



International High-Level Roundtable on Environmental Health aspects of the Lisbon Agenda and the Sustainable Development Strategy

**“Clean, clever, and competitive
from a citizen’s perspective”**

REPORT

Monday November 27th, 2006
Goethe-Institute Brussels, B-1040 Brussels

Programme and organisation by WECF, the Netherlands.
Chaired by Mary McPhail, Secretary General (European Women’s Lobby).

This High Level Roundtable is part of the WECF project on Eco Efficiency and is held in the framework of the Lisbon Agenda and the review of the EU Sustainable Development Strategy (SDS).
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*Report from the International High Level Roundtable, November 27th 2006, Brussels
“Clean, clever, and competitive from a citizen’s perspective”*

Table Of Contents

Background to the Event	3
<i>Goals of the Event</i>	3
Summary	4
<i>From the Presentations</i>	4
<i>From the Roundtable</i>	5
<i>WECF General Conclusions</i>	6
<i>Event Programme</i>	7
Session 1: Keynote Speeches	8
<i>Sascha Gabizon, WECF, International Director</i>	8
<i>Introduction “A healthy Europe: prerequisite for long-term competitiveness”</i>	8
<i>Prof. Philippe Grandjean, Harvard University, US & the University of Southern Denmark</i>	10
<i>“Chemical Braindrain”</i>	10
<i>Dr. John Peterson Myers, Environmental Health Science, USA</i>	13
<i>“A Revolution in Science - New opportunities to prevent disease”</i>	13
<i>David Gee, Coordinator of Emerging Issues, EEA</i>	15
<i>“The Environment and Health: Low Doses – High Impact?”</i>	15
Short Reactions and Discussion	17
Session 2: Roundtable Debate.....	19
<i>Georgina Georgiou, Member of Cabinet of Commissioner Kyprianou, Commission for Health and Consumer Protection: “Reaction to Presentations and the Position of Commission”</i>	19
<i>Roundtable, First Round</i>	21
Intervention from the Audience	22
<i>Roundtable, Second Round</i>	22
Intervention from the Audience	23
<i>Roundtable, Third Round</i>	24
Intervention from the Audience	25
<i>Final Remarks</i>	25
<i>Post Event Developments</i>	28



Background to the Event

Women in Europe for a Common Future (WECF) is a network of more than organisations working to improve the protection of human health and the environment. WECF's international network consists of members and partners in Western and Eastern Europe, the Caucasus, and Central Asia. Activities range from partnership projects in practical health and environmental issues, to advocacy projects, bringing issues to the international arena.

The current political reality is a high priority on economic development and competitiveness; environment and health protection as prerequisites has been neglected. The Lisbon Agenda added an environmental pillar in 2001 after the launch of the Sustainable Development Strategy (SDS), but it does not integrate health aspects. There is a strong focus on eco-innovation and efficient use of resources, however, eco-efficient technology choices can still be harmful for health (e.g. nuclear energy, recycling of toxic wastes) if these concerns are not integrated in all policies from the outset.

WECF has a growing concern about the environmental burden of disease (EBD), focusing first on the health burden on new generations (effects can be transferred from mother to child). WECF also recognizes a healthy population contributes to a healthy workforce, a key to a competitive Europe.

To learn more about the environmental impact on health, WECF organised an International Expert Workshop on the EBD in Brussels on 13th of April, chaired by Prof. Jacqueline Cramer (Sustainable Entrepreneurship, Utrecht University). At that occasion, scientists presented new findings and insights about the role and importance of environmental factors in causing a range of diseases. Important new findings into the low dose, long-term effects of early childhood and prenatal exposure are evolving.

International Scientific Expert Workshop Conclusion

A new paradigm, or conceptual shift, is evolving in the field of environmental effects on health. The old paradigm, using the single-causality principle and conventional methods of epidemiology and toxicology, find that a very small portion of diseases can be linked to environmental factors (less than 5%). Policymakers base their actions on these assumptions. However, the new paradigm, based on a multi-causality approach and research that looks at complex interactions from multiple exposures and long-term effects of low dose contaminations, taking into account vulnerable periods (e.g. foetal development), shows a much stronger relation between environmental factors and health effects.

It is important to acknowledge there will always be controversies in research results and uncertainties, but it is important to understand the extent and direction of the scientific evidence. Regardless, we should maintain the precautionary principle (PP), as science has its limitations and full proof can never be guaranteed. Where there is already proof of adverse health effects of environmental factors, urgent measures need to be taken without waiting for additional findings. If it is discovered that environmental factors have no adverse effects when tested under multi-causality and multiple exposure conditions, policy measures could be lifted. In the interim, EU policymakers should regulate and implement according to the PP and at the same time stimulate further research, taking long-term health effects and uncertainties into account, not just short-term economic effects.

The full report summary can be found on www.wecf.org.

Following the workshop, WECF developed a briefing on the environmental burden of disease and prepared a discussion paper, both of which served as a basis for the International High-Level Roundtable.

Goals of the Event

The aim of the High-Level Roundtable was to discuss with politicians and opinion leaders from business and civil society how the Lisbon strategy and policy development can incorporate the new scientific insights about the environmental burden of disease (EBD) in policies for reduction and prevention of environmental pollution, so as to decrease negative health effects and lower the societal costs of illness and health damage.



Summary

On November 27th 2006 in Brussels, WECF organized an International High-Level Roundtable on Environmental Health and the Lisbon Agenda entitled, "Clean, Clever and Competitive from a Citizen's Perspective." The event captured the growing wave of scientific, social, and political concern regarding the environmental burden of disease (EBD) in the European Union, and set a forum for discussing new findings and challenges in the context of the European economic strategy, the Lisbon Agenda.

From the Presentations

Sascha Gabizon, WECF International Director, opened the discussion by quoting the High Level Group on Lisbon "if Europe is to compete in the global knowledge society, it must also invest more in its most precious asset—its people." She described the importance of children's health and the disturbing rise in asthma, allergies, and cancer cases in children (1% yearly for cancer). Asthma is the primary reason for children missing school, and 73% of children who survive cancer require lifelong care. The trends, according to Gabizon, are not conducive to a "knowledge-based society." Gabizon went on to describe the numerous chemicals in everyday products and the impossibility for European consumers to research every purchases. As such, good protective legislation is needed based on the precautionary approach. Recalling a Eurobarometer on Lisbon, Gabizon explained that citizens said protecting the environment has priority over economic competitiveness. Another barometer said citizens were most concerned with the impact of everyday chemicals on their health. Gabizon closed with a proposed starting point for the debate to follow: "We cannot gamble with the health of our children.

Prof. Grandjean of Harvard University and Southern Denmark University, in his presentation, Chemical Braindrain, described how it often takes decades before conclusive evidence of chemicals causing neuro-developmental damage can be proven. In presenting findings from his latest publication in *The Lancet*, Grandjean explained that neuro-developmental disorders such as attention deficit disorder, mental retardation, cerebral palsy, and autism (which are common, costly, and can cause lifelong disability) have been linked to exposure to a few industrial chemicals (e.g., lead, methyl-mercury, polychlorinated biphenyls [PCBs], arsenic, and toluene). Exposure to these chemicals during early foetal development can cause brain injury at doses much lower than those affecting adult brain function. The news was troubling, especially when considering the amount of chemicals that have full toxicity information (only five), and that the majority of the 200 chemicals Grandjean identified in his research are not exotic, but rather commonly used. Grandjean contrast a partially functioning liver, to a partially functioning brain. One could get through life quite easily with such a liver, but one would want to maintain the integrity of the brain—and there's only one chance to develop it.

Dr. John Peterson Myers, author of "Our Stolen Future," and Founder of Environmental Health Sciences, discussed a revolution in environmental health sciences, with new opportunities to prevent disease. His main points included 1) Some contaminants alter gene behaviour at extremely low doses; 2) diseases and sensitivity to subsequent exposures can be programmed during development; 3) High dose experiments don't predict low-dose effects; and 4) Mixtures are ubiquitous and alter impacts sometimes unpredictably. The new discoveries challenge standard procedures in toxicology and epidemiology geared at identifying harmful exposures and strongly suggest that health standards developed from these approaches are too weak. Because of these things, there is every reason to believe that strengthening health standards to reflect current science would achieve widespread benefits to public health and important opportunities to reduce the costs of health care. Dr. Myers concluded with a hopeful picture, where modern epidemics like allergies, asthma, and cancers, amongst others, could be diminished.

David Gee of the EEA, outlined arguments that show why the conventional view that the European environmental burden of disease is less than 10% is likely wrong. These included complexity of the cause/effect relationships, "inconsistency" in results, the reality of multi-causality, the relative crudity of the main methods used for gathering evidence, and long periods between exposures and harmful impacts (e.g., several decades for many cancers or even two or more generations for developmental toxicants such as some endocrine disrupting substances). He also discussed the frequent use of high levels of proof (i.e. "beyond reasonable doubt") rather than a "balance of evidence," and a large scope for "manufacturing doubt" about cause/effect links from within the considerable scientific uncertainties involved (e.g. the approach explicitly adopted by the tobacco industry). Gee concluded by reminding the audience that "absence of evidence of harm is not evidence of absence of harm," and that it is



generally easier to remove or reduce exposures to environmental factors than to modify genetic factors.

Commenting on the presentations, **Georginana Georgiou from the Cabinet of Commissioner Kyprianou (Health and Consumer Protection)** reinforced the findings of Prof. Grandjean regarding the vulnerability of the (unborn) child to pollution, and in particular the relation between exposure to chemicals and the development of the brain. Georgiou confirmed that European citizens are regularly exposed to complicated mixtures, and that even very low levels of exposure can cause adverse human health effects. She pointed out that there is Commission cooperation to improve research efforts in the area of health impacts from environmental stressors, namely the result of low level, cumulative and long term exposure. Georgiou also introduced the REACH legislation into debate with its aims to improve the protection of human health and the environment through better and earlier identification of chemical properties. However, she conceded that the two years of debate would ultimately in a compromise. Regarding the conflict between economic growth and environmental protection Georgiou referred to the renewed Sustainable Development Strategy and the fact that the Commission will continue to stress the role of health as a productive investment, a basis and determinant for economic productivity and progress, with the aims of integrating health into all policies in a more effective way.

