

Plenary session of June 1st 2001

“Protecting water so as to not have to prohibit its use”

What measures? For whom ?

Discussion lead by Gilles SCHNEIDER

News Director at Radio France International

I. Introduction

Gilles SCHNEIDER

Madam Prefect, Ladies and Gentlemen, welcome to Metz for the second part of the international conference organized by the Rhine-Meuse water agency, under the patronage of the Ministry of Planning, Development and the Environment. Yesterday, we heard the key speakers. This morning, we shall hold three discussions in order to address three subjects with our guests – new pollutants, new diseases, the expectations of citizens and finally is there a risk? The discussion will also be open to members of the audience and Internet users, who will be able to ask questions *via* the Internet.

Round table : New pollutants, new diseases

Participants :

Professor Philippe HARTEMANN, University of Medicine of Nancy

Doctor Marc SEGUINOT, European Commission, Directorate General for Health and Consumer Protection

Doctor Philip W. HARVEY, Chief of the National Centre for Environmental Toxicology, specialist of endocrine disruptors in water, Water Research Centre – WRC (London, United Kingdom)

Doctor Christian PENALBA, Director of the department of infectious diseases, Corvisart hospital, Charleville-Mézières, Ardennes (France)

Doctor Florence MÉNÉTRIER, Laboratory of radiological toxicology, Life Sciences Unit, French Atomic Energy Commission (CEA)

Professor Jean-Marie PELT, President of the European Ecology Institute.

I. Report of the workshop “New Pollutants, New Diseases”

Professor Philippe HARTEMANN

1. Introduction

The subjects addressed by the papers read at the workshop were as follows:

- the different forms of pollution (chemical, microbiological and radiological), which still need to be studied,
- their effects on ecosystems and humans, who are at the top of the food chain,
- the application of the preventive and precautionary principles in order to better assess the associated risks and implement monitoring and regulations to control the risks.

Dr Marc Seguinot told us about the new health strategy of the European Commission, which is an overall strategy that will particularly be supported in a European forum where all these problems will be discussed by health professionals, users’ representatives and scientists. The strategy also provides for the creation of a general system to exchange data via the Internet, in order to circulate information more speedily between countries, as monitoring and vigilance are of primary importance. He told us about the relationships that can be initiated at conferences such as this one between national public authorities and the Commission.

Pascal Beaudeau, representing the French Public Health Institute (INVS), presented the new approaches used to monitor epidemics and health risks. Lastly, Dr Christian Penalba told us about

the concerns of general practitioners, who have the face the difficulty of making the connection between diseases and water and the problems of implementing preventive action. The workshop was therefore very rich in terms of its scientific and technical content. I will merely draw attention to a few major observations that were made with the help of the secretaries of the workshop.

2. Findings

a. Water and health: a real issue

Every eight seconds, a child dies of a waterborne disease in the world. That ought to make us work together to try to improve things. True, the situation is much better in France. But obviously, much remains to be done, keeping in mind that any suspension in preventive measures immediately leads to serious problems. That has been seen in many countries, particularly in the countries of the former Soviet Union in recent years, where serious water-related diseases are making a comeback.

b. Be wary of false certainties

Water microbiology developed greatly in the 19th century. The 20th century neglected scientific knowledge in the field. People had the false certainty that because there were no indicators of faecal contamination, our early 21st century societies could conclude that there were absolutely no micro-organisms. But outbreaks such as that in Milwaukee and other epidemiological studies have shown that there are micro-organisms that have absolutely nothing to do with faecal contamination or that are more resistant than the indicators. That is why the possibility must be considered of water that meets the standards but is still not safe.

c. The importance of the chemical risk

The chemical risk was emphasised by many participants and a number of uncertainties still remain, even though our understanding of some hazards such as those relating to atrazine is increasing. That is because knowledge is still fragmented, in view of the number of substances produced across the world. Several substances are not treated by conventional treatment plants. Also, the toxicity of many metabolites is unknown. The effects may be worrying, if we can demonstrate that there are interactions between endocrine disruptors and the human metabolism, along with the possibility of cancer or other disorders. But water is one of many vectors. That is why the problem must be approached in a way that takes account of all exposure – through water, food air etc.

d. The emergence of new dangers

New dangers are emerging. For instance, what is the risk of the waterborne transmission of BSE prions? What happens of the residues of drugs that are present in the environment? Are they ingested by the public? We must be concerned about these questions. We must react appropriately. While we must not create panic in the population, we cannot neglect the risk these new dangers bring with them.

e. The insufficiency of preventive and educative resources

The resources for prevention and education are obviously insufficient, which brings us back to the previous point – the best way to avoid panic is to work fully transparently. But that implies that we must have the possibility of informing and educating all the players. Dr Penalba's experience shows that it is not easy to devise a brochure for exposed populations.

f. The issue of our relationship with nature

We must never forget our relationship with nature. The workshop began with a paper from Ms Delelis, who reminded us of the importance of wetlands. It ended with the contribution of Professor Pelt, who pointed out that a degraded environment is also degrading for humans, who accumulate all the dangers in the environment as a result of their position at the top of the food chain. We must be vigilant and ensure that humans are given a place in an ecological approach.

II. Discussion

Gilles SCHNEIDER

Professor Pelt, do you really believe that there are new pollutants and new environment disruptors ? Is that not an easy reaction we tend to have when we come up against a new problem ?

Professor Jean-Marie PELT

I believe that new problems are indeed emerging. Of course, we must not forget that we absorb most pesticides through our food, the air and rainwater, as was shown in a very recent study conducted in several French cities. The media must not give the impression that water is the only or even the chief channel of these new pollutants. But we must be aware that these discoveries are new openings towards the toxicity of the products. Often, toxicity has only been considered in terms of carcinogenic effects and immune suppression.

Gilles SCHNEIDER

However, the problem is quite real. The figures are quite spectacular – a child dies every eight seconds due to water-related problems in the world. Water is therefore a vector of disease and death on the global scale, even though that has very diverse reasons.

Professor Jean-Marie PELT

Yesterday, a participant reminded us that 3.4 million people (the majority of whom are children) die every year in the world as a result of water pollution. But that has largely been forgotten in developed countries, where the water is of good quality all the same. The fact does however make water the first vector of pollution and the most serious vector of pollution.

Gilles SCHNEIDER

It would be interesting to see what the situation is in other countries. Dr Harvey, what do you have to say about the United Kingdom?

Dr Philip W. HARVEY

I can only talk of the problems in the United Kingdom. It is very easy to believe that toxicity will lead to adverse effects. One of my centres of interest is pesticides, which have been present in the environment for several years. There is no doubt that the chemicals present in the environment bring new risks. Science is advancing, but because of their low intrinsic toxicity, the effects take a long time to appear.

Gilles SCHNEIDER

What role does the (French) Atomic Energy Commission play in the search for new pollutants?

Dr Florence MÉNÉTRIER

When it comes to uranium or radon, these are not new pollutants, because uranium, for instance, was present during the big bang, some 4 billion years ago. It is true that the interest in radon has grown in recent years. In particular, we know that larger quantities of the gas are present in some French regions than in others.

Epidemiological studies have shown that radon is a carcinogen when it is present in large quantities and rates, not directly but through its descendants. These have a shorter life and settle on dust and can thus be inhaled. When they accumulate in the lungs, they can lead to lung cancer.

Experimental studies have been conducted (the Commission does not address epidemiology) in the radiological toxicology laboratory on animals. They have shown the carcinogenic nature of the gas in high doses. In small doses, its effect is much more open to controversy. If it does have an effect, it is very small, much smaller, say, than smoking.

Gilles SCHNEIDER

Is it more dangerous to drink water flowing near a nuclear power station or water flowing near a pig farm?

Dr Florence MÉNÉTRIER

After a nuclear power station, the dose levels observed are of about a μ Sievert. That unit is defined by taking the example of two children. One child is throwing balls. That is schematically the activity, i.e. in Becquerel, the number of disintegrations per second of the radioactive element. Let us suppose that the balls are being thrown on the other child, standing in front of the first one. The balls

that touch the second child are the “absorbed dose”, expressed in Gray, a unit representing energy per kilogram.

The Sievert measures the effect the balls that touch the second child will have, to the point where they leave marks on the child’s body. Consequently, with gamma radiation, one Gray is equal to one Sievert. With alpha radiation, because the biological effectiveness of the alpha particles is much greater, the effect measured in Sievert which is also much greater. At the Atomic Energy Commission, we are particularly interested in elements such as uranium, which release alpha particles when they are inhaled or ingested, and can be toxic.

Gilles SCHNEIDER

Dr Penalba, you are not a specialist of environmental issues. When you are with a patient, do you try to find out where the patient lives and which environmental factors could be connected to the disorder from which the patient is suffering?

