in cosmetics, foods or textiles. And the market for nanoproducts is growing rapidly. Only with the nanometre scale is it possible to produce substances with completely new properties: car paint that is scratch resistant, ties that are dirt repellent and sunscreens offering improved protection against UV rays. But what are the risks and hazards from nanoproducts? How will they change our daily lives? In what areas do we not know enough about the effects of these new nanomaterials?

- The "Consumer Conference: Nanotechnology" will give you an opportunity to express your opinion on nanotechnology and to help shape the social debate on this subject. You will put questions to reputed experts and prepare a vote on the opportunities and risks of nanotechnology. At the end of the process this vote will be handed over to representatives of science, politics and the general public.

- If you would like to participate, you will find more detailed information on the back of this letter and in the registration form. However you should not pursue any professional interests with your registration and be able to come to Berlin on all the stipulated dates. If you are interested, please complete and return the participation form by 21 June 2006. The consumer group will be randomly selected from the returns. We will inform you by 7 July 2006 about the results of this process.

- Participation in this project is on a voluntary basis. However you will be rewarded with new findings and many encounters with interesting people. Of course, we will assume the costs for your travel, food and accommodation.

- We look forward to your support as this involves civil commitment and democratic participation.

Sincerely yours,

Michael Zschiesche
Chairman of the Board, UfU

Dr. René Zimmer
Project Co-ordinator, Federal Institute for Risk Assessment

Encl.: Registration form, rear side

Frequently asked questions about the "Consumer Conference: Nanotechnology"

What is a consumer conference?
The consumer conference permits the direct participation of citizens in the public debate of a consumer-relevant and controversial subject. It is based on the model of the consensus conferences from Denmark. There have now been three conferences of this kind on the subjects genetic diagnosis, stem cell and brain research. The participants work on a voluntary basis in a group of approximately 18 people. They discuss the subject with the help of an experienced moderator amongst themselves and with experts, forming an opinion, formulating questions and publishing an opinion (vote) at the end.

Who finances the "Consumer Conference: Nanotechnology" and why?
This project is staged on behalf of the Federal Institute for Risk Assessment (BfR). BfR is the scientific institution of the Federal Republic of Germany which elaborates reports and opinions on questions of food safety and consumer health protection. Since new materials produced using nanotechnology are increasingly being used in consumer products, it is also about protecting the health of consumers and estimating the risks of nanotechnological products. In this context the recording of a qualified opinion of consumers on nanotechnologies is an essential precondition for BfR's evaluation work.

How is the consumer conference staged?
The consumer conference consists of three phases: on two preparatory weekends (9/10 September 2006 and 14/15 October 2006) participants will get to know each other and receive an easily comprehensible and competent introduction to the scientific, technical and social aspects of nanotechnology. The group will then formulate questions which it wishes to put to selected experts. At the public final conference from 17 to 20 November 2006 the invited experts will be confronted with the questions on nanotechnology. Following that the opinion prepared by the consumer group will be presented to the general public and political and scientific representatives.

How are the participants selected?
The consumer group consists of 18 people. 6,000 randomly selected people from Berlin/Brandenburg were contacted by letter – in full compliance with statutory data protection provisions. The group was to be composed in such a way that it covered, if possible, different ages, genders and professional activity.

How do I overcome the obstacles to participation?
The prerequisite for participation is that you can come to Berlin for all three dates. Travel, accommodation and food expenses are borne during the three weekends. For the final conference you would have to plan one week day to participate in the consumer conference. If you are in employment, you could perhaps apply for educational leave, special leave or release from duties. We are happy to help you clarify these questions. If you need someone to look after your children we will look for a solution together with you.

Can I pass on this invitation?
Unfortunately, no. Only you have been selected through the random process. If you are prevented from participating then you can still make a contribution: firstly by talking to family, friends and neighbours about the project and about nanotechnologies; secondly by coming to Berlin for one of the three days of the public final conference.

Who is my contact?
The following contacts are available for any questions you may have:
Michael Zschiesche 030 4284 9936 recht@ufu.de Fax 030 428 00 485
Silke Domasch 030 4284 9938 silke.domasch@ufu.de
www.ufu.de/verbraucherkonferenz.html

Verbraucherkonferenz Nanotechnologien 17. - 20.11.2006

Participation form

The "Consumer Conference: Nanotechnology" invites citizens from different professions and social origins to Berlin to prepare a joint opinion on nanotechnologies and present it to the general public. Participation is on a voluntary basis. However we will of course bear your travel, accommodation and food costs. The precondition for participation is that you can come to Berlin for all the conference dates:

Saturday, 9 September, 9am up to Sunday, 10 September 2006, approx. 5pm
Saturday, 14 October, 9.30am up to Sunday, 15 October 2006, approx. 5pm
Friday, 17 November, 6pm up to Monday, 20 November 2006 approx. 2pm

If you wish to participate, please complete and return the participation form by 21 June 2006 in the enclosed envelope or by fax to the following address:

Unabhängiges Institut für Umweltfragen e.V. Fax: 030 428 00 485
Keyword: Consumer Conference
Greifswalder Str. 4, 10405 Berlin

The group will consist of 18 people. Participants will be randomly selected from the replies. You will be informed of the result of this selection by **7 July 2006**.

Yes, I can come to Berlin on all the stipulated dates ☐

I am ☐ Female ☐ Male ☐☐ Age

I was born in _____ (Place)_____ (Region)

My profession
☐ Full or part-time employment
☐ Currently work as_____
☐ Housewife/houseman/parental leave
☐ Other _____
☐ Pensioners/early pensioners
☐ Pupil/student
☐ Currently unemployed

Why I would like to participate in the "Consumer Conference: Nanotechnology":

_____
_____

My address (please complete all fields!)

First name _____
Surname _____
Street/house number _____
Postal code/place _____
District/town/community _____

Tel. private _____
Tel. office _____
Fax _____
E-mail _____

Data protection:
All details are treated strictly confidentially and solely used to select the participants for the first nationwide consumer conference. All personal details will be destroyed immediately after the conclusion of the conference.

5.2 Annex 2: Possible experts (in alphabetical order)

Dr. Johan S. Ach, Centrum for Bioethics, Münster University

Dr. Jan Beringer, International Textile Research Centre Hohensteiner Institute

Monika Büning, Federation of German Consumer Organisations (vzbv)

Prof. Dr. Tilman Butz, Faculty for Physics and Geosciences, Leipzig University

Thorsten Fleischer, Research Centre Karlsruhe in the Helmholtzgemeinschaft, Institute for Technology Impact Assessment and System Analysis

Dr. Michael Gleiche, VDI Technologiezentrum GmbH

Laura Groche, Die Verbraucher Initiative e.V.

Prof. Dr. Wolfgang M. Heckl, Institute for Crystallography and Applied Mineralogy, Ludwig Maximilians University Munich

Dr. Regine Hedderich, Research Centre Karlsruhe, Institute for Nanotechnology

Prof. Dr. Rolf Hempelmann, University of the Saarland, Institute for Physical Chemistry

Prof. Dr. Helmut Horn, Association for Environment and Nature Conservation (BUND)

Birgit Huber, German Cosmetic, Toiletry, Perfumery and Detergent Association (IKW)

Dr. Andreas Jordan, MagForce Nanotechnologies AG

Prof. Dr. Rüdiger Iden, BASF AG, Ludwigshafen

Dr. Wolfgang G Kreyling, GSF-Research Centre for Environment and Health

Prof. Dr. Harald F. Krug, EMPA St. Gallen

Prof. Dr. Dr. Jürgen Lademann, Humboldt University Berlin, Clinic for Dermatology, Venerology and Allergology

Dr. Wolfgang Luther, VDI Technologiezentrum GmbH

Prof. Dr. Hans-W. Micklitz, Bamberg University

Martin Monzel, NanoBioNet e.V.