From the Roundtable

Andreas Gies, German Environmental Protection Agency, explained that health shouldn't be integrated into the environment pillar of the Lisbon Strategy, but rather the economic pillar, because safe chemicals are an economic value. He followed with examples from major car companies like Mercedes, Ford, and GM. **Laurent Vogel, European Trade Union Institute (ETUI)**, wanted to be cautious about integration into the economic pillar as it could be ambiguous. He advocated avoiding concepts like "modern regulation" and instead wanted to see the focus on social and public control. He gave the example of asbestos and how industries were able to self regulate on a so-called risk-based approach, which was ultimately a catastrophe. He explained that where there is a very dangerous substance, and when it's possible to substitute it, there should be no place for risk approach; banning is the only answer. **John Hontelez, European Environmental Bureau (EEB)**, explained that part of the environmental agenda has come into existence because of concerns about public health. Further, he questioned the existence of the environmental pillar of Lisbon, and explained that the main environmental issue in Lisbon is energy due to security and prices affecting competitiveness. He concluded by insisting on a very strong health and environmental agenda independently of the Lisbon Agenda. **Michel Catinat, DG Enterprise** described that Lisbon is a framework for integration but cannot substitute environmental or public health policy, and presented the common position that growth is a necessary condition to reach social and environmental improvements. He concluded by remarking that the panel should not conclude that Lisbon is opposed to environment and public health, rather the challenge is to ensure that they go hand in hand. **John Huss, MP Luxembourg, Council of Europe**, focused on the forthcoming report from the Council of Europe regarding the prevention of environmentally related health hazards. He went further to describe the difficulty of cooperating with industry, based on past evidence of manipulated results. Huss expressed the importance of better, more transparent and effective public participation processes in relation to an earlier remark of social control of industry. **Loredana Ghinea, CEFIC** explained that industry has taken the concept of integrating health into it's operations, demonstrated by the development of diverse research programmes. Ghinea reiterated the idea that an effective economy is necessary for a healthy society, and expressed the need for industry to have safe products. **Birgit van Birgit van Tongelen, DG Environment**, remarked that the Commission has a specific action point for enhancing public access to information, and explained that further investigation of the environmental health link, as called for in the WECF discussion paper, is underway in cooperation with DG Sanco and DG Research. Van Tongelen also took time to dispute the recent article in *Ends Europe Daily* that claimed DG Environment exaggerated environmental health risks. **Prof. Grandjean** to questioned the paradigm that chemicals are innocent until proven guilty, and expressed that the risk assessment methods developed 25 years ago have not gotten us very far. He remarked that an ethics committee would never allow a scientist to expose pregnant women and children to substances that are probably neuro-toxics, yet we are doing that very thing daily. Grandjean concluded by advocating a new paradigm that leads to precautionary-based decision making, building on a previous Commission Communication on the matter. **John Ryan of DG SANCO**, agreed that integrating health into Lisbon is a good argument backed by many studies commissioned by DG Sanco and discussed the launching of a new environmental health portal in "citizen" language.

Later in the debate, the representative from **DG Enterprise** discussed a need for a clear framework and set of rules, especially for things like the substitution principle and the precautionary principle. The



CEFIC representative reminded the audience that one cannot live in a chemical free world, and the representative from the **German EPA** agreed, but asked that the chemical agency be more proactive and engage in constructive dialogue. He also advocated truly independent research. The representative from **ETUI** discussed a social gap in life expectancy, and remarked that data shows differences in exposures to chemicals between blue and white collar workers; he argued there can be no single position on substitution because not everyone is exposed to the same dangers. The representative from **DG Environment** re-emphasized the DG's continuing commitment to the field of environment and health despite the false alarms, and announced the future launch of a large-scale bio-monitoring project to aid policymaking. The **EEB** representative advised against connecting the health agenda with the economic agenda, nor to prove that better health is better for the economy since good public health policies are needed irrespective of whether they are good for the economy or not. The **WECF** representative concluded by recalling some of the scientific findings, particularly for children, and reminding the audience that there are many substitutes for harmful chemicals available, but that there must be a market for them. She also called for the reversing of the burden of proof on chemicals and reiterated that humanity has become the guinea pig for the chemical industry.

WECF General Conclusions

Based on the international scientific workshop on the EBD, and the dialogue from the High Level Roundtable, WECF can draw the following general conclusions (a more detailed information can be found in the WECF Position Paper: A Healthy Population at the Heart of the EU Economic Strategy (available on www.wecf.org):

- Health could be better integrated into the Lisbon policy as it is an economic determinant—though health should be a priority irrespective of other agendas.
- Health should be a starting point for all policies, integrated in a multiple policy sectors
- Human health must take priority over sectoral interests.
- The conventional risk assessment paradigm must be shifted to reflect the nature of the environmental burden of disease; standardized tests on small, uniform populations cannot give an accurate picture.
- The precautionary principle should be the basis of political action geared at alleviating the environmental burden of disease.
- Children, as the basis of a future Europe, are the most vulnerable to effects of pollutants and need urgent health protection
- Better regulation, stimulation for eco incentives and other market incentives (e.g. to enable substitutes to find ground) are needed to tackle the EBD and boost competitiveness
- Citizens are concerned about health impacts from everyday chemicals, prioritize the economy over the environment, and need a greater voice in the process.



Event Programme

Chair: Mary McPhail, Secretary General of the European Women's Lobby

14.00	Welcome by the Chair
14.05	Introduction: A healthy Europe: prerequisite for long-term competitiveness Sascha Gabizon, WECF International Director
14.25	Chemical Braindrain Prof. Philippe Grandjean, Harvard University USA and the University of Southern Denmark
14.50	A Revolution in Science - New opportunities to reduce the environmental burden of disease Dr. John Peterson Myers, Environmental Health Sciences, USA
15.15	The Environment and Health: Low Doses – High Impact? David Gee, European Environmental Agency
15.30	Q&A from the audience
15.45	Tea / coffee break
16.00	The Lisbon strategy and the protection of public health-reaction to presentations Ms. Georgina Georgiou, Member of the Cabinet, on behalf of Commissioner Kyprianou (European Commission for Health and Consumer Protection)
16.25	Roundtable Participants: <ul style="list-style-type: none"> • Michel Catinat (Head of Competitive Aspects of SD Unit, DG Enterprise) • John Ryan (Head of Health Information Unit, DG Sanco) • Birgit van Tongelen (Policy Officer for Health and Environment, DG Environment) • Jean Huss (MP Luxembourg, Parliamentary Assembly of the Council of Europe) • Laurent Vogel (Research Officer, European Trade Union Institute) • John Hontelez (Secretary General, European Environmental Bureau) • Prof. Philippe Grandjean (Harvard University USA / University of Southern Denmark) • Loredana Ghinea (Manager for Children's Health and Environment, European Chemical Industry Council-CEFIC) • Dr. Andreas Gies (Director of Risk Assessment, Chemicals and Biological Safety Division, German Federal Environmental Agency) • Sascha Gabizon (International Director, WECF) <p>Q&A from the audience</p>
17.40	Final conclusions by the Chair
17.45	Reception



Session 1: Keynote Speeches

Sascha Gabizon, WECF, International Director

Introduction “A healthy Europe: prerequisite for long-term competitiveness”

Why are we here?

- EU Economic Strategy (Lisbon)
- Jobs versus Children's Health?
- The environment-health link (the environmental burden of disease-EBD), seems to have been underestimated. Last week there was just an article in the press that DG Environment had exaggerated environmental health risks that lead to the SCALE strategy.
- Health effects are from climate change, air pollution, radiation, chemicals and more, and the findings are alarming
- There is a political tendency to wait for concrete proof before taking action

Today we want to debate these matters and see if we can't come to some solutions.

About WECF

WECF is a network of more than 70 organisations working to improve the protection of human health and the environment. The international network consists of members and partners in Western and Eastern Europe, the Caucasus and Central Asia. Activities range from practical health and environment issues in partnership projects through advocacy projects, bringing issues to international forums. WECF has working groups on Health & Environment (including Chemicals), Water & Sanitation, Agriculture & Sustainable Development, Energy & Climate Change, and Gender & Sustainable Development

The Lisbon Strategy and it's Challenges

Europe wants to be the most competitive, dynamic, knowledge based economy in the world-this is Lisbon. But, we know from the High Level Group report on the matter (2004) "If Europe is to compete in the global knowledge society, it must also invest more in it's most precious asset—its people." Healthy people and healthy planet are resources required to support the economy.

Europe is facing two landmark demographic challenges, a declining fertility rate and an ageing population. The European Commission envisions the "extension of working lives against a background of increased life expectancy." There's a clear need for more women, youth and the ageing joining the workforce, but investments have been limited to education. This is a problem and doesn't do anything for increased healthy life expectancy.

Good Public Health is Key for the Economy

Good public health was previously seen as a mere by-product of economic development but a 2001 World Health Organization (WHO) report changed this view: Health is actually one the key determinants of economic growth. We also know that investing in children's health is economically beneficial (aside from being a good thing on its own). According to the WHO, investments in health, especially for children, can give even better long term financial returns than investments in education. The EU could save up to 161 billion Euros yearly if they could reduce air-pollution deaths, and that's a little more than the GDP of the Republic of Ireland.



If we look at the health of children, we find disturbing trends; asthma and allergies are on the rise, and asthma is the number one reason for children missing school. Children with better health can be expected to attain higher education levels and therefore be more productive in the future. This is Lisbon at its core- a knowledge-based society. Cancer incidence in children is increasing at 1% yearly;



it is the 2nd cause of mortality. What's more, a recent study in the Netherlands showed that 73% of children that are cured of cancer have disabilities that require lifelong care. Cancer is costly. The estimated average cost of just one case of cancer, per person, per year can range from 1 to 2 million Euros, including medical treatment and the value of lost output (productivity). With 3 million new cancer cases yearly in Europe alone, this adds up to 6 trillion Euros, a staggering figure if we consider the EU GDP.

Another trend is that male fertility has sharply declined in Western countries over the past 50 years; one in every six boys born in Europe today will have a low sperm count. Research shows links with prenatal exposure to endocrine disrupting substances. Our next generations are at risk. Professor Skakkebaek of Denmark said, "phthalates seem to dissolve not only plastics, but also testis."

We know that chemical contaminants pass through the placental barrier and breast milk, yet we find that a large percent of women are using products with many chemicals.

Citizen's Choices and Priorities

As consumers, it's impossible to do all the research necessary for each purchase. Citizen's expect government to protect them. With the draft EU chemicals regulation (REACH) there is a change to reverse the burden of proof. But is it enough? Substitution is under threat, there is no attention to neuro-toxics, and what about chemicals in low volumes?



Eurobarometers show that there is clear support for change in the European political priority. On a special Eurobarometer for Lisbon, citizens said they feel protecting the environment has priority over economic competitiveness. In addition, the environment was seen as a driving force for innovation, and environmental protection policies are incentives to innovate rather than obstacles to economic performance. Who do Europeans trust most? A recent EU survey says NGOs, a Swedish study says sustainable and consumer health conscious companies like Ikea hold consumers trust. But trust in the EU politician's is fading.