Dr Christian PENALBA

I am specialised in infectious diseases. In my line, questioning the patients about their practices and environment is indispensable. But the difficulty in obtaining answers is very real, when it comes to day-to-day practices, particularly sexual practices and sometimes practices relating to the environment. That is particularly true of men and country people. At a certain point in the questioning process, the patients lose their patience, as they have the feeling that that is not what they have come for – they want a diagnosis and treatment.

We have trouble making diagnoses. We cannot prepare 30-page epidemiological reports, as someone said yesterday. In addition to the normal consultation, the patient interrogation takes fifteen to thirty minutes. Sometimes, several consultations may be needed for the patient to remember the exact circumstances of exposure. Yet it is rare for us to be able to prepare a report of more than two or three pages at the end of the meeting.

Gilles SCHNEIDER

Does it ever happen that you notice later on that a disorder is a known one? In other words, does your work involve beginning over and over again?

Dr Christian PENALBA

In the field of infectious diseases, we know most of the disorders. It is true that some new diseases can emerge from time to time. But often, that is not due to the newness of the disease but rather the fact that we finally have diagnostic tools to detect it. When that is done, we can look for the disease and ask the right questions, which leads to a considerable increase in the observed cases. The quality of the patient interview is therefore a determining factor in identifying the disorder.

Gilles SCHNEIDER

When, for instance, you identify a new pollutant, what agencies or authorities outside your practice do you inform on the national or international level?

Dr Christian PENALBA

As practitioners in the field, we are alone with our patients and have no alerting role. That responsibilities lies, when required, with laboratories that identify four or five cases of contamination by a new pollutant. The laboratory submits the information to the local Health and Social Affairs Authority. An investigation may then be initiated, during which the opinions of competent persons may be sought on the local or national level.

Dr Marc SEGUINOT

The organisers could have added a question mark to the title of this debate (New Pollutants, New Diseases). We do not know everything, as Professor Hartemann and Professor Harvey rightly pointed out. In particular, we know very little about problems related to minute doses that can have long-term effects.

In that respect, the European Commission initiated an action programme worth several million Euro in 1999, with the sole aim of identifying the causal relationship between diseases and pollutants. That is a very vast field for research and we must be careful of what we say.

Gilles SCHNEIDER

Do you mean that while great care is always a must, there could be a case for retaining some information ?

Dr Marc SEGUINOT

Obviously, we must use great care. But while prevention is always desirable and relatively easy to implement on the basis of established knowledge, we sometimes have to face difficulties in the application of the precautionary principle. It applies precisely when the information available is not sufficient to achieve certainty. However, that should not mean that we systematically apply extremely restrictive conditions to all new pollutants, which could occur in minute doses.

Gilles SCHNEIDER

But how are politicians to tackle the problem of having to face violent reactions on the part of public opinion and choosing between decisions that leave room for risk and decisions that could turn out to be excessive if the actual risk happens to be limited?

Dr Marc SEGUINOT

Each player has a role. We put special emphasis of the role of the scientific community in this respect, and also the role of politicians. Openness is probably the key word: science must produce clear and consistent results in terms of epidemiology and acceptable risks. Politicians can then implement clear decision-making processes based on corroborated information that will be more easily acceptable to the public.

Dr Christian PENALBA

I would like to add that as practitioners in the field, we are often disappointed by institutional communication, which often comes to us via the general media or even patients, and which ignores us completely. The situation has been common in the last decade and is a real problem.

For example, that was the case with listeriosis – we were given to understand that listeria had been found in a cheese factory. But we were not told if the pathogenic agents could be found in cheese that had been marketed or in tests prior to marketing. The information is often very sketchy and incomplete and we do not know how it is to be interpreted. That was also the case with communication in respect of HIV Aids.

Professor Philippe HARTEMANN

Let us take the example of poisoned Josacine – the example is striking because the television newsreader asked everybody to hand over their Josacine bottles because of the suspicion about one single bottle. Now, neither doctors nor pharmacists were aware of any campaign to recall the product. That led to complete chaos, because within minutes of the news people began to run to their doctors, who had not necessarily been watching the news. The information ought to have been organised better.

Gilles SCHNEIDER

Is there any international information system?

Professor Philippe HARTEMANN

There are three types of international exchange: institutional exchange, which takes some time, networks organised increasingly around bodies such as the Food Safety Agency of the Public Health Institute, which cooperate internationally, and lastly individual exchange, which operates even better, as it allows for direct and immediate contact through the knowledge acquired in a given country. We must improve these operating modes so that institutional exchange can take place at least as fast as individual exchange.

Gilles SCHNEIDER

Dr Harvey, is the circulation of information better within the United Kingdom and in exchange with other countries?

Dr Philip W. HARVEY

In the United Kingdom as in other parts of the world, we have agencies that play an alerting role. Each scientist also has the right to publish recommendations. For example, I publish articles, which may or may not be controversial. That is an exchange of information. The only thing that matters is that the information is correct. Currently, there is a lot of talk about infectious diseases. When tests are valid and reproducible, information must be exchanged and the public agencies must communicate with each other.

Gilles SCHNEIDER

Do you ever work with Professor Hartemann?

Dr Philip W. HARVEY

We have never had the opportunity of working together.

Professor Philippe HARTEMANN

That depends on the subject. For instance, there is a British colleague here today, with whom I correspond on a regular basis.

Dr Marc SEGUINOT

The informational side of things is very important. As I said yesterday in workshop 1, in the new framework public health programme that is currently being put in place, that is a point on which special emphasis will be laid. There are many networks between countries in the European Union.

Unfortunately, there is sometimes a lack of coordination on the European level. We will therefore put in place coordination systems to analyse information on the Community level and distribute it to national networks after the analysis.

Gilles SCHNEIDER

Does that reassure you, Dr Penalba?

Dr Christian PENALBA

We must wait and see the practical application. For example, I am presently trying to circulate a brochure about leptospirosis prepared by a student working on a doctorate in pharmacy in my region. But it is not easy to get subsidies to prepare the document and circulation also has its difficulties. If you are not within the framework of official prevention programmes, you have trouble developing such preventive measures.

Professor Philippe HARTEMANN

Given that individual exchange still occupies an important place in international relations, language is one of the barriers, as not many of us are linguists.

Besides, and this is a way of working around the language barrier, there is the Internet, which has benefits and also major drawbacks, particularly for subjects such as new diseases and pollutants.

Professor Jean-Marie PELT

Yesterday and today, several references were made to the preventive principle as opposed to the precautionary principle. Could you define the preventive principle, which not as well known?

Professor Philippe HARTEMANN

The preventive principle consists in using scientific knowledge to assess risks and determine a regulatory framework (e.g. the maximum emission value of a pollutant) on the basis of exposure scenarios, so that an acceptable risk level can be fixed by policy-makers.

The risk level may be zero, if that is possible, or 10^{-6} , i.e. one case per million inhabitants exposed. But when we do not have the requisite scientific knowledge, policy-makers often apply the precautionary principle, which consists in banning the exposure to the relevant product altogether.

Gilles SCHNEIDER

On what particular substances are you working currently at the Atomic Energy Commission?

Dr Florence MÉNÉTRIER

The substances are many. Currently, the nuclear toxicology programme is developing particularly. It deals with the chemical elements used in research, and also at all stages of the nuclear industry. Personally, I am working particularly on the radionuclide elements present in waste, because of their possible migration into the biosphere. Some of the elements of primary interest to us are uranium, which is present in the largest quantities, plutonium, which plays a known role and also iodine, selenium and cadmium.

Gilles SCHNEIDER

Do you believe that the people are as concerned about water pollution as they are about air pollution or health problems relating to food?

Professor Jean-Marie PELT

In developed countries and particularly in France, water pollution is not really taken into consideration, because the damage that is directly due to water pollution is not obvious. As a result, the public do not see the threat.

In general, it would appear that the people are most concerned about food problems, which have been publicised excessively by the media, and followed by air pollution problems, which also receive much media attention. Water problems only come third, as they are less known. Maybe the people also believe that they only affect poor countries.

Gilles SCHNEIDER

Is not one of the difficulties in educating the public and raising awareness the fact that when a pollution problem occurs, fingers are immediately pointed at a particular category, such as the petroleum industry or farmers?

Dr Marc SEGUINOT

I believe that we have made great progress in that field. Civic sense plays a very important part in pollution control and prevention. The policy orientations that have now been defined on the national and European level would not have existed if the citizens had not felt concerned in their day-to-day life.

I am optimistic about the coming decade, even if water does not really appear to be a priority. That is also the case with many pollutants that produce long-term effects, where it is not easy to isolate one or two factors of causality.

Professor Philippe HARTEMANN

What is serious is that we have to work all the time in a crisis situation, particularly because of the media. Public awareness should be such that we can work for the long term, and not just the immediate future. The debate would become more dispassionate.

Gilles SCHNEIDER

But are we taking steps that will enable us to go that way?

Professor Philippe HARTEMANN

I believe that the answer is yes, both in this country and internationally.

