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WELCOME

Excellencies, Mr. Executive Secretary, esteemed delegates, ladies and gentlemen,

It is an honour and a pleasure for me to welcome you all to this conference in Amsterdam.

WHY AND WHEREFORE OF THIS CONFERENCE

This conference, organized by the Government of the Netherlands in cooperation with the United Nations Economic Commission for Europe, results from the acidification conference held in Munich in June 1984 (Multilateral conference on the causes and prevention of Damage to Forests and Waters by Air Pollution in Europe).

The purpose of the conference is to make research results in the area of acidification internationally available as quickly as possible and to make it possible to translate those results into policy. That policy to control acidification must be developed and implemented is something I do not have to tell this company and my political colleagues. It is possible that not everyone is prepared to undertake the same level of action, but there is no difference of opinion about the potential, very serious consequences of acidification.

During the environmental conference in Munich in 1984, the Ministers present concluded that even more intensive cooperation in the framework of the ECE Convention on Long Range Transboundary Air Pollution is needed. The 18th and final paragraph of the resolution adopted in Munich asks the countries to lend their support to the Executive Body for the Convention (EB) in executing its task in the field of information exchange. Countries can do this by holding regular international symposia under the aegis of the UN Economic Commission for Europe to discuss the most recent scientific information relating to acidification and long range transboundary air pollution and its policy implications. I agree with this and while in Munich I offered to host the first conference.

The timely contribution of research results from the various countries is necessary. Real and coordinated political action in the area of acidification must be founded on a broad contribution of information from all countries. The underlying premise of environmental policy is protection of the weakest links in the environment. It is not then so important where that is and where the necessary action can best be taken, but it does mean that the information must be known. International solidarity begins with taking note of problems and solutions elsewhere, but also means being prepared to actually work on solving problems elsewhere.

Almost ten years after publication of the report "Long range transport of air pollutants", with which the OECD, present here now as an observer, planted the seed for this week's topic, there can be no doubt that in coming to the ECE we have come to the right place. It is the most appropriate forum that contains the regions in Europe and North America where the acidification problem has amalgated into one whole. As an aside - but certainly not just in passing - I want to express admiration for the Nordic Countries, who successfully brought the problem of "long range transport of air pollutants" and acidification to the ECE level.
It also inspires satisfaction that countries with different structures and systems have started to cooperate in this field in Europe.

During this conference we will extend a measuring tape to take the measure of the condition of our knowledge. I am convinced that our separate knowledge, when brought together, will prove to be more than the sum of the separate parts. But our knowledge must also be greater than it was in Munich, now that many countries have expanded their research and drawn up programmes. The questions that we must address, and that we hope to answer or to bring closer to an answer in the conference summary and conclusions, are:

- What directions are emerging in the research?
- Is there more certainty and new information aboutthe extent of effects?
- Is there more information about the causes; about the substances, elements (for example, about nitrogen) that play a major role? Has the problem been covered sufficiently with sulfur and nitrogen? Should hydrocarbons and ozone also be tackled?
- Is there more clarity, more insight into the speed with which the effects strike? Does this make it necessary to adjust the pace of the abatement effort?
- Is there more clarity about the levels of these substances at which possible effects appear and the levels that are acceptable?

- Is recovery of damaged ecosystems still possible? What is the situation with our cultural monuments?
- Is replanting the only hope for our forests? In that case, are temporary management measures possible and desirable?

The speakers from the various member countries will undoubtedly have spent long hours pondering such simple, but difficult to answer questions, while preparing their contributions to this conference.

UNCERTAINTIES

It is certain that acidification is an international problem whose cause and mechanism have not yet been completely explained scientifically in all details. There is little doubt about the effects. It may be expected from guests in the environment - and we are guests in the environment - that they will behave responsibly with this knowledge about effects and not leave the bill to be paid by future generations. The underlying premise, protection of the weakest link in the environment, assigns responsibility to science and politics.

Science must find the weakest link and indicate the most adequate action. Politics must ask the question: "Are we willing to undertake action?" And then there is a problem, because not everything is equally certain or agreable.

Our knowledge of acidification processes must still be described as knowledge of a "black box" to some extent. We know what goes into the box and we know something of what comes out, namely effects that usually become manifest much later or elsewhere. As long as the processes have not all been unravelled and sifted out, there is room for interpretation and we are compelled to take uncertainties into account. The point, in my opinion, is not just the existence of uncertainties, but how we handle them and decide when it is time for action.