Citizens want urgent action, they need the precautionary principle applied. There must be a fast substitution of the most hazardous substances e.g. phthalates. There needs to be better available information for producers and consumers on the existing science, and we need safe jobs producing safe products.

Good regulation creates economic opportunities. A 2005 Prague summit of EU Environmental Protection Agencies concluded that "modern regulation" can actually reduce costs for industry and business. In the UK alone energy efficiency and waste minimisation could yield 7.1 Billion Euros. Good regulation can stimulates innovation, which can lead to clean production and substitution. We already have many substitutes: biodegradable surfactants, halogen-free flame retardants, compostable packaging, biodegradable hydrogel super absorbents, castor oil-based plasticiser (which is a phthalate substitute!), chitosan for use in micro-encapsulation of drugs, etc. The problem is there is not enough support for these products to penetrate the market.

European Commission Vice President for Enterprise, Günter Verheugen, speaking at the European Parliament last month said "I do not accept the argument that we should use highly toxic substances to have economic growth or to save jobs. The decision can only be one of protecting humans and nature from preventable risks, unconditionally." WECF believes a healthy environment is a prerequisite for the healthy development of every human being, and a healthy society is a productive one, thus, diminishing the EBD presents a win-win-win, benefiting the environment, society and economy.

I'd like to start the debate with a point that I hope we can all agree about: We can not gamble with the Health of our children.

Thank you.



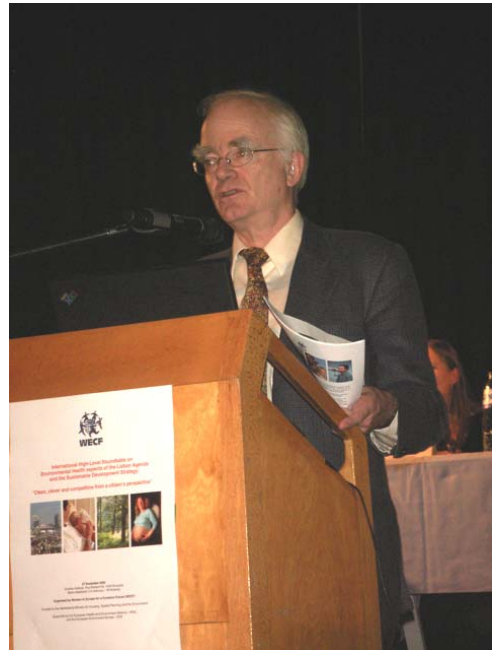
Prof. Philippe Grandjean, Harvard University, US & the University of Southern Denmark

“Chemical Braindrain”

I'm going to talk about an organ that we all have (the brain) because we have become aware that environmental chemicals can damage this organ during development. This serves as an example of what we need to do with regard to chemical control, and how we need to make decision on the basis of science, which we know is incomplete; we only know part of the truth from scientific studies, but there's a whole lot that we don't know. I think, based on Ms. Gabizon's presentation, that this is a very good example that we need to take responsibility and make the right decisions, even if we don't know it's 100% correct—because there's too much at risk.

The Development of the Human Brain

The brain has been designed to be uniquely sensitive to external stimuli—and maybe that's why it's so sensitive to adverse stimuli. This happens particularly during development. The important point here to stress is that the brain undergoes a series of processes that have to happen in the right sequence, if one is delayed you're stuck with that; you don't get second chance to catch up. Whatever brain you end up with is the one you will have for the rest of your life.



With the developing brain it's important to know the windows of susceptibility. Sometimes when I speak with my medical colleagues, we sometimes discuss about the liver, and I think the liver is a very boring organ (and I'm sorry if I embarrass anybody), but the liver is a simple organ that doesn't do all the things that the brain does and you can survive and have a happy life with just a miniscule portion of your liver function. But you will want to maintain the integrity of your brain because it is so crucial to your overall functioning and quality of life.

Here's one of the important lessons we learned from the terrible incident in Japan (Minamata); Thousands of children were poisoned by methyl-mercury. It was learned that the mother could be entirely healthy but exposed to methyl-mercury in amounts that are so toxic that the child was born with cerebral damage. If you have exposure to this toxic substance when an adult you get localized lesions at high doses. With a child, the damage is more widespread, with lower doses. If this goes on during the foetal development it's over-encompassing damage to the whole brain at very low doses.

This is a picture of a child with foetal alcohol syndrome(slide) and the evidence on ethanol, alcohol drinking is entirely parallel to what we know about lead and mercury and a few other substances—the effect depend upon the exact time of exposure. But it took us a long time to document the effects of alcohol, mercury, etc., because we have to wait five to seven years after the child who was born with that brain damage before we could document it with clinical methods.

Evidence from Decades of Research

We did studies in the Faroe Islands in 1986 on mercury. And we started those studies in 1986, and for me to be here now I had to study hard, examine a couple of thousand children several times, do statistics, lots of chemical analysis and analyze all this data: it took me 20 years. Here's what we learned: when you double the prenatal mercury doses, and examine the child at age seven, the child has lost a 1½ to 2 months of development (or, 1.5 IQ pts). Not a big effect, but if you doubled that mercury dose a few times, the child may not be ready for school at age seven. And who would want to give away some IQ points voluntarily? There's supporting evidence from other studies, one from New Zealand—the important thing they noted is that the higher the mercury dose, the more children are pushed over the edge so that they become mentally retarded.



This is more supporting evidence; we put electrodes in the skull of the children to measure how fast electrical signals in the brain are travelling—the higher the mercury exposure, the slower the signal. And you can see here (slide) the exposure limit chosen by the US EPA which is the lowest in the world, lower than the WHO limit, we can actually detect slowing of brain signals at exposures that are a bit below that exposure level. The evidence suggest that with time we begin to find the facts at lower and lower levels; when we turn over stones we find out more. And it's of course not because mercury is more toxic with time, it's because we didn't have the right methods, populations, techniques to determine the toxicity in the past.

Here's the final methodology slide I will show: modern imaging techniques where we asked the child to look through goggles at a visual stimulation. The children with high mercury levels have to use a primary visual cortex that children without mercury exposure do not have to use. So we can even document this with modern imaging techniques, that the brain is wired in a different way if you have been exposed to mercury prenatally.

There are people who don't like what I'm saying, and I understand that. An industry group in the US gave 25 million dollars to pay for advertisements that say that the evidence I am presenting today is uncertain and that I am exaggerating environmental risks of various kinds. If they get specific they will say there are concerns with the evidence available to us. But I must tell you that over the last seven to eight years we've looked very carefully to the issues of whether or not mercury effects were overestimated. What we know is that what we said in 1997 that mercury is very toxic—what we should've said is that it's extremely toxic! As we kept overturning stones we found there were issues that continued to mask the mercury toxicity.

Risk Assessment and Low Reference Doses

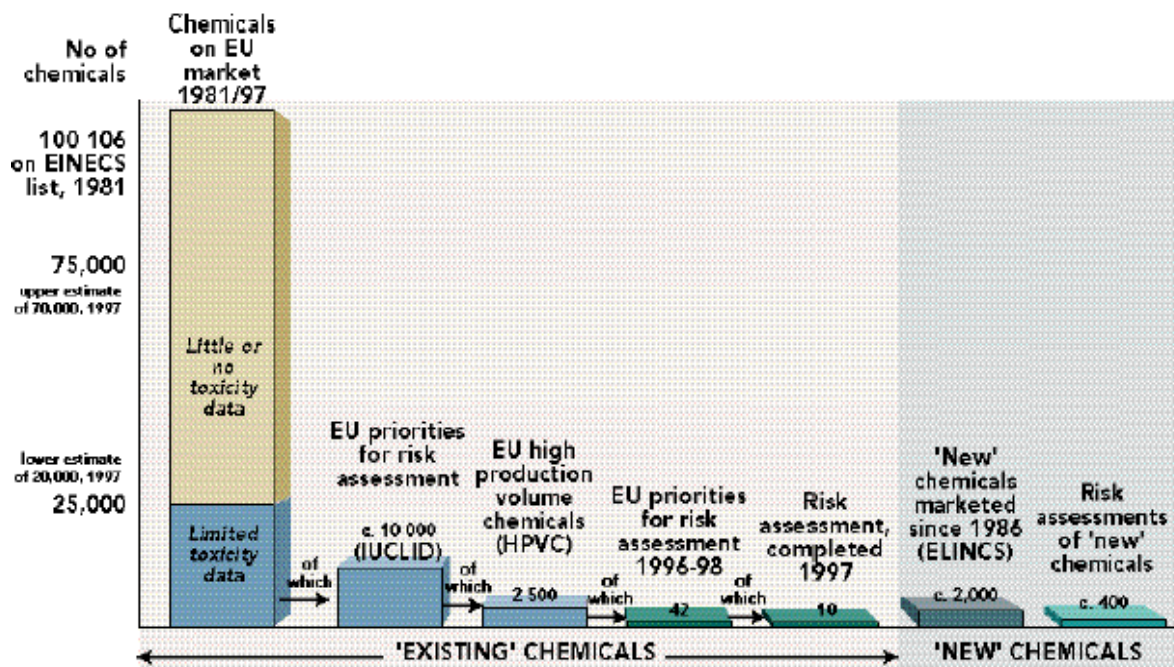
So what we've done recently is to look at risk assessment and examine the US EPA reference dose. We've come up with an updated risk assessment, where we use the most contemporary information and when we do that we get a reference dose half the size of the EPA one (which I said is the lowest in the world). Actually, it's twice the size it should've been. So, with time we find we have underestimated what's really going on, so all those advertisements are wrong.

But this is just one substance—how many substances are there and have we been underestimating the amount neuro-toxic substances? We did a study to look for the total number of neuro-toxicants, on information that is publicly available, and we looked for chemicals that are toxic to humans as documented in clinical poisoning cases. The total number is 201 (not including ethanol). But these are the industrial chemicals that have caused bonafide clinical poisonings in humans. The pesticides are the largest group (which have been designed to be neuro-toxic). These are not exotic substances, or banned, or laboratory chemicals only. The majority of these chemicals are actually commonly used. Then we asked: how many of these chemicals (that we know are toxic to the human brain) do we have evidence on regarding effect on developing brain? Well what do you think? 200, or 100? The correct number is 5 (lead, methyl-mercury, PCBs, arsenic, toluene), where we have convincing evidence that if the chemical is toxic to the adult brain it is also toxic to the developing brain. The point is that despite the fact that the developmental neuro-toxicity happens at a much lower concentration because the brain is so much more vulnerable during development) we still only have that information for 5 of 200 chemicals. Manganese and organo-phosphate pesticides are suspects, likewise fluoride and a few other chemicals.