Dr Philip W. HARVEY

I think that people tend to take water for granted. The population is generally more aware of food risks. We must react to circumstances. Science must endeavour to foresee danger. Of course, when danger does occur, we must react.

Dr Christian PENALBA

When I question my patients, it appears that the risk relating to water in a professional context is clearly identified and recognised. But that does not apply to personal activities – the perception of the risk disappears and the risk is ignored altogether.

Dr Florence MÉNÉTRIER

I would like to add that the field of radiation is a particular one – we tend to forget that radiation is part of natural life, because of the uranium present in the soil, for example.

Some incidents appear very serious, for instance that of iodine 131. Yet, that element is degraded over a very short period, which seriously limits the danger and even makes it harmless. The subject was blown up by the media, even though the health risk is not very high.

A member of the audience**André LECLOUX, European Chemical Industry Confederation**

I would like to clear up two confusions.

The word pollution is meant here in the wider sense, but the examples are always taken from chemicals. Yet, it is not chemicals that are leading to millions of deaths in Third World countries.

Besides, people often tend to mix up hypotheses and certainties, particularly when it comes to endocrine disruptors. As stated before, studies are under way to try to demonstrate the causal relationship, but the way the subject is presented, you would think that the relationship is already proven.

Gilles SCHNEIDER

That reaction is quite typical. As soon as a certain industry is mentioned, even in a hypothesis, it immediately has a defensive reaction, instead of thinking of solutions that could be put in place. But we have not attacked any field of business. We are simply trying to ask the right questions.

Professor Jean-Marie PELT

It is true that that is how things are, and how they always have been. Having said that, nobody has really forgotten that the damage that is not due to the chemicals industry is quantitatively much larger on the global scale. However, chemicals do pose a specific problem and we must try to produce safe substances.

In respect of endocrine disruptors, I was told of an experiment yesterday, involving problems found in peregrine falcons, similar to those I had touched upon for other species. The problems disappeared when DDT disappeared, and the correlation was clearly established. But I repeat that we are confronted by a lack of scientific certainty, which calls for considerable efforts in the field for future generations.

A member of the audience**Anne-Marie PREISLER, Family and Rural Associations**

I represent users and consumers. Why is it not possible to impose a procedure requiring the approval of all new pollutants before they are released in the market, like the system in place for drugs? That would be a good preventive measure, because we do not know all the effects of these substances on health and the environment.

Professor Philippe HARTEMANN

You have made a good point, but we must speak of products and not pollutants. Basically, the question has been widely addressed and a decision has almost been made nationally to require the systematic completion of such studies before products are released in the market.

Dr Marc SEGUINOT

In an ideal world, industry, consumers and policy-makers would move forward together. It is in all our interests to try to bring our points of view closer, because for a manufacturer, spreading DDT or a safe product does not make much difference – the manufacturer has sold its product, and that is what counts.

We are currently toughening up the regulations. The Commission has created a Chemicals Bureau, which is located in Ispra, Italy. We have also tightened up the standards relating to the tonnage from which more information will be needed from manufacturers. But these problems are very complex and the Community alone cannot solve all of them. We needed the cooperation of the USA and are happy to say that we have got it. That is why I am optimistic about the progress we can make in coming years.

Gilles SCHNEIDER

Here is a question we received through the Internet: must waterborne contamination be included in the toxicity tests for new products released in the market?

June 1 2001 – Conference Centre – Metz – Moselle

Debate: let us protect water so as to not have to prohibit its use

Professor Philippe Hartemann

We are going in that direction, because it is a legitimate demand both nationally and on the European level.

A member of the audience

Josée CAMBOU, France Nature Environnement

Many people call us to ask us questions about water and health. Very often, these people are women with young children, who are more concerned about their children than about themselves. They are legitimately anxious when they hear that water contains heavy metals, pesticides, radionuclides, residues of hormones and drugs etc.

Now, in public debates about the subject, you never speak of more than one product at a time. But the social demand rests on the day-to-day reality, i.e. in this case, the fact that we are exposed to all these products at the same time! We expect answers from that angle.

Dr Philip HARVEY

I do not think that the water agencies fail to take account of these concerns. In the United Kingdom, the water treatment process makes it possible to eliminate most of the waste you have referred to. As I said earlier, science is progressing. Today, the question is whether we want a technology society or not. We cannot eradicate each and every type of risk. But we must not forget that chemicals also bring benefits.

Professor Philippe HARTEMANN

Ms Cambou is right – currently, we set maximum permissible concentration values for each substance taken in isolation, because that is the only way available to us. But the levels we fix are very low, precisely in view of the possibility of the additive effect of several elements. But we are still in uncharted territory and we have opted for precaution by fixing very low maximum exposure limits.

A member of the audience

Christophe MOULIN, EDF

It is very important to include economics in risk management, particularly when it comes to taking account of external costs, i.e. the health and environmental impact in economic reasoning. Of course, that approach does not replace risk assessment, but supplements it. But the fields of research of these approaches, which are presently being studied, must add a dimension to our reasoning.

Besides, EDF is an industrial group that is growing significantly in other countries, particularly in Western Europe and in Eastern Europe as well. We approach water and health issues on the national level as well as in each country, where the levels of development are not always the same, in respect of both health and the environment. I understand that a European policy is being prepared in the field of environmental responsibility, which will be supported in particular by a white paper.

Could you tell us something more about that, particularly what are the responsibilities of industry as regards a new pollutant which happens to have a major impact that was not unknown before? What is the place left to industry for risk management and how will the question be approached from the financial standpoint?

Dr Marc SEGUINOT

It is true that the approach to the question of including costs has changed. But the approach you describe is closer to that used in the USA. In Europe, we have not yet adopted such a system.

As regards the white paper on environmental responsibility, I cannot tell you very much about it. But I think that it is likely that we will have to provide for accelerated revision processes for the legislation, in order to make it possible to change the limits on the basis of the acquisition of new scientific knowledge.

A member of the audience

Benoît JAMES, Health Engineer, Moselle Health and Social Affairs Authority

Mr Hartemann and Mr Seguinot, you spoke of the preventive and precautionary principles, and stressed the importance of openness. Professor Hartemann also referred to the idea of acceptable risk. Is that idea of the acceptability of risk perceived and understood by the population?

Gilles Schneider

We will try to answer that question when we approach the issue of risk, in the third part of this meeting.

A member of the audience

Jean-Claude TOURNAYRE, Union of Plant Protection Industries

The products released by our companies are the result of ten or twelve years of preliminary research. In particular, the research relates to the calculation of the potential risk of these products for air, surface water and ground water.

It is true that the question of endocrine disruptors is in the news. We are paying great attention to it. But current scientific knowledge is not enough to conduct tests with valid results. However, we do wish to provide answers to that question, as soon as possible.



Round table : The expectations of citizens

Participants :

Daniel BOULNOIS, Director of the Rhine-Meuse Water Agency

Didier BICCHI, Canadian Department of the Environment, Municipal Policy Department, Water Management (Quebec)

Jean DUCHEMIN, Directorate General for the Environment - European Commission, (Brussels)

Claude GAILLARD, Vice-President of the National Assembly, President of the Rhine-Meuse Basin Committee

Jean-Pierre PEINOIT, President of the National Consumers' Institute (INC)

Jacques ANTOINE, Director of CESEM Opinion

Guy SAUVAGE, Chairman of the Water Board of Vraine and Xaintois in the Vosges department, Lorraine

David STANNERS, Director of the Evaluation and Survey Programme, European Environment Agency

Roger AERTGEERTS, Director of the Public Health department of the European Office of the World Health Organisation, European Environment and Health Centre (Rome, Italy)

Thomas JOLY, Director of the French Office for the Foundation for Environment Education in Europe.

I. Report of the workshop “The expectations of citizens”

Daniel BOULNOIS

1. Introduction

Thirteen papers were read at the workshop, by a variety of speakers ranging from elected officials, representatives of consumers' associations and conservationists, industry professionals and international organisations.

2. Findings

Three remarks may be made:

- the diversity of concerns about the subject, reflected by the diversity of the participants;
- the fairly high level of knowledge of the population;
- the good quality of tap water in this country, in spite of the increasing trend to consume bottled water.

3. Highlights of the workshop

a. Information

The citizens want more information. They want information that is reliable, provided by an independent source and understandable, which calls for major pedagogical efforts in order to speak a language other than the technical jargon we tend to use. Citizens also want regular information. The case of rural municipalities was mentioned, in that such regular information about drinking water is often missing.

The understanding of situations and the appreciation of risks by citizens require a high level of education, which can be provided by continuous information away from crisis situations. They also require the implementation of awareness measures, which ought to be directed to citizens from their youngest age.