How we deal with this uncertainty is crucial. The factory manager who sees that something is going wrong but does not do anything until he is absolutely certain, will not remain manager much longer. The question for the politician is: where and when is it going wrong, how much room for action is there, and how much time do I have?

Of course, it becomes difficult - politicians are also just people - if the costs are here and the benefits are somewhere else. My former Austrian colleague, Dr. Kurt Steyer - former Austrian Minister for Health and Environmental Protection - developed the notion of an International Fund for

the Environment in a guest article in the IIASA publication "Options". He believes that the international community of states should try to find ways and means of establishing coordinated financing activities in the various parts and the various systems of our world. This notion runs parallel to suggestions that I brought to the fore on January 29th of this year at the conference on Existing Chemicals in Brussels and on later occasions. I have the impression that analogous ideas are also circulating in other Western European countries. I believe that Dr. Steyer's proposal hits the nail on the head. His proposal combines, in principle, uncertainty and the interest the parties have in action very elegantly.

Various policy models for the approach to acidification exist. At the extremes are the model in which nothing is done until complete certainty exists, and the model in which abatement is begun immediately and corrected along the way. Reluctantly, but it is what I know best, I want to elucidate the latter model based on the choice that we have made.

In the beginning, the Netherlands let itself be led by the alarming facts that came in from outside. Weak links in the environment have been manifest outside our country for years. During the past ten to twenty years, damage to lakes and forests have been reported with increasing frequency. First the lakes in the Nordic countries, the U.S. and Canada, later the forests in Central Europe were added. Damage and injury were reported for water, soil, vegetation, monuments and cultural property and materials. Often, the effect is delayed. This inertial effect is frequently large and structural. Recovery is not simple. An inventory showed that much of the damage reported elsewhere was also present in our country. Given

- data about certain sensitive soils in Sweden and Canada, and
- the nature of our own soil

we decided to set out a goal for the future now and to draw up a package of measures for attaining it. It seems more efficient to us to institute measures now than to possibly be forced later to undertake a much larger effort with much higher costs. Joint research with industry is guiding the package of measures. Two kinds of research are involved:

1. The relationship between cause and effect
2. The effect of the measures.

Based on the results of this research, the measures will be corrected if necessary.

The other model postpones action until everything has been verified and the conclusions are clear. It has the advantage that no unnecessary costs - seen in retrospect - are incurred. But it also carries the risk of confronting us with damage that cannot be corrected or can be corrected only with very high costs. The chance is slight that this model's ultimate cost-effectiveness is high.

Which of the two models is ultimately the most effective remains to be seen. It is a matter of fairness to extend the evaluation to environmental effects and benefits in all of Europe, and not to limit it to one region.

I have dwelt on this subject because I am interested in how other countries deal with uncertainty. I hope the conference will generate more information about this.

Need for international cooperation

Acidification is an international problem urgently requiring international cooperation. I want to illustrate this point with the following short film. It also shows the possibilities of models. Results of calculations converted into pictures give a direct overview that is not possible with words. In this case, it concerns SO_2 and SO_4 pollution that migrates across large parts of Europe.

Based on estimated SO_2 emissions in Europe, the model simulates the high air pollution episode of January 1985, when authorities announced a smog-alarm in the German Ruhr area.
A high pressure system over the Baltics provided for eastward circulation over Central Europe. There was very little wind and atmospheric conditions were stable. In short, a meteorological situation providing for an accumulation in air pollution. Because the ground was covered with snow, deposition was also less than it would have been otherwise. This led to SO_2 - and sulfate formed in the atmosphere from SO_2 - being transported farther than they would have been in other circumstances. The second part of the film depicts the same situation for NO_x and nitrate.

It is clear that no matter where and how Europe is separated and unified - politically or administratively - the environment binds us together. Air is the most rapid connection. It takes only a few days for the atmosphere to transfer the side-effects of activities elsewhere.

Earlier I mentioned the OECD report on long range transport of air pollutants. This remains a clear beacon from the moment when transboundary air pollution and acidification began to receive broad international attention. Looking back, a lot has been done since then relating both to international consultation and to research, with a clear acceleration in recent years.