You might say, why is this happening? One reason is we've forgotten what's happened in the past. With mercury there is a whole schedule of our learning. In 1952 we had the first report on neuro-toxicity in two infants. In 1978 WHO issued the first warnings (“:maybe methyl-mercury is neuro-toxic to the brain). It was great science that includes the uncertainty at that time, but miserable public health. What they should've done at that point is say we have enough evidence to stand up and insist on protecting the developing brain. So it's only now that we've realised that a strategy to prevent mercury poisoning is necessary. The story of toluene is the same, arsenic is parallel, pesticides.

Here's the general scheme for how we learned about these developmental neuro-toxins act on the brain: First we see the neuro-toxicity in adults (poisoning incidents) and the number of subjects involved is very small. But with time we see this involves populations. As time goes by we see it's actually a silent pandemic; silent because it doesn't produce diagnosis, and you can't identify individual kids who have this neuro-toxicity—you have to look population-wise.





We need to identify those substances and treat them as if we had as much evidence on them as we do on lead. If you insist on the proof that we have on lead and methyl-mercury, its' going to take decades.

The Need for Neuro-developmental Toxicity Testing

Here's the chemical universe (slide): we know at least 1,000 are neuro-toxic in laboratory animals, at least 200 (that we know) are toxic to the human brain, but there are only 5 that we know are toxic to the developing brain, and we are only now beginning to prevent human exposures.

The effect of all this can be expressed in IQ points loss, and a cost-benefit analysis carried out in US estimated that the loss of one IQ point will cost society about 6,000E. If anyone here would like to part with a few IQ points at that price I would like to meet you; I think each of us would value our IQ points a bit more than that.

We have very little evidence to the degree of which these individual chemicals contribute to these diagnoses. But there's increasing incidence of some of these diseases and it's very likely that the environmental chemicals play a role. In addition, we believe that they may contribute to degenerative disease in the elderly.

What should we do about this? I emphasize that we know about 200 chemicals are neuro-toxic to adults. We can decide tomorrow to regulate them, but this is not enough because there may be more chemicals hiding (tip of the iceberg slide). Unfortunately the REACH program doesn't focus on neuro-toxicity and I think it is a very serious limitation of that legislation.

Barry L. Johnson, who became the first Administrator of the agency for toxic substance and disease registering in the US said once, "has the foetus become the unfortunate miner's canary for human exposures to toxicants in the environment?"

I think Barry was right. I think we need to decide on a plan of action. We need to identify chemicals that are major human neuro-toxicants and regulate them, document human exposures so we can target the most serious exposures, record the long-term consequences of neuro-toxicants so we can better understand how they contribute to human diseases, and we should screen chemicals for neuro-toxicity. The key is we need to fight neuro-toxicity, like we once did 40-50 years ago with the fight on cancer, we need to target prevention to protect the brains of the future. And I'll give you important reason to do that (slide): you only get one chance to develop a brain.

Thank you.



Dr. John Peterson Myers, Environmental Health Science, USA

“A Revolution in Science - New opportunities to prevent disease”

There have been profound changes in how we think about the links between contamination and human health. There have been unexpected discoveries about products, including some plastics, we thought were safe. The most exciting thing about this time is that the science is identifying dramatic opportunities for prevention that we never thought were possible.

Four key scientific discoveries that map the revolution

1. Some contaminants alter gene behaviour at extremely low doses.

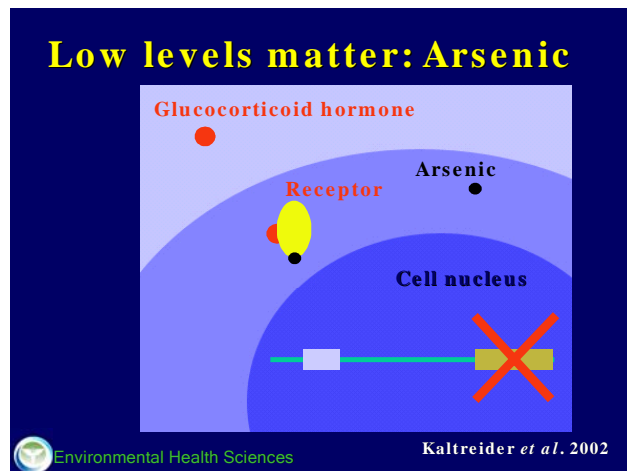
Imagine you have to take a ship from Amsterdam to New York. A traditional toxicologist (worried about the effects of high doses) thinks about how many bombs it takes to blow up the ship. But if you are instead worried about developmental factors (the types of things Prof. Grandjean was talking about) you're worried if the compass is off by 3 degrees, because if it is, you end up in Newfoundland.

2. Adult diseases and sensitivity to subsequent exposures can be programmed during development

3. High dose experiments don't predict low-dose effects.

4. Mixtures ubiquitous; they alter impacts, sometimes unpredictably

These all have overarching implications: It means that toxicology, as it has been practiced for decades, is unlikely to estimate hazards; epidemiology is biased towards false negatives; and health standards are in the scientific Jurassic.



Altered Gene behaviour at low levels

If we take, for example, Arsenic, we know high dose kills, low dose—low effect. But at extremely low levels (10 ppb) arsenic interferes with how genes behave. At 10 ppb, arsenic binds with a hormone receptor and keeps you from making a tumour suppressing protein (if you have a tumour).

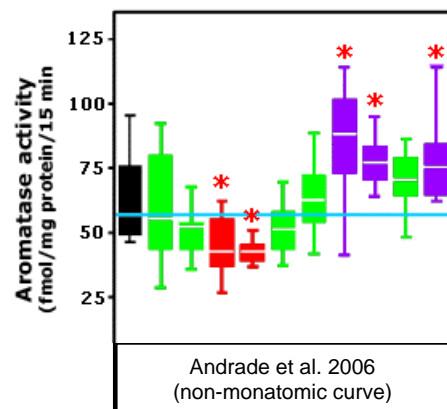
Low levels really matter. Bisphenol A, first produced in 1895 and discovered in 1930's to be a synthetic estrogen and shelved, until recently discovered that it could make all sorts of plastics. It's so prevalent and ubiquitous that all of us in the developing world have low ppb in our fluids and tissues. Last year the question was being asked: how powerful is it as an estrogen? In the past the focus had always been on the receptor in the nucleus of the cell, and there bpA is 1/10 as powerful. But on the surface of the cell it is just as powerful and stimulating a series of signalling events, influx of calcium, gene cascades, involved in regulating weight and insulin levels. This is happening at .23 ppt (trillion), the level in 95% of Americans.

Many studies show effects, but who finds it and who doesn't find it? Ask these questions:

- What was the strain of animals used, e.g. the spray gullied rat doesn't respond to estrogens.
- Was it from a food supply?
- Was it done appropriately?

Does the dose make the poison? At 405 ppm, mother rats exposed to the phthalate DEHP are not affected, but their rat pups are. We are seeing non-monotonic dose-response curves. This curve falsifies basic toxicology assumptions, and the curves are common (e.g., in endocrine disruptors).

Why are allergies increasing? Are there more allergens, or is our immune system more sensitive?



Adult disease programmed during development

Many animal experiments document this (prostate, testicular other cancers). EPA studies show if you want to understand adult cancer you have to look at what's in the womb. Exposure of rats in the womb (10 ppb) causes prostate cancer in adulthood.

What does this mean for epidemiology?

There was a Long Island breast cancer study that took many cases and measured environmental estrogen levels after patient diagnosis and compared this data with controls. This was the wrong approach. They needed to look at what happened 50 years before. Epidemiology designed like this cannot be used to establish health standards. Studies are vulnerable to false negatives.

Mixtures

There was a study of eleven weak estrogens, and it was assumed that adding up all effects would be the same as estrodial, but actually, the effect was double the effect. What's clear is that mixtures interact! They produce unexpected results. In a tadpole maturation study a series of nice pesticides were used developing tadpoles were exposed at levels that generally had no toxic effects. The final result was a majority of them died from bacterial infection of meningitis, not an effect of the pesticides themselves, but the combination of them suppressed the immune system by causing thymic plaques, which isn't a question that people looking at the chemicals one at a time would have begun to ask.

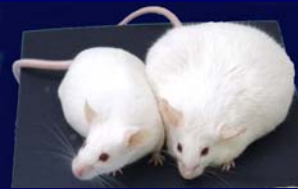
To Summarize

- Some contaminants can alter gene behaviour at extremely low doses.
- Adult diseases and sensitivity to subsequent exposures can be programmed during development.
- High dose experiments don't predict low dose impacts.
- Mixtures are ubiquitous; they alter impacts, sometimes unpredictably.

The bad news is that health standards are blindsided; they are too weak. They can't possible be too strong. But there is good news, because this science that doesn't focus on whether we inherited the wrong gene from our parents, but rather what's interfering with gene expression; that's pointing us towards health conditions that we may be able to prevent. Not all of them, because the science is unfolding as we speak. So if we look at today's epidemics,

- Hormone-related cancers
- Endometriosis, auto-immunity
- Learning disabilities, ADHD
- Autism
- Degenerative diseases
- Pre-term birth
- Obesity and diabetes
- Asthma
- Infertility

New endpoints for EDCs



1 part per billion DES
in the womb

Newbold *et al.* 2005

Same strain of mice
Same caloric intake The difference?
Same activity levels

Environmental Health Sciences

Each one has strong scientific evidence linking some fraction to changes in gene expression during development.

When you read in the newspaper and see 'this disease is linked to that gene...' don't react fatalistically. Instead, ask, what lab is looking at the factors that interfere with that gene's expression, what are they finding, and are their environmental interventions we can put in place to prevent that disease?

Thank you.



David Gee, Coordinator of Emerging Issues, EEA

“The Environment and Health: Low Doses – High Impact?”

I want to share with you some basic argumentation to use when people say that in Europe only 5-8% of mortality and morbidity is caused by the environment. This is the conventional view shared, unfortunately, by the Commission, and many other mainstream “experts” in environmental health in Europe. I think it’s a nonsense figure and I want to give you reasons why.

About the EEA

EEA, independent EU institution in Copenhagen, funded by EU taxpayers, to independently provide data, information, and knowledge to the Council, Parliament, Commission, and others who will use it to help improve Europe’s environment, e.g. NGOs, public, business, local authorities, etc.