Bernd Rainer Müller, Ingenieurbüro für Arbeitsschutz und Messtechnik

Prof. Dr. Wolfgang Nethöfel, Philipps University Marburg, Institute for Business and Social Ethics

Sabine Plitzkow, Federal Office for Occupational Safety and Health

Dr. Markus Pridöhl, Degussa AG, Advances Nanomaterials

Kurt-Dietrich Rathke, Lawyer

Dr. Volkmar Richter, Fraunhofer Institute Ceramic Technologies and Systems

Dr. Petra Schaper-Rinkel, Free University Berlin, Otto Suhr Institute for Political Science

Dr. Kristin Schirmer, Environmental Research Centre Leipzig-Halle in der Helmholtzgemeinschaft

Dr. Kristina Sinemus, Genius GmbH

5.3 Annex 3: Invited experts

Questions from the three main areas were put to the following experts during the public hearing

Food
Dr. Wolfgang Luther, VDI Technologiezentrum GmbH

Prof. Dr. Harald Krug, EMPA St. Gallen

Monika Büning, Federation of German Consumer Organisations (vzbv)

Kurt-Dietrich Rathke, lawyer, main focus food law

Prof. Dr. Horst-Christian Langowski, Technical University Munich, Science Centre for Nutrition, Land Use and Environment

Dr. Petra Schaper-Rinkel, Free University Berlin, Otto Suhr Institute for Political Science

Cosmetics
Dr. Wolfgang G. Kreyling, GSF Research Centre for Environment and Health

Prof. Dr. Dr. Jürgen Lademann, Humboldt University Berlin, Charité, Clinic for Dermatology, Venerology and Allergology

Sabine Plitzko, Federal Office for Occupational Safety and Health

Prof. Dr. Harald Krug, EMPA St. Gallen

Monika Büning, Federation of German Consumer Organisations (vzbv)

Dr. Astrid Droß, Federal Office of Consumer Protection and Food Safety

Textiles
Dr. Jan Beringer, International Textile Research Centre Hohensteiner Institute

Monika Büning, Federation of German Consumer Organisations (vzbv)

Dr. Raymond Mathis, Active Textiles Cognis Deutschland GmbH & Co.KG

Natalie Eckelt, Association for Environment and Nature Conservation (BUND), Coordination standardisation work of the environmental associations

5.4 Annex 4: Schedule of the first weekend

Saturday, 9 September 2006

Up to 9.45 am	Arrival and check-in in Erkner
10 – 10.10 am	Welcome of participants, presentation of the organisers and moderators
10.10 – 10.30 am	Reasons why BfR launched a Consumer Conference on Nanotechnology Dr. René Zimmer, BfR, Early Risk Detection and Risk Perception Unit (Expectations and wishes from the angle of the executive organiser)
10.30 am – 12 noon	Getting to know each other
12 noon – 12.45 pm	What is a consumer conference? Dr. Silke Domasch (UfU) (Goals, models, possible results, goal of the first weekend, comprehension questions)
12.45 – 1 pm	Information on accompanying social sciences research on the consumer conference PD Dr. Gaby-Fleur Böl, BfR, Head of Department Risk Communication (Explanation of the goals, followed by request for endorsement by the group)
1 – 2 pm	Lunch
2 – 2.30 pm	What is your (first) assessment of nanotechnology and nanotechnological applications? (Plenary)
2.30 – 3.30 pm	What general questions result from your current level of knowledge? (work in small groups)
3.30 – 3.45 pm	Coffee break
3.45 – 5.45 pm	Current situation: Nanotechnology in the areas food, cosmetics and textiles Ulrich Petschow, IÖW (Presentation of the main areas, applications, recognised opportunities and risks, comprehension questions, discussion)
5.45 – 6 pm	Preview of the next day
7 pm	Photo appointment (Group photo), dinner

Sunday, 10 September 2006

9 – 9.15 am	(Playful) warming up
9.15 – 10.15 am	What questions result from the presentation of the contents, aside from or in addition to the presentation? (small group work)
10.15 – 11 am	Discussion and classification of the questions (plenary)
11 – 11.30 am	Coffee break
11.30 am – 1 pm	Establishment of a provisional catalogue of questions (plenary)
1 – 2 pm	Lunch
2 – 2.45 pm	From the question to the expert who answers it (plenary)
2.45 – 3.30 pm	Feedback from the first weekend, preview of the second preparatory weekend, departure
3.30 pm	Cffee and end of the first weekend

5.5 Annex 5: Proceedings of the first weekend

Proceedings of the first preparatory weekend on the "Consumer Conference Nanotechnology", 9 and 10 September 2006

Mailing list
- Participants
- Project team
- Advisory Committee
- BfR

The first weekend of the Consumer Conference was an opportunity for participants to get to know one another, to clarify any procedural questions and for a first critical confrontation with the topic. Silke Domasch from UfU presented the methodological background to the event and Ulrich Petschow from IÖW presented the contents (see Annex 4).

Administrative aspects
Two of the 18 invited participants did not come. Mr Florian Schwotzer and Ms Christa Schwenteit cancelled. Hence the group consisted of 16 people (see Annex: participants).

The preoccupations of the accompanying social scientific research of Bielefeld University were presented on Saturday morning by BfR (PD Dr. Gaby-Fleur Böl). Mrs Böl assured the participants that the data would be processed anonymously and suggested that the group meet again in 2007 and that at this meeting the results of the accompanying research would be presented by Bielefeld University (or the Institute for Science and Technology Research). In the ensuing moderated group decision, all participants voted in favour of the complete recording of the entire event. Mr Alexander Görsdorf (Bielefeld University) was entrusted with the technical recording.

When it came to passing on personal details, the group decided that a list with the main details (name, residence, age, profession) could be published. The participants themselves were given additional concrete contact data. A group photo may be presented online perhaps with names.

Content
An initial assessment of the nanotechnological developments by the group revealed a spectrum of opportunities and risks whereby the tendency was to see more opportunities. An initial, unstructured collection of questions from participants revealed above all *general* questions about the use of nanotechnology.

In a pleasant and constructive working atmosphere, the first provisional questions were formulated on the following areas:

- Cross-functional aspects of nanotechnology (19 clusters)
- On food (12 clusters)
- On textiles (8 clusters)
- On cosmetics (7 clusters)

The formulation of this provisional catalogue of questions meant that one major goal of the first preparatory weekend had been reached.

Experts
In line with the group's wish two experts will be invited to the second preparatory weekend to critically discuss the subject nanotechnology. The group agreed on the science journalist Nils Boeing and a representative from industry (from an application in which nanotechnology is already being used that covers the three areas dealt with). Mr Boeing will be asked to focus on the cross-disciplinary associations and evaluations in conjunction with nanotechnology. Firstly the group hopes to obtain further background information in order to concretise its questions; secondly this will be a practice run on dealing with experts for the final weekend.