Lastly, information ought to be more focussed towards health professionals, particularly family doctors, who are in continuous contact with the people. Bridges must be put in place, more systematically and with more coordination than is the case today.

b. Cost

Citizens are ready to pay for water, but not any price. In that respect, there is the question of the costs to be included in the price of water – for instance, must the price of water include all the preventive measures taken? At present, it often only includes investment and operating costs of sewage collection, treatment and distribution.

One corollary question was raised – where will the requirements of standards end? These often make it necessary to make more investment and incur new expenses, which will soon reach their limit in many cases. Lastly, citizens sometimes wonder if the prices are justified by the level of service provided by water distributors. As a result, they want more monitoring of the practices of distributors and want more openness in the field.

c. Pollution control

While it was recognised that the regulatory framework for pollution control is considerable, doubts were expressed as to the determination with which it is enforced. But pollution issues call into question the very consistency of public policy – in particular, farming subsidies were a major target in this respect, as large quantities of aid are given to some types of farming that are known to have an adverse effect on the environment.

These findings have led to a lack of confidence in the government, which must take strong action to meet the expectations of citizens.

II. Discussion

Professor Jean-Marie PELT

In the first workshop, we probably underestimated the strong demand of citizens, which turned up in workshop 2 in general, and in respect of the price of water in particular. From what Mr Boulnois says, I have the feeling that people don't just want to know what is served on their plates but also what is served in their glasses.

Gilles SCHNEIDER

Mr Savage, what are the expectations of the citizens who come to you in your department?

Guy SAUVAGE

Three questions keep coming back in the concerns of the people:

- the quality of the service, which must particularly guarantee a continuous supply,
- the price of water, which is a very important question for consumers,
- a sometimes disarming appreciation of the quality of water, mixing up taste and safety, for instance through the reproach that the water is not good because it smells of chlorine!

Gilles SCHNEIDER

How do you provide the interface for information in order to meet the consumers' thirst for information?

Guy SAUVAGE

We send accurate documents, prepared in cooperation with the Health and Social Security Authority, about the tests completed in the municipalities and their results. These documents are enclosed with the water bills. We also supply information independently. But above all, we must take care to supply information that is accessible to consumers, otherwise it leads to unjustified reactions.

Gilles SCHNEIDER

Mr Gaillard, as a politician and the Vice-President of the National Assembly, what would you like to say about these findings?

Claude GAILLARD

At a time when the minimum public service is in the news, everybody agrees that it is indispensable for water to be provided continuously, twenty-four hours a day. Besides, everybody is willing to pay

for water, but not any price. Today, people pay 17 to 20 francs per cubic metre of water. If you think of it, it is not very much, for 1000 litres of water. But the change in the price has given the feeling that all of a sudden, water has become very expensive.

Also, there are wide disparities across the country, because the need for treatment is not the same. It depends on the region and the quality of the water available. As regards the information which is supplied to consumers, I believe we can rely on the intelligence of the public, particularly when we explain the reasons for the price of water, which will probably continue to rise. Lastly, I believe that the importance and specificities of water are often more relevant on the regional level. That is why the approach to the system must not necessarily be national.

Gilles SCHNEIDER

Mr Aertgeerts, you have a global view of the water situation. Do you often hear what Mr Savage and Mr Gaillard have just told us?

Roger AERTGEERTS

From the point of view of the WHO, the region "Europe" includes Eastern Europe and particularly the countries of the former Soviet Union. We have to face the information problems you speak about on a daily basis.

The problem of the reliability of the information available on the Internet was mentioned. It is true that the information you can find on the Internet is sometimes reliable, but not always. But as a participant said with some vigour, consumers are not stupid. It is obvious that the information posted on the websites of the United Nations or the European Union ought to be considered to more trustworthy than that posted on the website of a student in some country.

Gilles SCHNEIDER

However, the expectations are not the same in all countries in respect of pollution. In India, for instance, the aim of a lorry is to carry goods from point A to point B. Whether or not the lorry is clean is a luxury. Cleanliness is certainly not a priority in some countries.

Does that not affect global decisions, particularly at the WHO, by lowering the standards?

Roger AERTGEERTS

I do not think so. I believe that the problems and difficulties of the third world are underestimated. True, in industrial countries like this one, bacterial and microbiological testing is conducted and new problems are now being addressed, particularly chemical ones.

But that does not mean that third world countries are still in the microbiological stage and are ignoring other problems. In some countries in which I work, in central Asia, the rate of pesticides is

25 times greater than in the former Soviet Union. The problems therefore really have another dimension.

Gilles SCHNEIDER

Do you work with other global agencies?

Roger AERTGEERTS

Yes, we are in touch with almost all the agencies working on the international level. We work with UNICEF, the ILO in respect of occupational epidemiology, and are in close contact with the European Environment Agency, with whom we are involved in many common projects.

Gilles SCHNEIDER

Mr Stanners, is there a European perception of water and health problems, which is not merely the sum of national concerns?

David STANNERS

One of the roles of the agency is to provide a common approach. That need does not apply only to the question of water, but to a number of other fields as well. We must therefore contribute precisely to the approximation of points of view. That is what we are trying to do.

Gilles SCHNEIDER

Are there any common expectations of Europeans, say in terms of price or information?

David STANNERS

The same types of problem often occur in most European countries, even though there are small differences in the issue of the water supply, for example.

Gilles SCHNEIDER

Mr Antoine, your job is precisely to observe these questions. What are the cultural and social trends in Europe in respect of environmental problems?

Jacques ANTOINE

One major aspect of the current situation is the lack of confidence in science in general, as something that can contribute to human progress. That can be seen particularly by the growth of the legal

approach to issues, which are increasingly being taken before the courts. Fortunately, the field of medical research is not as affected as others in this respect.

The public are not really worried about the quality of tap water and its effects on health. But a survey by IDSL has shown by studying approximately twenty risks that a distinction is being made between tap water and the concern for the impact of environmental problems on the quality of water. But those are long-term concerns, which are close to the logic of sustainable development.

Gilles SCHNEIDER

Are citizens ready to act, to take precautions or preventive action, for example? Are the citizens sufficiently mature?

Jacques ANTOINE

The citizens are mature inasmuch as their personal health is believed to be affected. Now that is not really so with water, at least not more than with other risks. But they are concerned about the price of water and water management. From that point of view, associations of consumers take action in the field and are taking an increasing number of local initiatives to perform audits and provide information to other users.

One of the problems lies in the fact that in the field of water, the responsible authorities are not known and not well identified. Often, people discover the existence of water agencies only when they read their water bills. The players involved in the business of water seem distant, which is another difficulty.

Jean-Pierre PEINOIT

We spoke earlier of the behaviour of consumers. Water saving is often mentioned. Is there a real incentive to save water, from the consumers' point of view? We believe that that is not so, because of the way in which the contracts are defined – often, your water bill increases if you lower consumption! That has been found in previous years because of the need to amortise the cost of equipment and management.

Besides, in terms of the quality of water, the confusion that was pointed out between the taste and safety of water is no surprise. A study we published on March 15th shows that the first criterion mentioned for all food is taste. There is no reason why things should be different for water.

Lastly, the behaviour in respect of price is often very different from country to country within Europe, because in some Union states such as Austria, water is not charged on the basis of consumption. But we must remember that the price of water has doubled in recent years in this country. That represents an amount of about FF. 2000 to 2500 per year, which is obviously not negligible for families with small incomes.

Gilles SCHNEIDER

What is the share of health in the price of water?

Jean-Pierre PEINOIT

I do not think that the consumers are aware of the fact their water bills include health protection components, especially since the bills are often made up of some twenty items, which can be quite confusing, given all parties involved (municipality, water board, water agency, inland waterways etc).

David STANNERS

It is true that if you reduce the use of water, its price rises. That is a crucial point in the logic of sustainable development – we must move from the notion of product to the notion of service. If water treatment is a cost for a company supplying a service, the company would be much more interested in making savings.

Didier BICCHI

In Quebec, the price of water is not a problem, because it is included in our land tax and is therefore not visible. We are great consumers of water – we consume an average of 450 litres of water per day per capita, for example because of swimming pools, car washing and lawn watering. We are far too liberal in our use of water, and it is time to realise that this is a real problem, not because the resource is rare (we have close to 3% of the world's resources of sweet water and 8% when you add those of Canada). But we must bring our system in line with the principle of sustainable development.

It is important to inform the population correctly by adapting our discourse to the reality of citizens. We had a problem where underground water was contaminated by toxic products. On that occasion, we really wanted to inform the citizens as well as possible. We brought together public health representatives, representatives from the Department of the Environment and elected officials, and tried to popularise the issue. But at the end of the meeting a lady asked us if she could still cook carrots in the water. That showed us the effort we must make to teach people and respond to their day-to-day concerns.