Emerging Issues:

There is a forthcoming publication on the environment and pharmaceuticals (Swedish). The biologically active components and materials that we use everyday in medicine, etc. go through us into the environment and are showing up in potentially problematic doses.

There is also an EEA publication, “Late lessons and Early Warnings” on the history of how we came to understand that lead, BSE, S2, the ozone hole, benzene, etc. were hazardous. How did we get there and what was the time lag between sufficient scientific knowledge about the warning and actual uptake into society to do something about it. In general, each case spanned 50-100 years and it seems it takes that amount of time for society to take the necessary steps (politically). It’s our most successful publication (28,000 copies) and Vol. 2 will be out in 2008 with the methyl-mercury story (Philippe Grandjean) and the lead and petrol story (Herbie Needleman).

Pivotal Report “Chemicals in Europe: Low doses, High Stakes?”

In 1998 the we produced a report, “Chemicals in Europe—Low Doses, High Stakes?” which significantly influenced the UK who, along with five other Member States, called for a review of European chemicals regulations, revealed to be totally unacceptable, and thus led to REACH.

Since 1998 the evidence supporting a significant role of chemical and other preventable environmental stressors in causing much European diseases and death (including more recent concerns like obesity) has, for the most part increased in strength (e.g. air pollution, noise, radiations, pesticides, endocrine disrupting substances, and other hazardous chemicals in food, water, consumer products and waste). But in the story of environmental health, and evidenced in the recent press article from DG Environment, this is a key issue; the conventional view is still less than 10%.

Reasons the EBD is underestimated

There are many reasons why a conventional body of experts holds to this view. But If we look at the main reasons why the EBD is likely to be much higher, we can understand why they’re most likely wrong, and thus the EBD is underestimated:

- The **complexity of the cause/effect relationships** (i.e. “systems” biology; cell signalling; cell bystander effects; hormone disruption; timing, sequence and duration and accumulation of exposures; “low dose” effects; human variability; the enhanced sensitivities of the foetus, children, elderly and the immuno-compromised to many chemical & other stressors). This means that identifying clear causal links between specific exposures and harm will be very difficult. The more you research the more you realize how complex this is. Keep in mind the conventional tools of toxicology, epidemiology, and statistical interpretation are systematically biased, though not through ill intent, against finding a cause/ effect relationship.
- **“Inconsistency”** in results from research into such complexity is therefore to be expected, and it doesn’t necessarily constitute strong evidence of no causal effects.



- The reality of **multi-causality** for most of the common diseases of concern. Most science has great difficulty in dealing with multi-causality. Confounders are pushed out but they may actually be co-causal factors. The reality of the causal connection is being lost.
- The **relative crudity of the main methods used for gathering evidence** of health impacts from environmental factors. 15 of 18 common methods used in toxicology, epidemiology, and statistics mainly generate “false negatives,” i.e. they will miss much evidence of harm. (e.g. small numbers in lab and human studies, which do not provide sufficient power to detect many causal links due to: genetically uniform animals, small numbers of subjects (e.g. 500 rats versus 500 million people), small dose ranges of single substances, etc. When you do find the link, it’s almost surprising given the complexities involved. These findings need to be given more weight than negative studies because you expect to see negative studies as well as inconsistent conclusions. Being able to replicate all the possibilities of variables, in exactly the same way, except the one you’re studying, is quite small. As such, many “**negative**” human and animal studies should therefore be seen as “non-positive.” They’ve been unable to fight their way through the complexities to pick up any causal relationships that may be there.
- The **long period between exposures and some harmful impacts** (e.g., several decades for many cancers, two or more generations for developmental toxicants such as some endocrine disrupting substances).
- **Non-existent, or very poor exposure data**, especially for foetal and childhood exposures.
- The continuing **absence of adequate toxicity/eco-toxicity data** for even high production volume chemicals.
- The **lack of clarity and consistency in the cause/effect terminology** used to summarise the evidence about causes of disease. This inhibits consensus about causality. For example, 32 different expressions were used to characterize cause/effect relationships in the first eight pages of a recent summary of evidence on endocrine disruptors (e.g. may be, points to, could be considered that, well established, may be associated with, could be, implied that, etc.). Climate change went through this dilemma as well; 2500 scientists were all using different words. We need a common language and EEA wants to see the situation improved; it’s a significant extra barrier to being able to come to agreements or disagreement about findings.
- The **asymmetry between the common causal criteria** used to move “from association to causation” (e.g. the presence of such criteria can be strong evidence for causality but their absence is not necessarily strong evidence against causality, as Sir Bradford Hill pointed out (1965). He suggested taking off the hat of a scientist and putting on that of a citizen, and coming to a level of proof relevant to the circumstances. For example, something with potential harm to pregnant women and their unborn child will only require a small level of proof, while a potential occupational hazard would require more proof, and an intervention into people’s personal life (e.g. banning smoking) would require a very high level.
- The frequent use of **high levels of proof** to “convict” environmental causes of harm (i.e. “beyond reasonable doubt” rather than “balance of evidence”) and a need to produce both human evidence and feasible mechanisms of action. When people say A causes B they are generally using a high level of proof (beyond all reasonable doubt). For science it’s a good idea, but for policymaking for the public, it’s a bad idea because it will, in general, generate hazards or disasters before you get the answers at that level.
- The large scope for “**manufacturing doubt**” about cause/effect links from within the considerable scientific uncertainties involved, an approach explicitly adopted by the tobacco industry.
- “**Absence of evidence of harm**” is not “**evidence of absence of harm**” due to the non-existence, or inadequate research that is relevant to the issue (e.g. on EMF radiation).

It is usually easier to remove or reduce exposures to environmental factors than to modify genetic factors.

Enterprise Commissioner Verheugen is keen on encouraging innovation and competitiveness. There is much evidence from DG Research showing that well-designed regulations stimulate innovation and do not inhibit it.

To conclude, when you get accused of being unreasonable, remember this Bernard Shaw quote: “The reasonable man tries to adjust himself to world he finds himself in. The unreasonable man tries to change the world to fit his needs and aspiration. All progress depends upon unreasonable men (and women).”

Thank you.



Short Reactions and Discussion

Reactions from the Audience

Henk Dorrestijn, Milieu Defensie (Friends of the Earth, Netherlands)

In my opinion, politicians need to learn more about chemicals [and the situation] themselves. They have no idea, no answers to the questions, and support a business-as-usual approach.

Catherine Wattiez, PAN Europe (Pesticides Action Network)

The directive on pesticides is under revision, and there is a Commission proposal to debate it at the Council and Parliament level. But at the same time the issue is discussed behind closed doors. What is the best test for NGOs to require to highlight the potential neurodevelopmental toxicity?

Chretien Simons, Dutch Cosmetics Association

I agree we need safe chemicals. Most of you talked about animal tests. But how big is the chance that we can get that data from in-vitro tests, so that we do not use animals anymore?

John Hontelez, EEB (European Environmental Bureau)

My question is to Grandjean regarding the 202 chemicals that have the capacity to damage human brains. Your summary says they were found on the basis of systematic examination of publicly available data. Now, with such a lack of data on the chemicals at large (used or in the human environment) what does this say about the possibility of many more chemicals having this effect? What percentage of the chemicals around have sufficient data to make the decisions?

Responses from the Panel

Prof. Grandjean

I think we have enough data on humans to act, to protect developing brains. We have at least 200 chemicals identified with clinical evidence of the effect on brain functions. If the decision is made today, we can act tomorrow. But there are additional chemicals that have not yet caused clinical poisonings in humans and effects on the brain. So yes, we do need more data, but (in relation to the cosmetic association question) there are cell-based techniques and tissue tests that do not require whole animals for identifying new toxicities which can also be applied. I'm not sure how the regulatory agencies want to handle that, but the techniques are available, albeit with certain shortcomings.



If you test chemicals that you suspect may be neuro-toxic, 25-30% will probably turn up positive. If you test a 'bag' of chemicals it will probably be about 5%. Neuro-toxicity is certainly a very common trait of chemicals, so given the stakes we need to initiate a systematic approach to identifying it. And this is an approach that is not part of the REACH regulation, unfortunately.

Dr. Myers

I would like to address cell testing and in-vitro work. Those tools are very valuable, but they have two shortcomings. They can be used to identify compounds that need more testing. One shortcoming is the interaction between different parts of the body. If your cell system only reflects the behaviour of one part, and the problem is a failed interaction between two parts, you can miss the problem. The second problem is what agency is going to use it? There are arguments in the US about the importance of changes of aromatase in the brain. Industry describes this as "not adverse" —this is an enzyme important for masculinising the brain. They say it's just a change in enzyme levels, thus it's not important. Until we get industry acknowledging that signals from cell systems are vital to identifying problematic compounds, and behave honestly in those discussions, we can't, and will never be able to depend upon in-vitro work alone.



David Gee, EEA

I want to link with Myers remarks: 'sufficient data to make the decision.' That's the crucial issue: what's sufficient to make what decision? The sufficiency you need to ban a high-volume chemical will be deemed greater than a medium-volume one. This issue of being specific about sufficiency depends on the situation. Basically, we are the guinea pigs for all of this stuff at the end of the day. So it's an ethical choice about what level of proof you have to put up with. Regulators will say it's not solid evidence that all consistently points in the same direction. It's up to the exposed people, the public, to say, 'we don't need some of these things if the risk is a tiny one to my third generation kid I'm not prepared to play ball.' It's that kind of debate about the level of proof we need. When the man from the cosmetics industry says we want more data, it depends; we might not need more data. If some of your stuff is going in underarms of women, and animals studies are indicating breast cancer as a possible outcome, then that's enough for me to say 'I don't want my females friend's to have that in their armpits. We could wait for "beyond all reasonable doubt" but the evidence that would constitute would be dead women or women with breast cancer—a bit late, really. And that's the sort of debate we need: how vital is that component that they are putting under their armpits? Is it really essential? If we said you've got 10 years to come up with something better would it freak you out? Would it destroy industry, or not?

That's the kind of dialogue we need to have: sufficiency of evidence, on what basis, to do what, and who pays the costs of being wrong in both directions, and let's discuss it.

Sascha Gabizon, WECF

I want to come back to the pesticides strategy question and refer back to a remark made at the ARTAC conference in Paris earlier this month. Shouldn't pesticides be tested like pharmaceuticals? They have similar effects. I want to ask the scientists, is it possible?

And I completely agree with what Mr. Gee said. What is vital? Do I need a non-sticky frying pan? Do I need lotions with phthalates? The answer is no. We can we do without them, but the information isn't there for the consumers, and we need to get it out now because REACH will take 'X' amount of years and the children we are currently bearing will be effected by what we are putting on our bodies and using in our households today. I'd like to see that in the Roundtable: what can we already start doing now?