For the public final event the organisers contacted experts from the following 10 areas already in the run up to the first weekend:

- Surfaces, materials, textiles
- Food
- Physics, chemistry
- Dermatology
- General medicine
- Technology impact assessment
- Ethics, sociology
- Philosophy, political science
- Consumer protection, product safety
- Associations, companies

Furthermore, the group wished to have experts from the following three areas:

- Civilian observers from the area military/space (research, applications)
- Representatives of Öko-Test, Öko-Text, Stiftung Warentest
- Experts from the field of research promotion (Who distributes the money?, relationship: basic, applied and accompanying research) BMBF – Federal Ministry of Education and Research, committees, scientific organisations (DFG – German Research Foundation, Helmholtz)

Corresponding experts will be contacted for the final conference.

Organisational details
As a follow-up to the first weekend all participants were given extensive proceedings. At the suggestion of the group an article from the current issue of the Öko-Test Magazine was sent out on the subject of nanotechnology. This was done between the first and second weekends. Furthermore, all participants who had entered their names in the list received all the information required there by post.

5.6 Annex 6: Schedule of the second weekend

Saturday, 14 October 2006

Up to 9.45 am	Arrival and check-in in Erkner
10 – 10.30 am	Welcome and introduction - plenary (Reminder of names; What have we done? What were the results of the first preparatory weekend? Schedule for the next two days)
10.30 – 11.30 am	Perspectives of nanotechnology - plenary Nils Boeing, science journalist Birgit Huber, German Cosmetic, Toiletry, Perfumery and Detergent Association (IKW)
11.30 – 11.45 am	Coffee break
11.45 am – 12.45 pm	Moderated group discussion with the experts present - plenary
12.45 – 1 pm	Silent work: Where does each person see his/her main themes within the points dealt with? (first and second choices)
1 – 2 pm	Lunch break
2 – 2.30 pm	Role play and presentation of the theme group - plenary
2.30 – 3.30 pm	Preparation of the definitive catalogue of questions – three theme groups (Inclusion of general questions and possible new questions; combining in clusters)
3.30 – 4 pm	Coffee break
4 – 5.30 pm	Continuation – three theme groups (Concretisation/precision and evaluation of the respective questions, where appropriate deletion of questions)
5.30 – 6.30 pm	Conclusion of the catalogue of questions - plenary (Compilation/approval of the questions via beamer)
7 pm	Dinner
From 8pm	Bowling!

Sunday, 15 October 2006

9 – 9.15 am	Getting in the mood for the day - plenary (What have we achieved, what's on the agenda today?)
9.15 – 11.30 am	Selection of experts and assignment to the respective questions – three theme groups Coffee break
11.30 am – 12.15 pm	Presentation of results - plenary (Questions on the theme areas and selection of experts → finished catalogue of questions)
12.15 – 1.15 pm	Lunch
1.15 – 2.30 pm	Procedural questions I – plenary (Schedule of the hearing, venue and seating arrangements, new moderator, dealing with the media etc.)
2.30 – 3.30 pm	Procedural questions II - plenary (Planning, organisation, structure, who can do what? etc.)
3.30 – 3.45 pm	Feedback on the second weekend
3.45 pm	Coffee and departure

5.7 Annex 7: Proceedings of the second weekend

Proceedings of the second preparatory weekend on the "Consumer Conference Nanotechnology", 14 and 15 October 2006

Mailing list
- Participants
- Project team
- Advisory Committee
- BfR

Two key preparations were concluded during the second preparatory weekend for the Consumer Conference: on Saturday the group submitted the definitive catalogue of questions; on Sunday the experts were chosen for the respective questions (see Annex, Overview). Further input, which the group had requested, involved two additional lectures on Saturday: by Nils Boeing (science journalist, Hamburg) and Birgit Huber (German Cosmetic, Toiletry, Perfumery and Detergent Association - IKW, Frankfurt/M.).

Administrative details
Mr Schmidt-Ruhe was unable to attend the second preparatory weekend for personal reasons. Because of work commitments Mr Selent was only present on Sunday.

Mr Alexander Görsdorf (Bielefeld University) was again responsible for the technical recording.

Content
The random composition of small groups adopted up to this point was abandoned and groups were formed on the basis of interest in the topics. Each participant chose one of the three themes (textiles, food or cosmetics). The five-strong theme groups (see Annex) elaborated their respective catalogue of questions and selected the experts for their area for the hearing. This composition was maintained for the final weekend.

The theme-specific catalogue of questions elaborated in the theme groups was then presented to the plenary and was endorsed by the entire group. The definitive catalogue of questions focused solely on the three main areas textiles, food and cosmetics. Some of the questions on general/multi-disciplinary aspects of nanotechnologies from the first weekend were either taken over into these areas and concretised there or dropped.

The definitive catalogue of questions can be broken down into three parts:

- Food: 7 clusters with a total of 17 questions
- Textiles: 3 clusters with a total of 14 questions
- Cosmetics: 4 clusters with a total of 8 questions

Experts
Once the catalogue of questions was completed, the experts were selected to whom the respective questions were to be put. Here, too, the respective theme group agreed on a candidate after several hours work. Through their presentation to and approval in the plenary the experts were endorsed by the entire group.

The experts were chosen from a pool of experts who had been contacted by the organisers previously, who had indicated their willingness to participate and had provided some personal details (institution, function, main focus of their work). The group selected a total of 14 experts from this pool of 30:

Dr. Jan Beringer (International Textile Research Centre Hohensteiner Institute)

Monika Büning (Federation of German Consumer Organisations (vzbv))

Prof. Dr. Tilman Butz (Leipzig University, Faculty for Physics and Geosciences)

Torsten Fleischer (Research Centre Karlsruhe, Institute for Technological Impact Assessment and System Analysis)

Prof. Dr. Helmut Horn (BUND Germany)

Prof. Dr. Rüdiger Iden (BASF, Ludwigshafen)

Dr. Wolfgang Kreyling (GSF-Research Centre for Environment and Health)

Prof. Dr. Harald Krug (EMPA St. Gallen)

Prof. Dr. Jürgen Lademann (Humboldt University Berlin, Clinic for Dermatology, Venerology and Allergology)

Dr. Wolfgang Luther (Association of German Engineers, VDI Technology Centre)

Prof. Dr. Hans Micklitz (Bamberg University, Chair for Private Law)

Sabine Plitzko (Federal Office for Occupational Safety and Health)

Dr. Markus Pridöhl (Degussa, Advanced Nanomaterials)

Dr. Petra Schaper-Rinkel (Free University Berlin, Otto Suhr Institute for Political Science)

Monika Büning (Federation of German Consumer Organisations (vzbv)) and Harald Krug (Research Centre Karlsruhe) were to reply to questions from all three theme areas.

Organisational details
After the second weekend all participants were sent detailed proceedings. Furthermore, all participants who had entered their names in the list received the citizens' votes requested there.

The logistics for the final weekend are to be examined in detail (length of transfer, possibly parking opportunities in Berlin Mitte etc.)