Besides, if we want to rehabilitate the public service of providing drinking water by restoring credibility, that would require a strict application of the regulations by elected personnel and operators, even if legal action is required if the results are not up to the mark. The credibility of the Department of the Environment has been very low in recent years, probably because of its inability to take direct measures against municipalities. We are slowly restoring that credibility with the help of clear and rigorous information procedures requiring conformity to standards as soon as possible if that is not the case, and continuous publication of the results, before a review is conducted. These principles are summarised in three rules:

- responsibility of managers

- management by results
- action in view of the results.

Lastly, I believe we must qualify the idea of risk.

Gilles SCHNEIDER

Your system is an example of great openness and at the same time, you take disciplinary action when violations are found. Can we follow that example in France, Mr Gaillard?

Claude GAILLARD

It is not that simple. First of all, we must distinguish the case of bodies under the control of local government, which exist in many fields. Secondly, we must be able to take stronger legal action if the requirements of standards are not met and we must decide between the objectives of standards and those of consumers, which are not necessarily compatible.

As regards responsibility, the local authority is always liable, even when it uses the services of a private company. That liability is heightened by the fact that mayors are the elected officials in France with the widest powers. As a result, in order to make for more democracy at that level, I think it would be good to set up checks and balances. Likewise, it would be useful to develop occasions for exchange with the population, in order to have a dispassionate debate.

As for nitrates, we saw yesterday how a slight deviation from the standards applicable to nitrates does not necessarily have a great effect on health. That is why we must be careful about the requirements we fix and the objectives we pursue – is it more serious for our health if a standard is exceeded slightly or if we let the North Sea die?

Gilles SCHNEIDER

Mr Duchemin, what is the action of the European Commission and what do you think of what Mr Bicchi has been telling us?

Jean DUCHEMIN

Our position on the European level enables us to make comparisons. In particular, it is important to put contamination factors in their rightful place instead of focussing attention on water or air from time to time, which is the danger of such debates. Lastly, the greatest risk factors for humans lie in their behaviour, principally smoking. Smoking probably has a very large share in the hazards threatening people, as compared to the carcinogens or endocrine disruptors present in water.

Drug cocktails, the effects of radiation, cosmetics and DIY products are other examples of channels of contamination that are related to our behaviour and which are a much greater risk than water. A study we conducted following the dioxin crisis has also shown the very limited role of water in PCB and dioxin contamination as compared to solid food, particularly seafood.

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to not have to prohibit its use

The people are certainly capable of understanding such information, which ought to reassure them about the quality of water. It must also be specified that bottled water is not absolutely pure, because there are pollutants in rainwater, which end up in spring water. There is no such thing as 100% safety when it comes to bottled water, as with tap water. We must become aware of that fact, despite the continuous TV advertisements for bottled water. Generally speaking, I think information should be focused on two chief targets – mothers and schoolchildren. The water agencies have organised “water days” and that in my view is an excellent initiative. For the general public, it is important to use the media to put across a few simple messages that bring out the relativity of water-related risks as compared to human behaviour and other environmental risks.

Gilles SCHNEIDER

What is being done to educate the young, for instance? Are they more aware than the older members of society?

Thomas JOLY

This conference would never have been held ten or fifteen years ago, when the situation was one of contestation. After that came an education and awareness phase, followed by a period marked by a more demanding attitude. Today, we are much more aware of environmental problems. Now we must focus our efforts on educating people in sustainable development. That is the path we have taken.

As an example, look at the environmental awareness of all Europeans as it can be seen in their daily behaviour, particularly when they buy things. That is the main act with which the citizens participate in the collective effort. Today, people are increasingly buying products and services that are environmentally friendly. We must encourage that attitude, by keeping information simple. Often, information is complex, but consumers like to be able to identify simple and independent marks. The Blue Flag campaign we are developing is helping to respond to that expectation. These realities are also gaining importance from the economic standpoint.

Gilles SCHNEIDER

Do you have the resources to develop such action to continue on the path of education?

Thomas JOLY

We never have enough resources, but they are increasing. Today, the work is being done increasingly through the French educational system and associations, which are being given more resources for these messages.

Jean-Pierre PEINOIT

Information must be simple, accessible and controllable. But above all, the consumers must be reassured and panic must be avoided. The report from the first workshop, for example, which raised the question of the possibility of water being contaminated by BSE prions, is a true time bomb if no clear response is given to that hypothesis.

As regards consultation, consumers' associations are opinion-makers that enjoy a high level of trust on the part of citizens. But consultation, which is provided by the law both nationally and locally through the advisory commissions of local public services, still does not have the resources required to be viable. We hope that these organisations will develop around approved associations, i.e. associations recognised by the government.

But when it comes to funding, we get the feeling that we are really not being taken seriously! We are told that we enjoy the trust of citizens and are asked to do more and more for educating and supporting the consumers, or even performing expert surveys. But we have very scarce resources, locally and nationally. The funding of consumers' associations was FF. 70 million in 1992 and only FF. 50 million in 2001! The same goes for associations working in the field of the environment. At a time when we are working on citizenship and the role of associations, that should be a major concern.

Jean DUCHEMIN

About the possibility of the contamination of water by BSE prions, I believe the media must also become more responsible. At the peak of the mad cow crisis, for instance, very clear information was issued by the Director of the Institute of Public Health about the ban on the use of natural gut as sausage casing. But that information was not taken up by the media and much incorrect and incomplete information was bandied about in the following days.

The media are therefore responsible for the choice of information they supply and the people they turn to for their opinion. Journalists should look less for scoops and get the opinion of competent people who can give clear explanations of problems and understand complex situations.

Gilles SCHNEIDER

However, I can tell you that a true scoop is extremely rare, even if the term is used very often.

A member of the audience**Jacques MUDRY, Professor of hydrogeology at the University of Franche-Comté**

In respect of what Mr Gaillard said and the cost of water – the supply of drinking water is a public service. Consequently, I do not think it is normal for someone who lives downstream to pay more than someone living upstream for a decent water supply. The cost of producing drinking water should be distributed over the users, because the water downstream is polluted by the people upstream.

Besides, must the user pay the cost of production or the cost of managing the resources? I personally am concerned by the new decrees that have been published to amend the decrees of November 3 1998 relating to the conformity of water to standards. Mr Duchemin told us that the standard will now be set by the quality of tap water. That bothers me, because quality also includes the management of catchment areas and therefore the organisation and planning of these areas in a way as to protect them, considering the vulnerability of the water resources.

If you want to be able to manage the catchment points upstream correctly, you must have complete and regular analyses about the resources in order to protect them, particularly in the most sensitive areas. That is why I think we are going backwards by only being concerned about the quality of tap water.

Claude GAILLARD

It is true that we have to pay for the pollution of watercourses. But the role of water agencies and water planning and management plans is precisely to ensure consistency in the catchment basin, taking into consideration the responsibility of the people upstream towards those downstream. That approach is developing and should therefore be a reason for optimism.

As regards storms and pollution, today, some towns and cities treat rainwater by creating storm-water tanks, which encourage pollution control. Besides, the price of water includes treatment, but that is not the case for bottled water. We must compare what is comparable.

Jean DUCHEMIN

The decrees are not a step backwards, because they only apply the new drinking water directive of 1998, which emphasises the quality of tap water. That has led to the need to control the risks relating to the resources, the treatment system and the standards of outdoor and indoor piping. After that comes the distribution of responsibility in order to identify the possible liabilities in the event of any degradation in the quality of water.

Further, the framework directive and the underground water directive, which will be published soon, will provide for closer and more complete monitoring of the resources. The new feature is simply that you start from the tap and then go up the system, rather than observing water at the outlet of treatment works as was the case previously.

Gilles SCHNEIDER

Here is a question we got by e-mail: water distributors make sure that clean drinking water is supplied to every citizen by means of daily tests and regulatory inspections. However, there is an increasing number of devices such as softeners in the market, which change the composition of the water consumed by the user. The high polyphosphate, sodium and other contents and the bacteriological risk posed by such devices is never mentioned. Why is there no regulatory control over the installation of these devices and why are they never supplied with a warning of the possible risks?

Jean-Pierre PEINOIT

In principle, the fact that such products are marketed ought to be a guarantee in itself. Otherwise, I think the Consumer Protection authorities would take action on the charge of misleading advertising and would have the products removed from the market.

In the early 80s, the problem appeared with water purifiers, which were at least as contaminating as they were useless. We are quite mystified by this debate, the more so since it raises legal questions about the techniques used to sell these products. They are sold by door-to-door salespeople, who sometimes support their claims with the help of studies conducted by the health authorities. The situation is therefore quite problematic from our point of view.

Jean DUCHEMIN

When I used to work with the health authorities, we published articles on several occasions to inform the public about the fact that softeners can be useful if the water is very hard. But even in that case, it is better to use hard water in the kitchen, because after all, softening is useful with hot water only.

In general, it is true that these devices can be a source of mould if they are not correctly maintained. That leads to a new risk, because changing parts is quite expensive.