Chair thanks the speakers and closes the session with a call for a 15 minute break.



Session 2: Roundtable Debate

Georgina Georgiou, Member of Cabinet of Commissioner Kyprianou, Commission for Health and Consumer Protection:

“Reaction to Presentations and the Position of Commission”

Thank you for the invitation and let me please congratulate you on organizing this event on the important topic of health and environment, in the context of the European strategies for growth and sustainable development.

The Commission considers environmental factors to be a *significant* determinant of population health. That is why a coordinated policy approach between environment and health has been set out by the Commission as follow up to the Budapest WHO Environment and Health Ministerial conference. Further action is being prepared for the midterm review of that initiative, in mid 2007. However, before going into more detail on our work related to environment and health, let me highlight some of the points that I understand were raised during the previous presentations and debate.

From the presentation of Prof. Grandjean, and from the publication of *The Lancet*, I would note the particular vulnerability of the foetus and the child to pollution, and in particular the relation between exposure to chemicals and the development of the brain. Even if the particular fragility of the child can be understood almost intuitively, for our purposes of devising evidence-based public health policy, it matters to know that - per unit of weight - children drink, eat, breath and absorb more than adults and are therefore more susceptible and exposed. In this context, I would like to revisit the point of the new EU regulatory framework for the Registration, Evaluation and Authorisation of Chemicals (REACH).

REACH aims to improve the protection of human health and the environment through the better and earlier identification of the properties of chemical substances. A Chemicals Agency will act as the central point in the REACH system, co-ordinating the evaluation of chemicals and running the system databases, namely a public database in which consumers and professionals can find important information. It is true that the benefits of the system will come only gradually, as more and more substances are phased into REACH. It is also true that the final text resulted from 2 years of negotiation on the Commission's original proposal, followed by the European Parliament's first reading opinion, and by a Common Position by the Council reached on June 2006. All this necessarily spells compromise. It can also be said that REACH does not require neuro-toxicity testing and that even the OECD has been debating for 10 years on which protocol to use in animal test for neuro-toxicity research. Despite all that, and although the pace is not the one we would wish for, we should keep in mind that a substantial step forward was indeed taken. REACH is an effort consistent with the endorsement by the EU of the Children's Environment and Health Action Plan for Europe addressing the environmental risk factors that mostly affect the health of European children.

Adopted by European Ministers at the Fourth Ministerial Conference on Environment and Health (2004) on "The future for our children", it highlights the main commitments on children's health and environment and focuses on four priority goals for Europe: ensure safe water and adequate sanitation, protection from injuries and adequate physical activity, clean outdoor and indoor air and chemical-free environments.

I will now turn briefly to the presentation of Dr Meyers, recalling his point that citizens are "regularly exposed to enormously complicated mixtures of chemicals". Most importantly, recent evidence points to the fact that even very low levels exposure to some chemicals can cause adverse human health effects. In this context, I would point out that it is with those concerns in mind that Commissioner Kyprianou is working with other Commissioners to improve research efforts in the area of the health impact of environmental stressors, namely the result of low level, cumulative and long term exposure. It is also for these reasons that the Commission is now in the process of further developing the Environment and Health information system, in collaboration with the WHO.

The Discussion Paper presented by WECF highlighted an obvious bridge with our activities by highlighting that research into possible environmental causes, triggers and/or aggravating factors related to asthma and allergies is a priority for the environment and health activities of DG Sanco. The Public Health Programme is funding a project on Health Examination Surveys which is relevant to the discussion on human bio-monitoring. The next call for proposals of the Programme will welcome



projects aiming at researching the connection between chemicals and, for example, respiratory problems and neurodevelopmental disorders.

This is a particular difficult and methodologically challenging task. More work is of course needed to be done so as to speed up the path from recognition of adult toxicity, detection and prevention of episodes of poisoning among children, and collecting epidemiological evidence of the health effects of low-level exposure. The Commission supports work in this area so that we can hopefully avoid finding ourselves facing the possibility of presently unknown consequences of chemicals to which human exposure has been growing in recent years. These messages above concern vulnerability of children, mounting combined exposure and possible environmental triggering or aggravation of health conditions. All these known or potential health effects may have a heavy health burden. In fact, this could translate into suffering for patients, concern for the family, effort for the carers and a general burden for society as a whole.

These effects can also have economic consequences, measured in increased expenditure of health and social systems, reduction of productivity and loss of economic growth and quality of life. In this context, the development of Environment Burden of Disease (EBD) methods and the use of units as DALY (disability adjusted life years) have the inherent benefit of allowing direct comparisons between very different health impacts, which then allows for comparisons with the related costs. While being a simplified measurement, this is a tool that could be of great help in prioritizing research and action. For that exercise, I would like to point out the need to develop good and robust estimations also of the cost side of the equation (as good and robust as those for benefits). This is the only way to have a balanced debate on the cost/benefit of pollution and exposure abatement.

The debate on the conflict between economic growth and environmental protection is also covered by the renewed Sustainable Development Strategy. This includes the overall objective to promote good public health on equal conditions and improve protection against health threats. The text again stresses the need to include key actions to coordinate research into the links between environmental pollutants, exposure and health impacts to improve first and foremost prevention but also basic understanding. Whereas the Commission has been working towards improving human health and clearly understands that a healthy environment is key to that objective, I would also like to stress that indeed the strand on health has been gradually changing in recent times and the Commission has been consistently promoting - and intends to do so more in the future - the role of health as an productive investment, as a basis and determinant for economic productivity and progress, hopefully integrating Health in all policies in a more effective way.

As for the recommendations, I would like to point out the following:

- The Commission will indeed sponsor research on multi-causality of the environment-health link.
- The prevention of environment-related health effects must go hand in hand with sustainable development. An informed, sound and evidence-based balance must be struck between benefits and costs of reduction of exposure.
- We welcome your support for eco-efficiency as a tool to address both environment prevention and innovation and economic growth.

In order to be competitive, Europe needs to invest in its people, its most precious asset and to keep in close touch with the European citizen and his/her needs. And this also means investing in the early tackling of the environmental determinants of health.

As a final point, I would call your attention to the fact that issues related to health and environment are regularly debated at the co-ordinating and advisory structures of DG Sanco, namely at the Health and Environment Working Party, which incidentally will be meeting in Luxembourg this Friday.



Roundtable, First Round

Andreas Gies, German Environmental Protection Agency

Firstly, I want to comment on what David Gee said about the endocrine disruptor report, regarding the 26 different types of maybes. Though I appreciate the remark I would like to add that I've never seen a situation where 150 million Euros that the European Commission spent was so well invested than in the investment in EDS. It was really great scientific progress within the ten years of research. Secondly, the scientists spoke with a clear voice. They clearly said it was worth regulating—I've never heard such a clear voice from scientists except when they were asking for money. That is a step forward and we need to hear them all, especially in the REACH discussion

When we talk about integrated health into the environment pillar of the Lisbon Strategy, no, I think it should be *integrated into the economic pillar*, because safe chemicals are an economic value. We know from big companies, e.g. car companies, that they don't use phthalates anymore. They don't want the risk of recalling a whole series of S-Class Mercedes because mothers are afraid to drive their children in a car with phthalates. They don't use them at GM or Ford. But we leave alone the dozens of small and medium enterprises (SMEs) which bend their back for our economy because we, as experts in the EU, say "maybe," or that the chemicals are safe. They aren't safe. The SMEs are really dependent on the scientific opinion of the EU community. Look at Bisphenol A: it's really a shame. *SMEs depend on safe chemicals* for their products or they won't succeed on the global market, and health has to be integrated into the economic pillar.

Laurent Vogel, ETUI (European Trade Union Institute)

Integration of public and environmental health into the economic pillar can be ambiguous and I'd like to be cautious. The discussion paper of WECF was excellent but I was sceptical about the 'win-win-win' model. Sometimes it exists but in many other situations it doesn't. We should recognize that there is often a conflict between the private interest for making profit and human health. We heard from an earlier presentation about research funded by industry resulting in the systematic underestimation of risks. Let's be cautious. We should clearly state that human health and environment must be defended for themselves and should not be subordinate to any economic strategy.

Section 4 in the discussion paper discussed regulation. There was terminology used like "modern regulation" but usually this is a way to introduce a agenda of deregulation, soft law, voluntary agreements, etc. But the real debate is not about modern or old regulation, but rather social and public control. If we want to improve the environment and human health we need to reduce the discretion of the industry and increase the possibility of social and public control of industrial activities. That means regulation- in many cases more detailed and prescriptive. Look at asbestos: it was a tragedy. We lost, at the global level, millions of lives because we let the industry implement self-regulation, on a so-called risk approach—"we produce a carcinogen, we tell you how to use it in the safest way possible, and then we'll see." And we have seen. It was a catastrophe because we let industry self-regulate.

Where there is a very dangerous substance, and when it's possible to substitute it, there should be no place for risk approach; there is only one answer: ban it. By prescriptive regulation, thus avoiding wording like "modern" regulation and "better" regulation, which are very fashionable now. When there is a conflict between private profit and human health, human health should come first!

John Hontelez, EEB (European Environmental Bureau)

Looking at the demand to integrate health into the environmental pillar of Lisbon: apart from pure nature protection issues, a big part of the environmental agenda has come into existence because of concerns about public health. But at the EU level at this moment, the key issue is climate change and the impact on the economy; the link with public health is not so clear. Another big issue that occasionally penetrates the guidelines for Lisbon is bio-diversity. The more traditional health agenda linked to water and air quality has been given less priority, and as a consequence, if we look at the current discussion (e.g. on the air quality directive) it has to pass the *test of competitiveness*. It is no longer an issue in itself that we have to improve air quality and reduce the number of people dying from bad air quality. Therefore, I think it important that we emphasize that there are a lot of health problems related to environmental quality that we thought we already covered.

Secondly, what is the environmental pillar of Lisbon? There is none really. There are some environmental issues linked to competitiveness, i.e. energy. The Energy agenda has become part of Lisbon, but that's because energy security and prices are affecting competitiveness. It's good to get



more priority, but we have to be careful with speaking Lisbon language, i.e. win-win-win, because Lisbon will not strengthen the environmental agenda.

The other issue that always appear is the “proof.” If I look at the text of the 2005 Spring Council, which was reorienting the Lisbon Agenda, it says, “any agreement on REACH must reconcile environmental health protection concerns with the need to promote the competitiveness of European industries.” This means, yes we have an important environmental agenda but it needs to go through the Lisbon test (competitiveness).