5.8 Annex 8: Schedule of the final weekend

Friday, 17.11.2006

From 4pm	Arrival and check-in in Erkner
5 – 5.15 pm	Welcome, presentation of the moderator – plenary (schedule of the evening and the next days, introduction by Ms Grobe etc.)
5.15 – 7 pm	Discussion of questions on food, cosmetics and textiles – plenary and small groups
7 – 8 pm	Dinner
8 – 8.30 pm	Presentation of the vote - plenary (Presentation and approval of layout and annexes)
8.30 pm – …	Relaxed session for questions of all kinds, organisational details

Saturday, 18.11.2006

From 7 am	Breakfast
7.45 am	Meeting in the foyer, departure for Berlin
About 8.45 am	Arrival at the Catholic Academy, preparation for the hearing
9 – 9.15 am	Official welcome to the Consumer Conference by BfR
9.15 – 11 am	Questions to the experts by the consumer groups – food, Part I
11 – 11.20 am	Coffee break
11.20 am – 12 noon	Questions to the experts by the consumer group – food, Part 2
12 noon – 1 pm	Lunch
1 to 2 pm	Internal processing of the experts' responses
2 – 2.40 pm	Open final discussion on the area food
2.40 – 3 pm	Coffee break
3 to 5 pm	Questions to the experts by the consumer group – cosmetics
5 – 5.15 pm	Coffee break
5.15 – 6.15 pm	Internal processing of experts, responses
6.15 – 7 pm	Open final discussion of the area cosmetics
8 pm	Dinner at the Ständige Vertretung, Berlin Mitte
About 10 pm	Return to Erkner

Sunday, 19.11.2006

From 7 am	Breakfast
7.45 am	Meeting in the foyer, departure for Berlin
About 8.45 am	Arrival at the Catholic Academy, preparations for the hearing
9 – 11am	Questions to the experts by the consumer group – textiles
11 – 11.15 am	Coffee break
11.15 – 12.15 pm	Open final discussion on the area textiles
12.15 – 1 pm	Internal processing of the experts' responses
From 1 pm	Lunch break
About 2 pm	End of event (Meeting in group room, return to Erkner)
3 to 4.15 pm	Preparation of final report, Part I – small group
4.15 – 4.30 pm	offee break
4.30 – 7 pm	Preparation of final report, Part 2 - plenary
In between	Short break
7 – 8 pm	Dinner
8 to 10 pm	Review, summary, final vote
At the end of the day	Organisational details (Schedule for the next day, arrangements for the press conference, etc.)

Monday, 20.11.2006

9 – 9.30 am	Preparations for the presentation and handing over of the vote plenary (Presentation: Which celebrities are present? Seating arrangements? Who presents? Who presents to whom?)
9.30 am	Check-out, departure for Berlin (in cars)
10.30 am	Arrival at the Federal Press Agency (Preparation for the presentation and handing over of the vote)
11am – 12.15 pm	Presentation and handing over of the vote
12.15 pm	Closing address by BfR
12.30 pm	Snack/reception
About 1.30 pm	Internal winding up
About 2 pm	End of event

5.9 Annex 9: Event flyer Consumer Conference

Projektdurchführung

Unabhängiges Institut für Umweltfragen (UfU), Berlin

Institut für ökologische Wirtschaftsforschung (IÖW), Berlin

Moderation der Verbrauchergruppe

Dr. Antje Grobe
Stiftung Risikodialog, St. Gallen (Schweiz)

Wissenschaftlicher Beirat

Prof. Dr. Arnim von Gleich
Fachgebiet Technikgestaltung und Technologieentwicklung, Universität Bremen

Prof. Dr. Armin Grunwald
Leiter des Instituts für Technikfolgenabschätzung und Systemanalyse (ITAS), Karlsruhe

Prof. Dr. Harald Heinrichs
Junior Professor am Institut für Umweltkommunikation, Universität Lüneburg

Dr. Hans Kastenholz
Abteilung Technologie und Gesellschaft, EMPA, St. Gallen (Schweiz)

Veranstaltungsorte

Tagungszentrum der Katholischen Akademie
Hannoversche Str. 5b
10115 Berlin (Mitte)
www.hotel-aquino.de

Bundespresseamt
Eingang Reichstagsufer 14
11044 Berlin (Mitte)

Kontakt und weitere Informationen

Unabhängiges Institut für Umweltfragen
(UfU) e.V.
Greifswalder Str. 4
10405 Berlin
Silke Domasch
Tel.: 030-428 49 938
Fax: 030-428 00 485
silke.domasch@ufu.de
www.ufu.de/verbraucherkonferenz.html

Anmeldung

Die Veranstaltung ist öffentlich.

Eine Anmeldung ist erforderlich. Bitte richten Sie diese unter dem Stichwort „Verbraucherkonferenz Nanotechnologie“ und unter Angabe der Tage, an denen Sie teilnehmen möchten, bis zum 08.11.2006 an:

Unabhängiges Institut für Umweltfragen (UfU)
Fax: 030-428 00 485

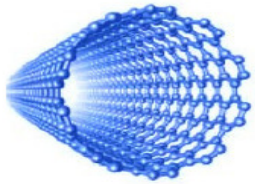
Die Anmeldung wird erst mit der Bestätigung verbindlich.

UfU
Unabhängiges Institut für Umweltfragen e. V.

iöw

BUNDESINSTITUT FÜR RISIKOBEWERTUNG

Verbraucherkonferenz Nanotechnologie



Abschlussveranstaltung
18. bis 20.11.2006

BfR
Risiken erkennen – Gesundheit schützen

Verbraucherkonferenz Nanotechnologie

Vom 18. bis 20. November 2006 findet in Berlin-Mitte die öffentliche Abschlussveranstaltung der ersten bundesdeutschen Verbraucherkonferenz zum Thema Nanotechnologie statt. Eine zufällig zusammengesetzte Bürgergruppe nimmt aus der Verbraucherperspektive Stellung zu Chancen und Risiken nanotechnologischer Anwendungen in den Bereichen Lebensmittel, Kosmetika und Textilien. Dieses Modellprojekt wurde vom Bundesinstitut für Risikobewertung (BfR) initiiert und gemeinsam mit dem Unabhängigen Institut für Umweltfragen (UfU) sowie dem Institut für ökologische Wirtschaftsforschung (IÖW) durchgeführt.

Die Verbraucherkonferenz ermöglicht die direkte Beteiligung von Verbraucherinnen und Verbrauchern an der öffentlichen und politischen Diskussion. Sie lehnt sich dabei an das Modell der so genannten Konsensus-Konferenzen aus Dänemark an. Die Erfahrungen zeigen, dass Bürger schlüssige und gut durchdachte Empfehlungen zu komplexen Themen aus Wissenschaft und Technik abgeben können, wenn man ihnen die Möglichkeit gibt, sich mit den relevanten Informationen auseinander zu setzen.

Eine Gruppe aus 16 interessierten Verbraucherinnen und Verbrauchern hat an zwei Vorbereitungswochenenden Fragen zur Nanotechnologie erarbeitet und Sachverständige ausgewählt. Diese werden am 18. und 19. November in einer öffentlichen Anhörung in der Katholischen Akademie befragt. Anschließend zieht sich die Bürgergruppe zu einer geschlossenen Beratung zurück, um ihr Verbrauchervotum zur Nanotechnologie zu verfassen. Der Öffentlichkeit wird das Votum am 20. November 2006 im Bundespresseamt vorgestellt.

Das BfR sowie die Organisatoren UfU und IÖW laden Sie herzlich zu dieser Veranstaltung ein.

Programm

Samstag, 18.11.2006
Veranstaltungsort: Katholische Akademie

09.00 Uhr
Begrüßung zur Verbraucherkonferenz

Befragung der Sachverständigen durch die Bürgergruppe

09.15–11.30 Uhr
Teil I:
Nanotechnologie und Lebensmittelanwendungen

11.30–13.30 Uhr *Kaffeepause mit Imbiss*

13.30–16.00 Uhr
Teil II:
Nanotechnologie und Kosmetikanwendungen

Sonntag, 19.11.06
Veranstaltungsort: Katholische Akademie

09.00 Uhr
Begrüßung

Befragung der Sachverständigen durch die Bürgergruppe

09.00–11.30 Uhr
Teil III:
Nanotechnologie und Anwendungen im Textilbereich

11.30–13.00 Uhr *Kaffeepause mit Imbiss*

13.00 Uhr
Ende der Veranstaltung

Danach geschlossene Beratung der Bürgergruppe.