Professor Philippe HARTEMANN

I would like to stress that our role ends when the water enters the homes of consumers. These products are intended for individual use and are therefore not subject to authorisation by the government. On the other hand, if any harmful effect can be demonstrated, the consumer safety commission can take action to have the product withdrawn from the market. That has led to a debate, because some people want an official quality label for such products. To date however, that does not seem feasible.

Member of the audience**G rard BORVON, Loire-Brittany Basin Committee**

We were told at the start of the debate that consumers were satisfied with the quality of water. But that is apparently not true – there is panic in the minds of consumers, who are showing their distrust by turning to such devices.

In Brittany, reliable studies published regularly in the media show that 80% of the people have ceased to drink tap water, or even use it for cooking. We must therefore restore trust, which will probably take much longer than restoring the quality of tap water. I do not believe that it is of any use to say that there are more serious pollutants, because the quality of water is perceived as an indicator of the quality of life in general. This is therefore going to be a hard fight.

Jean-Marie PELT

The fact that the media never talk of tap water, the praises of which are never sung on television like those of bottled water, is certainly a problem, as people seem poorly informed about water problems. But their fears are not totally justified when it comes to water.

An advertising campaign should be devised by the local authorities to praise the quality of tap water on television. In no event must we come to the conclusion that tap water should be abandoned for mineral water. That would be a serious failure in the field of environment.

Didier BICCHI

In Quebec, there is also a problem of confidence. But is aimed at public institutions and not the quality of water. We must certainly promote emulation by demonstrating the quality of our water and use coercion, so as to restore the credibility of institutions on all levels.

Jean DUCHEMIN

Brittany is certainly an extreme case, particularly because of the panic that is maintained there about nitrates. The psychological impact is quite real. That is why we must show that problems are relative, as the standards applicable to water are extremely stringent. That is particularly due to the fact that our testing ability is much greater with water than it is with food, in general. As a result, we tolerate much lower levels of pollution in water than those we tolerate in food, even as the life expectancy has increased by twenty years in half a century.

Gilles SCHNEIDER

Mr Aertgeerts, do these questions occur everywhere in the world in the same terms?

Roger AERTGEERTS

There is the question of food safety, which particularly includes water but is not limited to water. For instance, in Eastern Europe, there is also the problem of the existence of alternatives to the consumption of the available resources. Often, there is no alternative. That puts a new complexion on problems.

Jean-Pierre PEINOIT

What Mr Borvon said raises the question of protecting the resources. The role of the government is crucial in that respect. But the means available to the "water police" are still not suitable. As a result, the water is not up to the mark in many regions. We must make use of the fear of being caught, otherwise these problems will continue.

Houda YAHIA, CLVC Departmental Union (consumers' association)

Citizens must be informed, but they must also be made responsible. They can influence the price of water and must be aware that they should save and not waste the water supplied to them. That can be reflected in simple and concrete acts. We are trying to contribute to that educative effort. But our resources are very limited.

Besides, there has been a lot of talk of water bills, but one forgets that tenants do not get to see the Health Authority records and have no information about the quality of the water they consume. In Mulhouse, we have set up a system to inform people in council housing about how to save water. That is the type of action we would like to see developing.

Jean DUCHEMIN

The French Health and Social Affairs Authority has tried to be objective about the information it has and distributes to the public. That is something we must recognise, because it is certainly a plus as compared to the situation prevalent in Italy or in Spain. As we saw yesterday, the large number of players in those countries makes information more difficult to obtain.

Roger AERTGEERTS

That concern for saving water and fighting waste is very important in the action of the WHO, in developing countries. Educational measures are effective providing they are supported by the producers and distributors of water. When there is a threat of a cut in the supply, you cannot easily ask the population to limit its consumption.

Jacques ANTOINE

The uniform price of water is an underlying theme in our discussion. I believe that it is not likely to become a reality. But the idea makes it possible to have a relevant approach to the many dimensions of the basic problem on the local level, to the composition of the price of water and the reasons for any differences that could be found in the field.

Claude GAILLARD

One of the problems relating to water is the large share of fixed costs as compared to variable costs. That is reflected by the smoothing of the price of water over time. As a result, water saving is not immediately noticeable in the water bill. But that does not mean we must discourage people from saving the resources!



Is there a risk?

Participants :

François BARTHÉLÉMY, Chairman of the Board of Directors of the Rhine-Meuse Water Agency

Josée CAMBOU, National Secretary of the association France Nature Environnement

Christon J. HURST, Environment Protection Agency, Cincinnati, Ohio, USA

Martin EXNER, Institute of Public Health, Bonn (Germany)

Dominique TRICARD, Manager of the Water-Related Risk Assessment Unit, French Food Safety Agency

I. Report of the workshop

François BARTHÉLÉMY

1. The idea of risk

The participants attempted to define risk. Risk is the probability that an adverse effect for the environment or health will occur. That is why the harmful agent, exposure and effects on health that do not depend on exposure alone must be distinguished while assessing that probability of danger.

2. Methods to approach risk

a. Epidemiology studies

Epidemiology studies can only be conducted after the event. They consist in monitoring the condition of the population to find symptoms related to the phenomena studied. In addition to their high cost, they also have the drawback of sometimes leaving uncertainty about the precise origin of the symptoms observed. Furthermore, very limited phenomena that only lead to a few isolated incidents are not detected by such studies.

b. Risk assessment

Risk assessment can be conducted before the event. But that implies having the test results of the toxicity of the products studied as a minimum. After that, transfer models are used to calculate the contamination of the environment, the transfer scenarios and the exposure of those concerned, in order to finally come to the assessment of the probable effects on health.

These methods are widely used, but they are still limited by many uncertainties. First of all, toxicity tests are conducted on animals and the transposition of the results to humans raises major difficulties. Besides, they require the use of many models, each of which is characterised by a certain degree of uncertainty.

These studies can be supplemented by economic studies relating to the economic impact of pollution and the cost of the policies to be implemented. All these tools are indispensable for making enlightened decisions. But a very large margin of uncertainty persists. Above all, the question of the choice and the decision will continue to be posed.

3. The role of governments

Governments have ever more effective instruments, particularly in the form of technical agencies like the French Food Safety Agency, which has the task of supplying the authorities with the most advanced technical information for making decisions.

4. Industry

Industry has not been inactive either – manufacturers now assess the products they market and the substances they discharge.

5. Conclusion

While considerable progress has been made in the knowledge of products known since a long time, emerging products are generating new concerns. Risk assessment methods must be used and the scientific bases on which they are founded must be reinforced in order to make them more reliable. Ultimately however, the decision will be a political decision. It must also be supported by consultation with all the parties involved, both technically and economically, and with the population and its elected representatives.

II. Discussion

Gilles SCHNEIDER

What would you say about those conclusions, Jean-Marie Pelt?

Jean-Marie PELT

France is certainly not the best and most advanced country in this respect. In the fields of epidemiology, toxicology and ecotoxicology, we have always had to struggle to keep pace with our English-speaking counterparts, particularly the British. For instance, their organisation for the assessment of the toxicological effect of substances is more advanced than ours.

We have had to face difficulties, one of which must be mentioned here – in France, biology is often limited to molecular biology, which is predominant in this country. We must find more research resources for toxicology and epidemiology, as that is the only way in which we can take account of the actual importance of risks. When the European Union suggested the initiation of study programmes for substances suspected of carrying risks, France came forward with only two substances. That is an illustration of what I said. We still have to make considerable efforts.

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Debate: let us protect water so as to not have to prohibit its use

We have a special defect in this respect – we often study one field at a time. Today, we are very interested in the “scientific highways”, which are currently marked by genetics. For my part, I believe that we must improve our performance in the fields that also have a direct relevance to health such as those mentioned here.

Gilles SCHNEIDER

Mr Tricard, what is your point of view?

Dominique TRICARD

In this country, the situation varies widely from region to region when it comes to the water supply. 60% of the 30,000 water distribution units that exist in France serve less than 500 inhabitants. The problems of small municipalities and large cities often have nothing in common. That is why a methodology must be used which can deal with comparable situations. The workshop addressed risk analysis based on risk assessment and risk management, and the need for communication, which must cover the entire process.

Gilles SCHNEIDER

Can communication play a major role in warning people or preventing problems, and is this role insufficiently exploited?

Dominique TRICARD

Yes indeed, we could for example initiate communication and discussion right from the early phases of risk assessment, which would have the benefit of making the various parties more aware. In that way, when certain decisions are made on the national or European level, bringing the representatives of consumers’ associations and industry representatives together around the table can sometimes help to anticipate, several years in advance, technological developments that will have a real impact on the implementation of preparation action. All the stakeholders must be organised and mobilised continuously. Communication is not a gimmick – it must be continuous and must be done in association with all the players.

Gilles SCHNEIDER

If, for instance, a user’s water supply is cut off, is he or she entitled to know the reason?