The ECE Convention on Long Range Transboundary Air Pollution - brought about in 1979 - entered into force in 1983. One year earlier, in 1982, the first ECE conference on acidification was held in Stockholm. There, data, concerning the damage to forests in West Germany especially, were widely publicized for the first time. The base was laid for what is known as the SO_2-protocol at the ECE acidification conference in Munich in 1984. The conference asked the "Executive Body of the Convention on Long Range Transboundary Air Pollution" to adopt a "proposal for a specific agreement on the reduction of annual national sulfur emissions or their transboundary fluxes by 1993 at the latest."

In signing the SO_2-protocol to the Convention on Long Range Transboundary Air Pollution in Helsinki last July, 21 ECE-countries explicitly acknowledged that:

- damage to forests and lakes from man-made pollution in the atmosphere is an international problem
- a start must be made with measures
- SO_2 contributes significantly and must be tackled in any case.

Among the countries who did not sign, incidentally, there are those who agree with this but for whom signing was difficult, for example because they had already instituted measures.
The formation of an ad-hoc NO_x working group was another important step taken in Helsinki. Among other things, they were charged with reporting on proposals for reducing NO_x emissions at the next meeting of the Executive Body.

The Executive Body also coordinates an extensive work programme, containing the cooperative programme for the monitoring and evaluation of the long range transmission of air pollutants in Europe (EMEP), and studies of effects and technology. It is admirable that all of this has been brought about internationally in a fairly short time, thanks partly to the active secretariat of the ECE.

The question remains, however, whether the pace of our international abatement effort is fast enough. It is of great importance that 'with a speedy information exchange' we establish this as quickly as possible.

DEVELOPMENTS FOR WHICH SPECIAL ATTENTION IS REQUIRED

The first step in international control of acidification was taken in Helsinki last July with the signing of the protocol on the reduction of sulfur emissions or their transboundary fluxes. This step must still be taken for NO_x. The foundation for the realization of such an agreement is currently being prepared by a working group of the Executive Body.

It will be of particular importance to learn from research whether there is a chance to reduce acidification sufficiently on an international basis. NO_x is a key component. It contributes to soil acidification and together with hydrocarbons is responsible for the formation of ozone. It will be especially important to learn the degree of NO_x control desired, because we are still at the beginning of the decision-making process for this component. Moreover, I understand that experts stress the role of nitrogen in soil acidification more strongly.

I have been told that that was also clear at the workshop in Oslo last month on deposition guide values for sulfur and nitrogen compounds that was organized at the initiative of the Nordic Council of Ministers. A value in the order of magnitude of 5-20 kilograms nitrogen per hectare per year was contemplated there. In comparison, our estimate of nitrogen deposition is in the range of two kilograms per hectare per year in Northern Scandinavia to approximately forty kilograms per hectare per year in Western and Central Europe.

We know that products of photochemical air pollution such as ozone cause damage to vegetation. That has been shown repeatedly in experiments. Not only high peaks of short duration are responsible. Prolonged exposure to relatively low concentrations could also cause effects. The damage from ozone - not only to forests but also, for example, to agriculture and public health - is considerable. This plus the large scale character of ozone places extra emphasis on the need for international control of NO_x and C_xH_y (hydrocarbons).

The forest in Europe suffers intensively from either acidification of the soil or damage from ozone. But air pollution also damages the harvest. It surprises me a bit that this damage receives so little international attention. We estimate the reduction in our crop yield at circa 5 percent. The damage that comes from this amounts to circa 250 million U.S. dollars per year. Translated to the Europe scale, this would near an amount in the order of four thousand million U.S. dollars. Even though this figure is uncertain or speculative, it seems worth thinking about, certainly for those countries whose economies depend on large areas of agricultural land.

EXPECTATIONS FROM THIS CONFERENCE

The points sketched previously show how important it is for international environmental policy to be informed quickly about the results of research. The design of this conference is such that, in any case

- the countries can become acquainted with each other's research and its results, so that mutual support becomes possible, double effort can be avoided but also gaps can be identified,
- there will be a start toward converting research results into acidification abatement policy. And not only within individual countries, but jointly.

But I expect still more from this conference. I expect that this conference will also mean actual support for the Executive Body in carrying out its work programme. This means that exactly those questions with which I began are on the agenda. It is very important to find answers for those questions, even if the answers are not complete.

We must know the extent of effects of acidification; how fast the effects appear; what we can do and how quickly we should do it; and what environmental burden is acceptable. Based on the answers, the Executive Body will be able to evaluate the pace of its work programme.

Whether or not this conference will be successful will be shown from what the Executive Body can do with the results. It will also show whether repeating this conference every two or three years, for example, is useful.