Montag, 20.11.2006
Veranstaltungsort: Bundespresseamt

10.00 Uhr
Pressekonferenz

11.00 Uhr
Übergabe des Verbrauchervotums im Bundespresseamt an:

Bundesministerium für Ernährung, Landwirtschaft und Verbraucherschutz (BMELV) (angefragt)

Ulrike Hoefken
Vorsitzende Bundestagsausschuss für Ernährung, Landwirtschaft und Verbraucherschutz

Professor Jürgen Mlynek
Präsident Helmholtz-Gemeinschaft Deutscher Forschungszentren (angefragt)

Dr. Wilfried Sahm
Hauptgeschäftsführer Verband der Chemischen Industrie e.V. (angefragt)

Dr. Gerhard Timm
Bundesgeschäftsführer Bund für Umwelt und Naturschutz Deutschland (angefragt)

Im Anschluss
Diskussion und Statements

12.00 Uhr
Schlusswort

12.30 Uhr *Imbiss*

14.00 Uhr
Ende der Verbraucherkonferenz

5.10 Annex 10: Registrations for the public hearing

List of participants (Status: 16 November 2006)

Name	Organisation
Abels, PD Dr. Gabriele	Bielefeld University
Altmann, Marlis	Marketing Managerin 50plus
Andres, Renate	private
Bohn, Dr. Markus	Südwestrundfunk (SWR)/HF-Wissenschaft
Boje-Haderer, Rita	Federal Institute for Risk Assessment
Böl, PD Dr. Gaby-Fleur	Federal Institute for Risk Assessment
Busch, Marion	German Nature Conservation Ring, DNR
Cameron, Patricia	BUND – Friends of the Earth Germany
Eibich, Hella	Consumer
Ferrari, Dr. Arianna	Darmstadt University
Fleischer, Dr. Gabriela	DIN Consumer Council
Gerhard-Abozari, Eva	Research Centre Jülich
Groche, Laura	Consumer Initiative
Gundert-Remy, Prof. Dr. Ursula	Federal Institute for Risk Assessment
Hardt, Marco	Burson-Marsteller
Hermann, RA Andreas	Eco-Institut
Hertel, Dr. Rolf	Federal Institute for Risk Assessment
Heymann, Dagmar	Women in Science and Technology (NUT)
Huber, Birgit	German Cosmetic, Toiletry, Perfumery and Detergent Association (IKW)
Huttenlocher, Armin	Burson-Marsteller
Kamm, Willibald	pivate
Kolarek, Martina	pivate
Lamprecht, Dr. Katja	Federal Environmental Agency, Vienna
Mac, Kiem	Federal Institute for Risk Assessment
Meister, Dr. Götz	Independent Institute for Environmental Concerns
Müller, Simone	Federation of German Consumer Organisations (vzbv)
Nikschtat, Claudia	Institute for Ecological Economy Research
Oltmanns, Dieter	pivate
Pfaff, Dr. Karla	Federal Institute for Risk Assessment
Quint, Gertrud	pivate
Quint, Dominic	Free University Berlin
Rappolder, Marianne	Federal Environmental Agency, Dessau
Resch, Markus	macondo Medien
Rickert-Kruglov, Sonja	Eco-Institute
Sander, Uwe	pivate
Schmidt, Günther	pivate
Schumann, Dr. Regina	Federal Institute for Risk Assessment
Stähle, Dr. Siglinde	Association for Food Law and Food Science
Thurau, Julia	Science & Media
Tulp, Eva	Women in Science and Technology (NUT)
Vielfort, Dr. Anette	German Chemical Industry Association (VCI)
von Gleich, Prof. Dr. Arnim	Bremen University
Wirtz, Micha	Burson-Marsteller
Winter, Steve	Institute for Ecological Economy Research
Zerger, Carolin	BUND – Friends of the Earth Germany
Zietlow, Brigitte	Federal Environmental Office, Dessau
Zimmer, Dr. René	Federal Institute for Risk Assessment

5.11 Annex 11: Detailed schedule Monday, Federal Press Agency (BPA)

Monday, 20 November 2006

Moderation: Antje Grobe

Approx. 10.30 am	Arrival at the Federal Press Agency, preparations for the presentation
11 am	Welcome to all participants, particularly the invited decision-makers by PD Dr. Gaby-Fleur Böl, Head of the Department Risk Communication, Federal Institute for Risk Assessment
11.05 am	Presentation of the vote by the consumer group, a representative of each theme group presents the passage or main parts of the vote
11.30 am	Handing over of the vote by three consumers to the four decision-makers present
11.35 am	Short statements by the decision-makers • *Ulrike Höfken,* Chairperson of the Bundestag Committee for Food, Agriculture and Consumer Protection, Bündnis 90/Die Grünen • *Min. Dir. Bernhard Kühnle, Head of Department in the Federal Ministry of Food, Agriculture and Consumer Protection* • *Dr. Gerhard Timm, Federal Director of* BUND – Friends of the Earth Germany • *Prof. Dr. Reiner Wittkowski, Vice-President, Federal Institute for Risk Assessment*
11.55 am	Discussion of the vote by the consumer group, the decision-makers and guests present
About 12.15 pm	Closing address by Prof. Dr. Dr. Andreas Hensel, President, Federal Institute for Risk Assessment
About 12.30 pm	Reception
About 1.30 pm	Internal winding up
About 2 pm	End of event

5.12 Annex 12: Background Information on the Consumer Conference

PRESSEINFORMATION

Bundesinstitut für Risikobewertung
Thielallee 88 - 92 • D - 14191 Berlin
Presserechtlich verantwortlich:
Dr. Irene Lukassowitz
Tel. 0 30 - 84 12 - 43 00 • Fax 0 30 - 84 12 - 49 70
pressestelle@bfr.bund.de • www.bfr.bund.de

BfR
Risiken erkennen – Gesundheit schützen

B/2006, 18.11.2006

Consumer Conference Nanotechnology

Background information for journalists

The "Consumer Conference on the perception of nanotechnology in the areas of foods, cosmetics and textiles" was launched as a pilot project by the Federal Institute for Risk Assessment (BfR). It is jointly staged with the Independent Institute for Environmental Concerns (UfU) and the Institute for Ecological Economic Research (IÖW). Consumer conferences are being tested as one possible tool for extended risk communication. This is the first time in Germany that a public institute or agency has made use of this risk communication tool.

Risk communication is one of BfR's statutory tasks. The objective is to provide information on the latest scientific research and findings on health risks in line with BfR's tasks in the fields of foods, feedstuffs, consumer articles, products and chemicals. BfR's risk communication activities seek firstly to establish contacts between scientists involved in risk assessment and, at the same time, to promote the exchange of information on the expert level. Furthermore, they endeavour to determine how the public at large or affected groups perceive the health risks. The findings obtained are taken over into risk assessment strategies. The basis for BfR's risk communication activities is a participative dialogue between risk assessors, managers and stakeholders. They include consumer representatives, scientists, associations, politicians, industry as well as other social groups. The staging of a consumer conference puts this remit into practice by already involving consumers upstream of a broadly based consumer application in the discussions about the opportunities and risks of nanotechnology.