My bottom line is it is wise to insist on a very strong health and environmental agenda, independently of the Lisbon Agenda. It should have its own high priority standing in EU policies.

Intervention from the Audience

David Gee, EEA

To clarify the point about the *endocrine report*, it's everything Andreas said, and there is an official report coming from the workshop, where the language is rubbish. But with the official report there was a separate declaration that people could sign, and most of us did. That was very clear. It was just the official report I was concerned about because that will have more weight in circles.

Rita Naloo, Tiye Intl, Netherlands

We want to hear a *citizen's perspective*. We heard about scientific results, the Lisbon strategy without an environmental pillar, etc. But if we want to have a citizen's perspective, what's their role? How's the information coming to the local level? If we want to come to a citizen's perspective, I want to hear more about what has been done with the research results to change the agenda for the benefit of people. Everything we know today, the impact on the unborn child, the impact on children's lives—it's still the same and nothing has changed. Women want to be a part of it but there's still no power. How can we upgrade the role of people at the local also governmental levels?

Roundtable, Second Round

Michel Catinat, DG Enterprise

I want to react to some remarks from the panellists, and the WECF discussion paper. Basically, what you ask is whether Lisbon can be a framework of interest for the issues. I want to say that according to me there are different reasons why Lisbon could help you.

Firstly, Lisbon is a framework for integration, and what you are asking is to have your issues much more integrated with other policies. As you know, we have different guidelines, in particular guidelines where we've tried to integrate Lisbon with environmental issues. The discussion paper mentions it (Guideline 11), where we try to ensure that if we boost growth it will be respectful to the environment. Most, if not all, of the Member States address environmental sustainability and environmental issues in their National Reform Programmes (NRPs), which is encouraging.

In response to what the EEB said, I agree that Lisbon cannot be an environmental policy and the objective is not to substitute environmental or public health policy. But what I think is important with Lisbon is that we take the different policies in a framework and look at the *coherence* in the policies.

Secondly, do we need to boost economic growth? I know that this has sometimes raised concern. I want to repeat that the Spring EU summits will have Lisbon on their agenda and for the Heads of State, the Lisbon policy is on the top of the policy agenda. The reason is that all these politicians, DG Enterprise, VP Verheugen, President Barroso—we think that *growth is a necessary condition* if want to improve our social models and to be really ambitious with environmental and public health policies. If you look at the reality, nobody will contests it: in industrial countries where the economy is the highest, the environmental performance and public health is better. The idea behind Lisbon is if we don't have growth, we will have more difficulties in protecting the environment and ensuring social cohesion. That's why growth is necessary.

But again, it doesn't mean that we don't have to take into account the impact of on the environment and public health. In Lisbon and all NRPs, the Member States are taking these issues into account. They are very important issues, and I don't want this panel to conclude that Lisbon is opposed to environment and public health; the challenge is to ensure that they go hand in hand. And there are a lot of solutions to ensure that.



John Huss: MP Luxembourg, Council of Europe

As an MP in Luxembourg for the Council of Europe I was charged to make a report for the Council of Europe about the prevention of environmentally related health hazards. I have the following brief statements:

- I agree that the burden of disease is not overestimated, but largely underestimated, thus I don't agree with DG Environment's conclusions (re. recent article in ENDS Daily).
- I agree with the main points of the discussion paper, so I won't discuss it.
- REACH has been weakened in an irresponsible way and must be strengthened, especially the substitution principle.
- On the question of environmental health policy in pillar of Lisbon; I have no precise idea, but I think it's important to integrate environmental politics into health policies first, then, into all policies at the European and National level.

The main features of the forthcoming report on environmental health for the Council of Europe include:

- All the points mentioned today
- Controversial issues like electro magnetic fields (EMF), new sicknesses, syndromes, etc.
- Outline claims of civil society.
- Insist on developing a global strategy on prevention for environmental health, stressing the precautionary principle, cross-sectoral mergers, independent expert analysis, involvement of civil society, and training of professionals in environmental health and medicine

There have been many examples where industry has been invited to cooperate, but it's clear from the past 10 years that on more than one occasion they've manipulated results. The public should be able to nominate people into expert groups. I want more transparency and participation of civil society.

Loredana Ghinea, CEFIC (European Chemical Industry Council)

Integrating health into our thinking is the most natural thing and our industry has already taken this thinking on board. Otherwise, our Responsible Care and Product Stewardship programmes we are developing would have been and will be for nothing. On the matter of health being a prerequisite or not, it's like the question of the chicken and the egg: we need a healthy society to have an efficient economy, but we also need an effective economy to have a healthy society.

We need, as an industry, to have safe products as they are used everyday by people. So we definitely support this approach as we don't have any possible interest in hindering our own future by damaging people's health. I think we are trying to do things correctly in our every day attitude and activities.

Intervention from the Audience

Henk Dorrestijn, Milieu Defensie

I want to address the ETUI representative who talks about social and public control and more regulations. I think primarily politicians should be educated in environmental matters. They are ultimately responsible, not the citizens. There is a new practice in the Netherlands where we are invited to think along and give comments (e.g. advice on how to diminish mercury output). I also want to say we need more white label politicians and civil servants, with the right vision, motivation, sufficient education and knowledge, more independent groups, better reports, and practical things like tests on fruits and vegetables in our gardens, for instance.

Sascha Gabizon, WECF

In reaction to the DG Enterprise comments on 'growth comes first,' I want to point out that the cancer rates are highest in the richest countries. We see many cases of testis cancer in Scandinavia, but also evidenced from world cancer figures. It's not growth first, but when we grow, we must grow with healthy products. If we really look at the effect of the lowest doses, how does that change regulation on mandatory substitution when substitutes are available? How do we operationalize this, for example, with pesticides that we know are having pharmaceutical-effects? What does that mean for the pesticide strategy of the EU? We need substitution where it is available (and the best substitute is organic farming). How can we integrate this into the economic pillar of the Lisbon strategy?

And I want to come back to the citizen's information question: we completely agree. In the case of hazardous chemicals in air fresheners our government agencies didn't dare inform or warn citizens. How can we be sure we have sufficient information and the agencies are also taking on these matters



and bringing them to the lower levels? We need to work more with the support of women's, health, and environmental organizations.

Sonja Haider, WECF Germany

Today we learn again that it's not just the doses, but the timing. How can we implement the knowledge about this? We now have thresholds, but what can we do to implement the windows of exposures into our policies?

Roundtable, Third Round

Birgit van Tongelen: DG Environment

I want to say first on accessibility of citizens to environmental health information. In a recent Commission document there is a specific action point for enhancing public access to information. We've identified the need and are doing something about it. We want to link the environmental and health information and bring it closer to citizens (e.g. websites, and other easily accessible tools).

Regarding the discussion paper, on the point that the multi-causality of the environmental-health link needs to be recognized by the EU, I want to say it was a priority in the 6th EAP and adopted by Environmental Health Action Plan. Regarding the point on 'further investigation of the environmental health link,' this is what we are doing now; we are implementing all actions in cooperation with DG SANCO and DG Research.

So here, I would like to say something about the article in the press. It was about the Commission Staff working document on the Environmental Health information review, in the context of Environmental Health Action Plan. The article is very sad; it gives a completely wrong picture, a sad misinterpretation of conclusions. The quote "the known impact of the environment on health is relatively limited in the context of public health issues as a whole," was pulled out and blown up. It is not our opinion at all and the document is completely inline with SCALE. In 2007 we will prepare a midterm review on implementation of the Environment and Health Action Plan.

I just want to reiterate that multi-causality is recognized and further investigated by the EU and we are still committed to do so.

Prof. Grandjean

I'm happy about the discussion paper and REACH legislation, however, I would like to see both as a first step in the right direction. I come from the medical science field and I think we have some skeletons in the closet to deal with. Firstly, chemicals are innocent until proven guilty. How did they get that right? This is a catastrophe. To deal with it we invented risk assessment about 25 years ago. We looked at single individual chemicals, one-by-one, in animals. With some uncertainty, we continue to polish our findings, and after 25 years, we are not very far ahead. We realize that paradigm didn't work. And in the interim, we discovered ethics.

Imagine if I ask an ethics committee if I can expose pregnant women and children to substances that are probably neuro-toxic, as shown in animal studies, however I will use lower doses than what makes the brain of a rat shrink. The ethics committee will of course say: no way! But I have evidence that we are doing that very thing! So I am observing experiments happening in my face, and I'm not allowed to conjure them up in the lab so I can study it scientifically; I can only look afterwards.

I think the EU commission made a head start on the communication on the precautionary principle which lays out framework. We need a new paradigm that leads to precautionary-based decision making. But we also need better decision roles—how do we protect pregnant women, small children and the foetus under uncertainty? We are not there yet. The WECF discussion paper touches upon some very important issues, but we need to see this as a first step and many more steps are necessary.



Intervention from the Audience

Diana Smith, HEAL (Health and Environment Alliance)

My question is to the representative of DG Environment: You said the article was a sad misrepresentation. Will the Commission ask for the right to reply?

Helen Lynn, WEN (Women's Environmental Network)

In response to Prof. Grandjean's remarks, I think the way to get women's concerns heard is to give pregnant women a 'seat at the table.' If you present people with the facts and ask them if they are willing to take the risk, you can be sure most women will say no. We need to look at ways to give women an active role and not just treat them as victims.

Ulrike Schmuelling, German Federation of Chemicals

According to Eurostat statistics life expectancy for all Member States (even new and including Turkey) is increasing every year. That's good news. And perhaps we should look at the effect of pharmaceuticals in the environment; it is well known that the biggest endocrine disruptors are estrogens released by urine of women taking oral contraceptives. My question is if you will lobby for the prohibition of oral contraceptives in the future?

Professor, Environmental Health

I had hoped I wouldn't hear such a statement as was just made by the German chemical industry representative. I wonder if she would ask herself if children today with asthma and allergies (which is increasing) have a better healthy life now than they did 10-20 years ago? I'm pretty sure the answer is no. Such a statement brings us back compared to what we are trying to fight for.

My other question is how do we inform the public? We hear often about making info accessible on internet sites, but sometimes this info is not intelligible to the public. How can we express uncertainty? We know a lot, but we know there's a lot more to find out. How can we reach a balanced decision for the public? This is a very difficult situation. For instance, air pollution is responsible for many deaths every year, yet still the European Parliament decided not to aggravate air quality standards.

So, we have prescriptive regulation and bans. If we want to take such measures, we have to inform the people; have a main message. The actual standards that we produce are a compromise of what we should do and what we can do. If we inform the public like this, they can take more action themselves.