Dominique TRICARD

Today, all interruptions in the water supply in France are prepared, except if there is a serious accident such as a break in piping. A few years ago, it was decided to cut off the water supply to the city of Tours. The discussions prior to the measure lasted several hours. Since then, such decisions

are accompanied by a true assessment that takes account of all the expected impacts – no water in the piping, which can make it impossible to put out fires or remove faecal matter, for instance. Additionally, such cases always pose safety problems.

Cutting off the water supply is not the solution for water pollution. Besides, the last European directive of 1998 specifies that if the water does not meet the standards, the situation must be reviewed to find out if the water supply is to be cut off or if the situation should be managed with the temporary distribution of non-conforming water and information to the population.

Gilles SCHNEIDER

Professor Exner, what is the situation in Germany?

Martin EXNER

First of all, let me congratulate for this conference. It is a pity we do not have such debates in Germany. To come to your question, we use the same risk assessment approach in Germany. For us however, the main risk is that of pathogenic agents such as cryptosporidium. Besides, one major challenge is ensuring not only the general quality of water but also the quality of tap water. However, we are seeing the emergence of contamination by new types of bacterium, particularly in buildings and hospitals. The problem is that we still do not know how to control such contamination. Lastly, it is essential to find solutions for protecting the water systems from contamination due to return flows from individual houses in Germany. We must study the problem and make concrete suggestions to solve it.

Gilles SCHNEIDER

Are German consumers and industry willing to pay to avoid these risks?

Martin EXNER

We have yet to discuss the issue with the consumers. We are somewhat afraid to start that discussion, because we know that consumers expect us to provide immediate solutions. And we have no immediate solution for the time being.

Josée CAMBOU

What strikes me is that in this debate about risk, we seem to have forgotten that the citizens have to bear the consequences of the risk. Up until now, they have virtually not been accustomed to think of that risk, through information or the initial education of the young. As a result, the risk is not taken voluntarily. That idea of taking risks voluntarily may seem surprising. However, that is exactly what we do when we use the roads every day. We know there is a risk.

That is why we must teach the young and inform the other citizens about risk assessment by specialists. It would be quite normal to include the people in debates relating to the type of risk that they find acceptable.

Besides, I agree with Mr Pelt about the scientific work required – I am often surprised to see that when surveys are conducted, the people most capable of giving a relevant opinion are not consulted. That is extremely worrying, because the right questions are not always asked.

Gilles SCHNEIDER

Mr Hurst, are there any water-related risks that are believed to be a particular cause for concern in the USA?

Christon J. HURST

Of course there are risks. The evolution of biological organisms has made us develop the science of ecology, which in turn involves studying those biological organisms. For instance, prions appeared with BSE. But we have been studying them for 35 years. There is no reason to be frightened of them, but fear spreads must faster!

There will always be a risk related to water. But the question is whether or not that risk is acceptable. In the USA, we are naturally also concerned about the contamination of water by germs. However, in areas near electricity plants, there is also the risk of radioactivity. We have causes for concern, but we develop information campaigns to reduce the fears of people and give them the facts as they are established by the scientists.

Gilles SCHNEIDER

Do you have any contacts with European agencies? You must know that President Bush is not seen in Europe to be one of the staunchest defenders of the environment. Will that not bother you in your work?

Christon J. HURST

We have the same concerns as you in Europe. We also have contacts with European and other foreign agencies via a federal office, in order to exchange information.

Josée CAMBOU

I think when it is established that some sources can be exposed to major risks of pollution, it is important for the government to put in place alternative sources. We have obtained such measures from municipalities that draw their drinking water supply downstream from nuclear power plants or in regions with large chemicals complexes. Such solutions are better than cutting off the water supply. But they need to be thought of before there is an incident.

François BARTHÉLÉMY

These solutions must indeed be studied, because there is always a risk of failure, because of pollution or technical incidents. It is also true that cutting off the supply is an extreme measure, which comes with many drawbacks in terms of public health, because the solution is a precarious one.

Gilles SCHNEIDER

In your opinion, Mr Tricard, are citizens willing to pay a high price to protect their health and put in place systems to prevent risks relating to agriculture or industry?

Dominique TRICARD

The task of the French Food Safety Agency is to assess risks. Your question goes beyond our field of intervention. We emphasise the quality of our scientific approach, but economic management is not within the scope of our agency.

Jean-Marie PELT

Mr Hurst tells us not to be afraid. The virtues of our European culture are more marked by wisdom, discernment and caution than by boldness, which is more characteristic of our American friends. For my part, I would be curious to find out if the USA is concerned about returning into the fold of countries that are anxious to protect the environment, which I am of course fervently hoping for.

A member of the audience**Daniel DIETMANN – President**

The debate shows that all the parties involved in water want to work together to define the risks and put in place preventive systems. But I am surprised that one administrative tool we have in this country to address such questions has virtually not been mentioned here – I am talking of the water planning and management plans, which could help us to make significant progress in becoming aware of the relationship between water and the risks related to it.

I believe that the elected officials have a great responsibility for this, because they have not always had the courage to call into question the setting up of industrial or business areas, which would be necessary to ensure more effective risk prevention.

François BARTHÉLÉMY

There are indeed problems when it comes to using the resources provided to the officials. These resources include regulations and consultation bodies which are supposed to lead to management systems like the water planning and management plans.

Currently, it is true that such planning is performed in major river basins. But there are very few such plans in smaller basins. Some of them are being prepared. The new water law will certainly restart these procedures, the more so since we will be driven to that by the European framework directive, which has drawn on some ideas developed in France. In the years to come, we shall therefore have to speed up the preparation and application of water management and application plans.

A member of the audience

André LECLOUX, European Chemical Industry Confederation

Industry was represented in the workshop devoted to risk management. Today, there is no such representative, and I believe that it is regrettable, the more so since collaboration between industry, non-governmental organisations, conservationist associations and the authorities is the only way to move forward.

Besides, would it not be preferable to do our best to enforce the regulations rather than create new ones?

Jean-Marie PELT

The problem is that the chemicals industry has not gone the same way as the pharmaceuticals industry, for example, where very advanced precautionary methods are implemented before a drug is released in the market. About twenty years ago, there was no assessment of the impact of chemicals on health and the environment.

The first law in that field was enacted in 1976. At the time, a position had to be found rapidly for the hundreds of thousands of existing chemicals, which was obviously impossible. But today, we must try to assess the new chemicals that are produced in large quantities. The concern of governments is therefore founded.

A member of the audience

Jean-Louis PFENNIG

I think I am a good example, because I work on the environment in the chemicals industry. I work for an American company based in Philadelphia, which has a facility in Lauterbourg in Alsace, close to the German border. When will real efforts be made to educate the public? The public can help us to move forward. Auditing relates to inspection and sanction, but also improvement.

In Alsace, we have a long-term advantage in the chemicals industry – the closeness of Germany helps us make progress. The first environmental policy of our company dates from 1960. In the USA, the first programme on the impact of air and water on the health of the population dates from 1976.

We have set up an advisory committee including our neighbours in Germany, which meets every quarter. I presented the results of a study on the environmental impact for the people of our region. But that is no minor challenge, because fear precedes trust. We will take up that challenge with the

help of openness. Our German neighbours told us at the last meeting of the advisory committee that we have a great lead over the German chemicals industry.

François BARTHÉLÉMY

Your contribution is interesting, but it gives a specific point of view, that of one plant in a particular location. In that respect, it is true that the emissions of the chemicals industry have decreased greatly, after consultation efforts on the local level, at the initiative of corporations or the authorities.

The questions addressed to the chemicals industry relate more to its products, particularly new products, than to its discharge. But the difficulty is an overall one, related to the dispersion of the products in the environment during the course of their life cycle.

Josée CAMBOU

However, I think that scientists and engineers have the same trouble communicating. You must make very great efforts to train your teams, in France and elsewhere, as I think you have the resources for such training.

A member of the audience

Anne-Julie GRIMM

I represent the Consumers Chamber of Alsace, a consumers' association. Information is not enough for consumers – they must also be educated. In Strasbourg there was a temporary problem – not a very serious one – relating to the treatment of the water supply, which was solved fairly rapidly. But after that incident, some of the consumers began to drink only bottled water. Work must be done for more openness and speedy information in such cases in order to avoid effects of this type.

Is there no simple and quick way in which consumers could verify the quality of water, say with a colour tablet?

Dominique TRICARD

I do not believe that would be best solution from the technical standpoint, because water moves slowly in piping and does not move at the same speed everywhere. Mainly, such dyes would be deposited on the walls of pipes and would be very difficult to remove.

For urgent messages, it is certainly better to use the post or cars with loudspeakers going through the streets. One case is different, that of using chlorine for temporary pollution control while the situation is restored to its normal condition. Above all, the people must be told as soon as the problem is over, but such announcements are more difficult than those of the occurrence of an incident.