Consumer conferences: A tool for directly involving consumers in discussions about a controversial theme that concerns them

The consumer conference draws on the model of the consensus conference. This tool was developed and is used in Denmark. The subject matter and goal of this consumer participation procedure is to assess new technologies and scientific developments from the angle of informed lay persons (citizens or consumers). Based on this model three supraregional or nationwide conferences have already been staged in Germany on genetic diagnostics, stem cell research and brain research. The characteristic feature of these conferences is a structured public dialogue between experts and lay persons.

The lay persons discuss the subjects on the agenda in an in-depth manner with the invited experts. In a fair and open discussion a constructive argumentation climate is promoted within which a structured, science-driven opinion-forming process is possible. The goal of the opinion-forming and assessment process spanning several weeks is to identify the different attitudes, views and expectations of the consumer group and to document consensus or differing stances in a final, independent vote.

The effectiveness of consumer conferences depends on whether and, if so, how they are integrated into political or social processes. Hence, their impact can vary greatly. The experiences particularly of Nordic countries show: consumer conferences create a counterweight to expertocracy (the predominance of scientists' and lawyers' knowledge) and strengthen the role of lay persons in society. Experience shows that consumers always come up with sound, well thought through recommendations on complex scientific and technological problems whenever they are given an opportunity to take a critical look at the relevant facts and scientific findings presented in comprehensible language. Furthermore, consumer conferences provide an opportunity to open up topics of importance for society as a whole that had previously only been discussed in expert circles, to wider public debate.

Nanotechnology - key technology of the 21st century

The nature of a key technology means that it is used in many areas which are also of relevance to consumers. The subject nanotechnology is important for the Federal Institute of Risk Assessment (BfR), particularly in the context of consumer health protection because new materials produced using nanotechnology are increasingly being used in consumer products like cosmetics, clothing, household products and, in future, in foods and food supplements, too. In the field of nanotechnology this applies especially to nanoparticles and nanoscale coatings. What is important is to find out what potential opportunities and risks are linked to the consumer application of these technologies and the extent to which consumers are willing to accept these risks given the potential benefits. Research into consumer perception of these technologies is still in the teething stages. At the consumer conference public risk assessment will examine, for the first time, the perception of the risks of nanotechnology by consumers and - if possible - incorporate this into risk assessment. The main emphasis is on:

- overcoming information deficits and promoting a differentiated opinion-forming process on nanotechnology amongst consumers;
- preparation of an informed vote by consumers on applications of nanotechnology in the areas foods, cosmetics and textiles;
- the public handing over of the consumer vote to the decision makers in consumer protection, politics, science and industry.

The purpose behind the drawing up of a fact-based opinion of consumers is to establish the requirements they expect a “sustainable” nanotechnology to meet. This leads us to the question about how we should deal with nanotechnology in the future. The vote by consumers gives both producers as well as decision makers from political circles and public consumer protection some guidance on how to deal with nanotechnology. Furthermore, it is very important for the general public to gain broadly based, realistic insight into the opportunities and risks of nanotechnology.

The structure of the consumer conference

The consumer conference on nanotechnology is broken down into three phases: during the two preparatory weekends (9/10 September 2006 and 14/15 October 2006), the consumer group was introduced to the subject. It put together questions on nanotechnology and chose the experts who would be questioned by it in public during the final weekend. This process was largely shaped by the consumers themselves. They sought out information in the width and depth they deemed necessary and sufficient. The third phase is this three-day final conference in Berlin. At a public hearing in the Catholic Academy on 18 and 19 November 2006 the invited experts answer questions from the consumer group. The consumer group then withdraws for private deliberations in order to prepare its consumer vote on nanotechnology. The general public is informed of the outcome of the vote on 20 November 2006 at the Federal Press Agency and it is then passed on to representatives of public agencies, politics and industry.

Selection of the participants

The participating consumers were chosen according to a random procedure. Similar to earlier consumer conferences just under 6,000 randomly selected individuals who live in Berlin/Brandenburg were sent a personal invitation. Eight local resident's registration offices in Brandenburg towns each supplied 250 addresses. Furthermore, eight districts in Brandenburg selected by drawing lots were invited to participate and each asked to supply 250 addresses. In Berlin eight districts with 250 addresses each were included. The background to this selection was the desire to have balanced representation of rural, city and town residents in order to ensure a heterogeneous composition of **consumers at the conference.**

A total of 41 people expressed an interest in attending the consumer conference. From these replies 16 participants in the "Consumer Conference: Nanotechnology" were selected on 29 June 2006. The consumer group consists of seven women and nine men aged between 20 and 72.

The "Consumer Conference: Nanotechnology" is accompanied by a scientific council. The council is independent and provides advice to the project organisers on the preparation and answering of contextual and methodological questions.

Four scientists agreed to participate in the council who have extensive knowledge about the nanotechnology debate and are also well-known experts in the field of risk management and risk communication. They are:

- Prof. Dr. Arnim von Gleich, Technology Design and Development Department, Bremen University,
- Prof. Dr. Armin Grunwald, Director of the Institute for Technology Impact Assessment and System Analysis (ITAS), Karlsruhe,
- Prof. Dr. Harald Heinrichs, Junior Professor at the Institute for Environmental Communication, Lüneburg University,
- Dr. Hans Kastenholz, Technology and Society Department, EMPA, St. Gallen (Switzerland).

end bfr-p

5.13 Annex 13: BfR Press releases

PRESSEINFORMATION

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BfR
Risiken erkennen – Gesundheit schützen

23/2006, 22.08.2006

More proactive communication on nanotechnology!

BfR involves experts and consumers in a dialogue about the opportunities and risks of nanotechnology

Timely communication about the possible use and potential risks of nanotechnologies in foods and consumer products will be of decisive importance when it comes to society's acceptance of nanotechnology. The key question is question whether and, if so, on what scale consumers come into contact with nanomaterials and the impact of these materials on the organism. BfR has just launched two projects on this very subject. First of all, the Institute intends to ask experts about the use and potential risks of nanomaterials. Then, a consumer conference will seek to determine how people see nanotechnology and what hopes and fears are engendered by this technology. "Both projects will help to identify scientifically determined and emotionally perceived risks early on and to carry them over to the communication process", says BfR President, Professor Dr. Dr. Andreas Hensel.

The expert survey of the "Risks of nanotechnological applications in foods, cosmetics and consumer goods" has already begun. It is based on the Delphi method, a multi-phase, qualitative forecasting method. A panel of experts is systematically interviewed about readily available knowledge. About 100 experts from research, industry, public agencies, consumer associations and other non-governmental organisations participate in the survey. In two Delphi rounds they express their opinions on the current and future applications of nanotechnology and on the potential opportunities and risks for consumers. The first Delphi round was already held in July. The second Delphi round where experts will be given an opportunity to react to the results of the first round is to follow in the autumn. At two expert workshops the results will then be discussed and any risk potentials identified classified by scale in a "risk barometer".

The objective is to identify already used or potentially usable nanomaterials, assign them to concrete applications and then draw conclusions on consumer exposure. Based on the available knowledge about exposure and hazard potential, the applications will then be classified according to the level of probable risk and risk reduction strategies developed. The Federal Institute for Risk Assessment conducts the Delphi survey together with the Interdisciplinary Research Unit on Risk Governance and Sustainable Technology Development (ZIRN) at Stuttgart University.