Final Remarks

John Ryan, DG Sanco

We agree that integrating health into Lisbon is a good argument to make. It's been backed by the many studies we've commissioned to show that good health is a factor of economic growth. That was thus our starting point for integrating health into the Lisbon agenda. It's important to note, we have developed an indicator—the healthy life years indicator—which is a key indicator in the Lisbon agenda. It doesn't just measure life expectancy, but life expectancy in good health.

My responsibility is the public health department. We are trying to establish, with our colleagues in DG Environment, a better operational health and environmental information system; setting up monitoring and means of testing environmental stressors and reporting on the indicators on a regular basis (online). We are trying to increase the number of indicators collected and measures across Europe, looking at asthma, allergies, but also lesser known conditions like autism, and neuro-degenerative conditions which may be linked to environmental factors. This is what we're trying to do to improve policymaking, because policy making in the absence in data is difficult.

A second element to improve is reporting. Two forthcoming reports on children's health and women's health both have chapters or paragraphs dealing with environmental factors. Regarding EMF, we have legislation in place and are continuing research. One of the other major factors, and I'm surprised no one mentioned it during this meeting, is banning smoking in indoor spaces which will have a huge impact over time. It's not only the effect of chemicals, but also lifestyle (e.g. tobacco).

My final remarks are that we recently launched the EU health portal, in 22 languages, with aims to rewrite Commission information into citizen language. To come back to the various questions about



informing citizens, this is our effort to contribute to better informing citizens. We're grateful for any feedback on it.

Jean Huss, MP Luxembourg, Council of Europe

I'm critical of some statements made at the table, i.e. the change in behaviour of the chemical (and other) industries. Indeed there are some changes, but only some. With REACH we saw blocking from the chemical industry and we have to fight for at least the substitution principle.

Another critical point is the contribution of civil society in research and expert groups. We've had so many cases, e.g. asbestos, tobacco, etc., where industry has manipulated much, and that's going on now. My question is how is the position of the European Commission with social control on one side and really contradictory expertise on the other (e.g. in the case of mercury). In all expert groups there must be an equal representation of civil society, and NGOs must have a right to nominate experts and have contradictory and transparent discussion about the hazards.

Michel Catinat, DG Enterprise

I would like to draw two conclusions from this debate, primarily on the points: information & framework. Information: If we had full information about what are the hazardous and good substances and everyone agreed, we would've solved the issue. The prime objective of REACH is about providing information. So I hope what will result in the dialogue concerning REACH will be feasible.

Framework: We need to create certainty, clear-cut rules, and a framework. My concern with the substitution principle and the precautionary principle is that it's badly used. I know that some years ago there was a communication to try and establish how to use it, but it has never been used that way by the politicians. So we have to be very careful if we want to introduce these principles; we have to define all the rules at the same time to ensure the decisions will not be arbitrary. If anyone is able to decide immediately that the substance needs to be banned—there are so many substances, of course, asbestos is an easy case, but we have to be careful that we have a good framework.

Loredana Ghinea, CEFIC

I wanted to address the remarks that chemicals are innocent until proven guilty—that doesn't advance us very much. One cannot live in a chemical free world. There are no alternative to chemicals, just choices about how we can use and manage the chemicals. I hope we can all do some more work to show this side of the story to the public. They are also concerned about this as much as we are.

I'd like to end by taking the advice of Dr. Myers, to not have a fatalistic attitude to things. I believe that we can keep trusting that science and medicine can bring progress in these issues, and help cure diseases and save lives, with the help of chemicals, which are indispensable for that.

Andreas Gies, German Environmental Protection Agency

No, we don't want to live in a chemical free world—7% of the world's income depends on this industry, but we do depend on a safe chemical industry and safe products. Only three years ago REACH was considered 'the end of civilization.' Its crucial that the attitude of the chemical industry changes and becomes more proactive. We've cooperated with many companies and had constructive dialogue, but not with chemicals industry as a whole.

Regarding the slide of Myers—the outcome of scientific work independent of the people who found that—that becomes a problem when we give the responsibility of regulation back to the industry. Last year it was published that 30% of researchers reported they made changes to scientific strategies and work plans due to interventions of the funding bodies. That's a major problem and we need to take a look to independent science and assessments throughout Europe.

Laurent Vogel, ETUI

Life expectancy is increasing but so is the social gap in life expectancy, and that's bad news for Europe. After years of decreasing it is now increasing; the people from working class have less life expectancy than those from the richer classes. Why? There are many causes, but the exposure to chemicals in the workplace is one of factor. Look at the French data: about 3% of managers are exposed to carcinogens in the workplace, versus 35% of the blue-collar workers. It means we don't have the same position on substitution of carcinogens, etc., because we are not exposed to the same dangers.



I don't agree with the representative of DG Enterprise when he speaks about the lack of a clear definition of substitution. The problem is not so much about definitions. There are two different political visions. For one side, a clear position was adopted by the European Parliament in the first reading of REACH. From the other side, the Council of Ministers and the present Commission supported a more vague wording of the substitution principle in order to give more discretion to the chemical industry.

Birgit van Tongelen, DG Environment

Coming back to the question about the article, I know my hierarchy was very worried about it, but I don't know if there is a decision on a written reply. We have this week a meeting of the consultative forum where this will be clarified with all the environmental health experts.

Finally, I would like to emphasize the continuing commitment in the field of environment and health despite the negative, false alarms. And we are preparing the launch of a bio-monitoring program with a study population of children and their mothers, with the aim of testing the feasibility of bio-monitoring as tool for policy making.

Prof. Grandjean

This is an important time and my mentor, during my fulfilment of my doctoral degree, advised me to look at my dissertation and imagine reading it 10 years later—don't you want to say: 'wow, that was so visionary for the time.' This is a very tough test, and neither the discussion paper nor REACH will pass this test, but they are important steps forward. Think about what needs to be done after this meeting, after REACH, because these are just first steps, but we need to get the process moving on.

John Hontelez, EEB

Again, a few words about Lisbon and Health. I don't think the concrete actions Lisbon is promoting are necessarily bad for health—i.e. the promotion of research, or liberalization of the electricity market. I'm more concerned about the other health effects, i.e. the liberalization of labour markets which can lead to stress and not environmental health problems, but those related to the social position. We should worry most about the insistence on competitiveness proofing, impact assessments—there's the problem.

I suggest not connecting the health agenda with the economic agenda, nor to prove that a better health is better for the economy, because we've got to fight for good public health policies irrespective of whether they are good for the economy or not. We should fight against the idea of cost effectiveness. It used to be we want to do something and what's the economically best way to do it. But now we are shifting to a cost/benefit approach. The DG Environment paper discussed in ENDS Daily does say: "When safe levels cannot be set or cannot be achieved, the benefits must be balanced against the economic costs." We shouldn't always prove that health policies are leading to economic benefit. I simply don't agree. If you can show that people who are still economically active and getting ill and working in factories, then you can make that distinction, but what about those above 65 years? Maybe the only real economic benefit they have is helping take care of their grandchildren. We do want these people to also be protected. Impact assessment is the key concern here.

On the public and REACH, yes, REACH will lead to more information, but we need to distinguish between consumer and citizens. Consumers take decisions and its essential they know what the product is, but citizens takes exposure that they don't necessarily want. On the latter point, REACH is severely damaged by low levels of transparency. What annoys me is the violation of the Aarhus Convention. There was a coordinated effort of CEFIC and conservative lawyers to prevent citizens from going to the European Court if they thought the European Chemicals Agency has taken a irresponsible decision. But the chemicals industry can go to court of they think the European Chemicals Agency has taken decision not to authorize a chemical. Citizens can't do the opposite if they think the authorization is based on false grounds. I hope this can be corrected in the future, because in this way the EU is violating a convention that it has ratified.



Sascha Gabizon, WECF

On substitution, yes, it is complex. Phthalates—we find they are not only dissolving plastics but testis. They are being used in neo-natal tubing. We have substitutes, but the barrier is the market—they are too expensive. We need to create a market for them so they can become large-scale.

And we should taken into account the costs to the economy; here we need mandatory substitution because these chemicals are creating a huge cost to society. Not only do we have more children who are ill and need healthcare, but then also more parents who cannot work productively because they have to look after their children. In NL we have seen huge increases in children who require special care and can no longer can go to normal schools, and all this is a cost to the economy. Where we have substitutes we need to promote mandatory substitution, based on a wide range analysis, accounting for all issues, e.g. technology, financial feasibility, and different types of health effects, etc.



We need to reverse the burden of proof (in all economic sectors). As Grandjean said, humanity is the guinea pig for the chemical industry. For example, the consumer organization was brought to court by Sarah Lee corporation for warning consumers about possible carcinogenicity of air fresheners. They claimed there was no proof. We need to change this: industry needs to prove that they are not dangerous.

I would really encourage DG Environment and DG Sanco to make official statement on the ENDS press release—that it was a mistake, and there has been no exaggeration of environmental health effects.

Closing Remarks, Chair Mary McPhail

Thanks to roundtable participants and speakers and audience for active engagement.

We've heard many of the participants give expert knowledge and compelling evidence calling for a new paradigm shift to risk assessment in relation to environmental impacts on health. The evidence has been around (some say years, others say decades), but it is building. Clearly WECF, in bringing us all together here, is trying to add impetus to the possibility of change in relation to this compelling information; informing citizens, people, men and women, NGOs, activists, and scientist to bring ultimately to the table the politicians who are ultimately responsible to make the necessary changes. And the dialogue with industry is important and compelling, but needs more weight from the citizens perspective about the precautionary principle and what the voice of citizens is in this debate.

Thank you all, and to WECF, for taking this important initiative. As it was said: we are the biggest experimental group ever. It's up to all of us now, for ourselves, and future generations to be part of the moment forward with the evidence and paradigm shift.

Post Event Developments

Following the event, a press release was issued and appeared in ENDS Europe daily, along with other diverse news items. WECF amended the discussion paper presented at the event to reflect the insights and outcomes of the afternoon and sent a personal letter coupled with a position paper and recommendations to European Commission President Barroso, Commissioners Dimas, Kyprianou and Vice Presidents Verheugen and Wallström, the Director Generals for Health, Environment and Enterprise, Ministers of Environment, Health and Industry, as well as to MEPs of the Environment, Public Health & Food Safety (ENVI), Women's Rights & Gender Equality (FEMM), Industry & Trade (ITRE), and Employment & Social Affairs (EMPL) Commissions. The materials were meant to draw attention to the great amount of scientific evidence about the influence of environmental factors on health, the urgent need to translate this into all policies, and to give recommendations on how to move forward in the right direction.

WECF continues its work in the fight to ensure a healthy environment for all.