A member of the audience

Jean RÉMY

I am from San Diego, California. I have learnt a lot at this conference. However, the participants often referred to tap water and mineral water. But the third option was not mentioned at all – that of softeners. The business comes under much criticism. I think that there are some good systems. I am currently writing a book titled “The Third Choice”. What is your opinion about these systems?

Jean-Marie PELT

I am not very familiar with the impact of the devices that are added onto the water system. Personally, I am an ordinary consumer who drinks tap water and eats organically grown food.

Gilles SCHNEIDER

That brings our debate to an end.

I will now ask President Gaillard, Vice-President of the National Assembly, to sum up the proceedings of this morning. Ms Bernadette Malgorn, Prefect and Basin Coordinator, will give us her conclusions about the two days.

Thank you for your contribution.

Summary

Claude GAILLARD

**Vice-President of the National Assembly,
President of the Rhine-Meuse Basin Committee**

It is true that few water planning and management plans have been prepared, as that is so of only four of them to my knowledge. In the bill that will come before the National Assembly in the autumn, more flexible procedures will be set up to facilitate the preparation of such plans. But we shall come up against the freedom of mayors who come up against the collective responsibility. The debate will therefore be truly political in nature.

The issue of water and health is obviously rich and complex, so much so that one could wonder if it would not be better to ask the water agencies to act as the assemblers of various types of expertise, given the large number of competencies that need to be mobilised in the field of water. That ought to provide access to “unconventional knowledge” such as risk assessment, economic modelling and pharmacology. We could be surrounded by experts in the multidisciplinary aspects related to health and integrate them in the preparation of the eight programme in order to fully incorporate health into the concerns addressed by the programme. That is not currently the case.

Besides, I was impressed by the account of the effects of new pollutants, particularly through the paper read by Jean-Marie Pelt. We have to learn to expect legitimate popular anxieties, because each time progress is made, the adverse side effects are almost always greater. On the whole, science offers perhaps fewer answers than before and citizens want zero risk. The result was the invention of the precautionary principle, which has a legal effect and can lead elected officials before criminal courts. That has led to legitimate attitudes of extreme precaution. We must therefore rebuild confidence.

In that respect, the water agencies could perhaps take charge more systematically of the emerging issues relating to latent risks. We have done so for urban sludge, which has given rise to many concerns. That approach ought to make it possible to gradually recreate an atmosphere of trust and move away from the idea of zero risk, which is paralysing our society.

We must also build an information chain, in order to turn the water agencies into places with all the available information. The agencies must become resource centres that are known for their objectivity. But the stains on their reputation due to the problems relating to water have still not been erased. Along with the constitution of national and European agencies, we could set up decentralised agencies in each basin for non-partisan debate, exchange and review. They could act as the relays of national institutions. We would therefore find it easier to discuss the issues with scientists and restore confidence in the public debate on these questions.

Lastly, it is clear that we in the water agencies are often not trained in risk management. During the business of the oil slick left by the sinking of the Erika, I realised that a major French company did not have full control of risk management communication in real time either. We must work on it more, on the basis of a decentralised approach, with the local authorities and media. Think of the importance of local radios during the Storm (in France in 1999) when it came to broadcasting news

in real time. That local mode of information is certainly preferable in the field of water to more general alerts that are not as easy to manage. Let us hope that some of these elements will be incorporated in the future Water Act, so that with this conference, we collectively make a step forward. That is why I would like to thank you all, and particularly our friends from other countries.



Closing of the conference

Bernadette MALGORN

Prefect of the Lorraine region, Coordinator of the Rhine-Meuse Basin

I. Introduction: the special place of water in our environment

There is no such thing as a risk-free human activity. But not everybody is exposed to all risks. The subject of this conference has finally led us to the subjects of the environment and health. That seems quite natural to me, since water is the first element of life, for mankind and for the earth. Also, environment problems become most crucial when they concern the element of water, because we could start off by wondering why the vast tracts of water that are the seas are largely polluted by sodium chloride.

But the problems are certainly easier to understand with water than with the soil, where the phenomenon of localisation makes the task more complicated, or air, the components of which are so evanescent that they are difficult to capture. Water also has another interesting feature – what used to be a natural element has turned into a marketable good, and increasingly a service, where the immaterial part is gradually becoming the chief component. But when people look for a service, the irrational certainly plays a greater part than when they look for a tangible product. Also, in marketable services, communication becomes advertising. Public service contains an ideological component or an appreciation of the collective choices that give rise to a complex process to define the desirable level of intervention and the desirable level of solidarity, which can in the field of water vary from the micro-local level to that of the entire planet.

Lastly, water has not been subject to the same controls as health. The two subjects of water and health are not at the same stage of development. We must thank the Rhine-Meuse Water Agency for organising this conference and bringing together scientists, the public and policy-makers. Such initiatives are indeed too rare. In order to pursue the parallel with health, every autumn we organise regional health conferences, at least once a year in every region. These meetings give the citizens an opportunity to express their views, as they did during the citizen juries of the Lorraine region. The events further lead to summary recommendations on the national level, which are directly used on the regional level, in order to help define the regional programmes and public health priorities on that level with the other competent authorities (regional hospitalisation agency and local authorities).

We must therefore be thankful for the conference on health and water. It was particularly rich. It brought together the parties that can be found in all current debates – scientists and experts, the public and policy-makers, all of them being involved in the modalities of decision-making and responsibility.

II. The role of scientists

Scientists no longer enjoy the esteem they had in the past, perhaps because of problems such as that of HIV-contaminated blood or the often petty quarrels relayed by major scientific magazines in

subjects that are crucial, such as the discovery of HIV. Not to mention the memory of water, which was given so much importance by the same magazines, even when the most basic experimental conditions had not been verified in depth. Also, when methods for combating the most serious diseases of the day are developed without such basic verifications, many questions are asked. Scientists can no longer afford to think of themselves as standing on pedestals, even though that was never really the case in the first place.

Fortunately, most scientists never really accepted that position. Scientific research is driven by its own momentum and research subjects must find funds. That is why there is a self-determination of the agenda of research. But the subjects are sufficiently vast for the potential funding parties to avoid being guided by the dynamic internal to scientific progress. These funding parties are most often industry and the government, to whom researchers have to explain why their research project is of use. But these two parties also include the citizens, because industry would not exist if it did not meet the needs of consumers. Consumers vote as much by consuming as when they put their votes into ballot boxes.

All the same, it is quite natural for business to be chiefly concerned with economic criteria and for the government to be driven by the expectations of citizens, in absolute equality. That can lead to the first approximation between the expectations of citizens as responsible citizens and those of consumers, who are aware of and responsible for the water they are supplied at their tap.

III. The role of government

Governments are in a situation comparable to that of scientists – citizens no longer expect governments to tell them they are acting in the interest of good. They must not just prove that their choices are made on the basis of the general good (which idea is becoming increasingly difficult to define in the abstract sense), but also that they are made in accordance with a decision-making process that takes account of the latest scientific knowledge and the debate of scientists with their environment. We have to invent methods to do so.

The traditional methods of intervention of governments are determined by standards and the allocation of public funds. But these two approaches do not have the same meaning in the development of our society, even though they constitute alternative or complementary approaches to the intervention of governments. But standards, in addition to their technical aspect, take on a superior dimension, as expressed by the idea of “acceptable risk” – standards take on a moral dimension because they amount to accepting the cause for harm that can be done to a person. The words cause and fault have been used by participants during the debate, and that is one of the difficulties of current public debates, at a time when we must be able to locate causes dispassionately, away from finding faults, which must further be differentiated depending on whether or not they are intentional.

The fact that these questions have been raised in the public debate relating to trials where there is uncertainty about cause-effect sequences or the quality of the public decision-making process, which have put us in the sphere of unintentional faults or the possibility of intentional faults, has created extremely harmful confusion. Today, we no longer know the difference between exercising administrative control on the basis of scientific expertise and exercising control that comes under

legal processes, where it is normal to take legal action. We are running the risk of losing the effectiveness of administrative control if each agent, in every situation, only thinks of covering his or her personal penal liability and loses sight of the chief aim of protecting public health.

IV. Conclusion

As a representative of the state, I can assure you that we are highly aware of the need to work on the quality of the decision-making processes, at a time when the humanist revolution which placed man outside and precisely above nature has become history. Mankind no longer looks down on nature, and has discovered that it is just an element of nature, in a context of continuous interaction.

That does not mean we should avoid the responsibility for another very strong expectation of our society. Our actions have a guiding principle, that of sustainable development. The phrase is slightly overworked, but it revisits traditional political economy in which society was organised on the basis of three factors of production – land, labour and capital.

Today, with sustainable development, we have come back to natural resources and human resources in all their dimensions, and time, which has taken the function of what used to be capital. The concept of sustainable development can be used as a relevant guiding principle in the actions of all political and economic players and those of citizens. Thank you for giving us an opportunity to illustrate that idea through this conference.