Towards the end of the year BfR will then stage a “Consumer Conference on Perception of Nanotechnology”. Conferences of this kind are one way of directly involving consumers in public and political debate about consumer protection issues. The objective of the conference is to identify the opportunities and risks linked to the use of nanotechnology from the consumers’ perspective.

To this end, a group of 18 representative consumers will take an in-depth look at the subject of nanotechnology during three weekends in Berlin. After a public hearing of experts in this area in November the group will submit a final report on the opportunities and risks of nanotechnology from the consumer angle. This consumer report will then be passed on to the main stakeholders in political circles, public agencies, science, industry and non-governmental organisations. In this way, any risks perceived by consumers are to be integrated into the risk communication process.

The Consumer Conference will be jointly staged with the Independent Institute for Environmental Concerns (UfU, Berlin) and the Institute for Ecological Economic Research (IÖW, Berlin). BfR will inform the general public of the results.

end bfr-p

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BfR
Risiken erkennen – Gesundheit schützen

30/2006, 24.11.2006

Consumers call for comprehensible labelling and accompanying risk research on "nano"products

BfR Consumer conference on nanotechnology in foods, cosmetics and textiles

The main demands formulated in the vote by the 16 consumers who attended the BfR consumer conference on nanotechnology were for comprehensible labelling, clear definitions, terms and standards as well as far more research into the potential risks before nanotechnology is used to a greater degree in consumer products. The group presented its vote on 20 November 2006 to representatives of the Bundestag (German parliament), the federal government, associations and the Governing Body of the Federal Institute for Risk Assessment. "With the consumer conference on nanotechnology we are the first public agency in Germany to try out this risk communication tool", said BfR President Professor Dr. Dr. Andreas Hensel in his closing speech at the conference. "Our experience shows that an event of this kind is well suited to involving consumers in the scientific debate about the assessment of new technologies. When making their judgement, consumers took a very differentiated look at the potential risks and benefits of nanotechnology based on knowledge of the latest research and the existing uncertainty." They were especially critical of the use of nanomaterials in foods.

The Consumer Conference on Nanotechnology was launched as a pilot project by the Federal Institute for Risk Assessment (BfR) and was jointly staged with the Independent Institute for Environmental Concerns (UfU) and the Institute for Ecological Economic Research (IÖW). It draws on the model of the Danish consensus conference and is being tested by BfR as one possible tool of extended risk communication. The backdrop to BfR's risk communication activities is the dialogue between risk assessors, risk managers and various interest groups from science, politics, industry, associations, public agencies and the public at large. The staging of a consumer conference puts BfR's statutory remit on risk communication into practice by directly involving groups of consumers in the discussions about the risks and benefits prior to the introduction of a broadly based consumer application of this technology. This is the first time that a public agency in Germany has used this tool.

16 people of various ages and occupations were extracted from a cohort of 6,000 randomly selected individuals on the basis of sociodemographic criteria for the Consumer Conference on Nanotechnology. This group took a comprehensive look at this subject at two preparatory weekends, prepared questions on various consumer aspects of this technology and selected experts from science, associations, public agencies and industry to answer them.

The closing event of the “BfR Consumer Conference on Nanotechnology” was held in Berlin from 18 to 20 November 2006. At a public hearing the invited experts responded to the consumer group’s questions on the use of nanotechnology in foods, cosmetics and textiles. An, at times, heated debate was conducted on the question of the labelling of nanoproducts. The participants called for clear labelling in order to be able to decide for themselves whether they wanted to purchase products manufactured using nanotechnology or not. Other important discussion items were the development of suitable measurement methods to detect nanoparticles, disposal of nanoproducts and the provision of funds to research possible risks.

In private deliberations the group then prepared its vote on nanotechnology. It was presented to the public on 20 November 2006 and handed over to representatives of public agencies, politics and associations. It names foods as the most sensitive area for the use of nanomaterials. Consumers felt that the promised advantages to be derived from using nanotechnology like changes to the flow properties of ketchup or the trickling properties of products were non-essential given the potential risks. Regarding the use of nanotechnology in cosmetics and textiles the consumers felt that the already foreseeable benefits clearly outweighed potential risks. For instance, nanoparticles in sunscreen could provide better UV protection and help to counter the increase in skin cancer. The consumers were also of the opinion that nanotechnology could be expected to offer more quality of life in work, sports and daily clothing.

Nanotechnology is of importance for the Federal Institute for Risk Assessment in conjunction with consumer health protection as new materials manufactured on this basis are increasingly being used in consumer products like cosmetics, clothing textiles, household products as well as in foods and food supplements in future, too. The recording of a fact-based opinion aims to identify the requirements consumers expect nanotechnology to meet. The consumer vote is, therefore, an important source of information for both producers and decision makers from politics and consumer health protection authorities when dealing with nanotechnology and its products.

end bfr-p

5.14 Annex 14: Project participants

Executive organiser

The Consumer Conference was staged on behalf of the Federal Institute for Risk Assessment (BfR). In its capacity as a federal institute, BfR prepares expert reports and opinions on all aspects of food safety and consumer health protection. The establishment of a qualified consumer opinion on nanotechnology, within the framework of the "Consumer Conference Nanotechnology", is an additional source of information for BfR's further evaluation work.

Federal Institute for Risk Assessment, Contact: Dr. René Zimmer
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14195 Berlin

Scientific Advisory Committee
Four reputed experts in the field of risk management and risk communication agreed to participate in the Committee. They all have extensive knowledge about the nanotechnology debate. The Committee was independent and advised the organisers on content and methodological questions.

Prof. Dr. Arnim von Gleich
Technology Design and Development Department, Bremen University

Prof. Dr. Armin Grunwald
Director of the Institute for Technology Impact Assessment and System Analysis (ITAS), Karlsruhe

Prof. Dr. Harald Heinrichs
Junior Professor, Institute for Environmental Communication, Lüneburg University

Dr. Hans Kastenholz
Technology and Society Department, EMPA, St. Gallen (Switzerland)

Consumer group
The consumer group, consisting of 16 participants, was randomly selected on 29 June 2006 from all the replies received (cf. random selection of the consumer group). The group was equally composed of men and women from Berlin and Brandenburg. It extended from a 20-year-old student over an accountant from Frankfurt/Oder, a self-employed person in the telecommunications industry up to a 72-year-old pensioner.
www.ufu.de/verbraucherkonferenz.html

Moderation
Michael Zschiesche (UfU) and Gerd Scholl (IÖW) were the moderators for the two preparatory weekends. Dr. Antje Grobe (Foundation Risk-Dialog, St. Gallen, Switzerland) was the moderator for the final conference. The moderators played a key role in promoting communication within the consumer group and between the consumers and experts.

Organisation
The "Consumer Conference Nanotechnology" was organised by the Independent Institute for Environmental Concerns (UfU) and the Institute for Ecological Economic Research (IÖW). Both institutions have several years experience in the field of citizen participation, public discourses and sustainable innovation and technology analysis, amongst other things for nanotechnologies.

Independent Institute for Environmental Concerns (UfU)
Dr. Silke Domasch, Michael Zschiesche
Greifswalder Str. 4
10405 Berlin

Institute for Ecological Economic Research Berlin (IÖW)
Ulrich Petschow, Gerd Scholl
Potsdamer Str. 105
10785 Berlin

5.15 Annex 15: Guidelines for participating experts (panel)

Brief presentation of the project

Run-up to the event
What prompted you to agree to the invitation procedure of UFU/IÖW/BfR? (There was the option of being "uninvited" if consumers did not ask for your special area.)
Did you know the organisers UfU/IÖW or the executive organiser (BfR)?
What did you expect from the procedure? What did you expect from your participation?
Were the reasons behind/motivation for this event clear and comprehensible to you from the outset?
What scientific, political and high impact media importance did you attribute to the procedure?
Were you sufficiently informed in advance about the procedure and your role?
Did you have reservations about participating? (For instance that you could be presented as the "bogeyman" or not be "up to" the questions or that there could be a competition situation on the panel?)
Were you familiar with the short description on the basis of which you were selected by consumers?
Was it clear to you from the very beginning what expert knowledge and what input would be expected of you?
Was it helpful to receive the questions in advance and did they correspond to the questions put later?
Evaluation of the course of the event
How do you assess the overall course of the event? (As an expert did you have sufficient time to speak or did you have the feeling that you were cut short? Did you think you were well understood by the audience? Which points were dealt with in too much or too little depth? Could all the arguments raised by you be included in the discussions? Or was there a risk of misunderstanding?)
How do you assess the level of the questions submitted/put? Were the consumers sufficiently informed in order to be able to formulate sensible questions for the experts?
In your opinion could all the questions be adequately answered?
In your opinion were the size and the professional composition of the expert group sufficient and adequate in order to answer the topics raised? (Was an important company, institution, person or specialist knowledge/information missing?)
Do the focal points which emerged in the course of questions correspond to the focal points which were deemed to be particularly relevant in the "nano discourse"?
Were you able to give comprehensive answers to all the questions put to you?
How do you assess the moderators and their role at the event?
How do you assess the work and moderation methods used? ("red card")
Do you think that the type and level of compensation (travel expenses) was appropriate?
Satisfaction with the results
Were your initial expectations of the event mainly met? If not, what was different from what you expected?
Are you familiar with the result of the event (consumer vote)?
If so, how do you assess the importance of the results in terms of quality (consumer vote?) (In your opinion were any relevant aspects "forgotten"?)
Did you attend the press conference? If so, what was the importance in your opinion of the press conference and the public final event? Did you have the feeling that the key messages of the consumer conference were correctly and fully presented at the press conference?

Were you informed about the further use of the results after the event?
Did the results in your opinion lead to any action? Do you think that the results have been taken over or will be taken over in any way into political action?
Would you participate in another Consumer Conference?
How do you rate the benefits of these events? Do you think that the effort involved for you and others was worth it?
Would you advise the consumer protection ministry to organise consumer conferences of this kind for other questions too? If so, which questions should be given priority?
What would you do differently if you had to organise a consumer conference?
Do you have any other comments? Is there anything that sticks in your mind as being either particularly positive or negative?

5.16 Annex 16: Guidelines for participating consumers

Short presentation of the project

Run-up to the event
What prompted you to accept the invitation from BfR?
Did you know the executive organiser (BfR)?
What did you expect from this procedure?
Were your expectations mainly fulfilled? If not, what was different from what you expected?
Was the purpose of this event clear and comprehensible to you from the very beginning?
Were you sufficiently informed about the procedure and its role?
Did you have reservations? (Prior knowledge about nanotechnology or the fear that your knowledge would not suffice or that this was just an alibi event)?
Evaluation of the course of the event
How do you rate the course of the event? (As a consumer did you have sufficient opportunity to speak or did you have the feeling that sometimes you were cut short? Were any points discussed in too much or too little detail? Were all the arguments raised taken over into the discussions? Did all the consumers who participated have an equal opportunity to take part in the discussions?)
How do you rate the work and moderation methods used? (Work in small groups with later transferral to plenary; dealing with minority votes, collecting arguments and incorporating them with the help of IÖW/UFU into presentations)
In your opinion were the size and composition of the "consumers" working group sufficient and adequate in your opinion (16 participants)?
Did the main areas which emerged in the course of the event correspond to your wishes?
How do you rate the introductory lectures on the subject and the experts selected to do this? After that, were you sufficiently informed in order to be able to formulate questions for and select experts?
Looking back how do you rate the choice of experts? Was the selection appropriate and comprehensive? (Was an important company, institution, person or special knowledge/information missing?)
Could you follow the comments of the experts? Did the experts always express themselves in a language which was comprehensible to you?
Could the experts answer all your questions comprehensively?
How do you rate the moderators on their role at the event with the experts? How do you rate the length of the individual work sessions and the time between the events?
Did you think the type and level of reimbursed expenses was appropriate?
Satisfaction with the results
How do you rate the importance of the results in terms of their quality (consumer vote)? (Do you support the consumer vote? Does the vote reflect all participants? Did you have the impression that specific aspects were "forgotten"?)
What importance did the press conference have for you as the final event? Do you have the impression that the central messages of the consumer conference were presented at the press conference in a correct and complete manner?
Were you informed about the further use of the results after the event?
Did the results in your opinion have any impact? Do you think that the results have been taken over in some way or another into political action?
Would you attend another Consumer Conference?
How do you rate the benefits of these events? Do you think that the effort involved was worth it for you and the others?
Would you advise the consumer protection ministry to organise consumer conferences for other

questions, too?
If so, which questions should be given priority?
What would you do differently if you had to organise a consumer conference?
Do you have any comments? Is there anything that sticks in your mind as being either particularly positive or negative?

5.17 Annex 17: Guidelines for members of the Scientific Advisory Committee

Run-up to the event
What prompted you to agree to the request from UFU/IÖW/BfR?
Did you know the organisers UfU/IÖW or the executive organiser (BfR)?
What did you expect from this procedure? What did you expect from your participation?
Were the reasons/motivation for this event clear and transparent to you from the very beginning?
What scientific, political and high media impact importance did you attribute to the procedure?
Were you sufficiently informed in advance about the procedure and your role?
Did you have reservations about participating?
Was it clear to you from the very beginning what expert knowledge and what input were required from you in particular?
In what way were you concretely involved?
What importance do you attribute to the Scientific Advisory Committee?
Evaluation of the course of the event
How do you rate the overall course of the event?
How do you rate the level of the submitted/raised questions?
In your opinion were the size and professional composition of the expert groups sufficient and adequate in order to answer the topics raised? (Was an important company, institution, person or specialist knowledge/information missing?
Did the main areas which emerged in the course of the questions correspond to the main areas which were deemed to be particularly relevant in the "nano discourse"?
Do you think that the type and level of compensation (travel expenses) was appropriate?
Satisfaction with the results
Were your initial expectations of the event mainly fulfilled?
If not, what was different from what you expected?
Are you familiar with the results of the event (consumer vote)? If so, how do you rate the importance of the results in terms of quality "consumer vote"? In your opinion were relevant aspects "forgotten"?)
Did you attend the press conference? If so, in your opinion what importance did the press conference and public final event have? Did you have the impression that the central messages of the consumer conference were presented correctly and completely at the press conference?
Were you informed about the further use of the results after the event?
In your opinion did the results have any impact? Do you think that they were or will be taken over in any way into political action?
Would you agree to serve on another advisory committee?
How do you rate the benefits of these events? Do you think that the effort involved for you and others was worth it?
Would you advise the consumer protection ministry to organise consumer conferences of this kind for other questions? If so, which questions should be given priority?
What would you do differently if you had to organise a consumer conference?
Do you have any comments? Is there anything that sticks in mind as being as particularly positive or negative?

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