

Opening address by Minister de Boer (VROM) at the RISK 97 conference, Amsterdam, 22 October 1997

spoken by C.M. Plug

Mr. Chairman, ladies and gentlemen,

Thank you for giving me the opportunity to address you at the start of this international conference on risk assessment and risk mapping.

As you will all know from your history books, the Dutch have always been concerned about the environment, living as many of us do below sea level with the ever-present risk of flooding, were it not for the protection of the dikes.

It is precisely in the low-lying parts of the country that our major centres of business, industry and government are located and it is here where 60% of the Dutch population live and work. The population density in these areas ranks among the highest in the world.

It is high population densities and intense economic activity in the Netherlands that has resulted in serious pressure on the environment. As in many other industrialised countries, numerous environmental problems in the country are related to the extensive use of hazardous chemical substances.

Since they can cause serious problems to man and to the environment, it is of utmost importance to regulate the use of them effectively.

To do so, two crucial issues have to be addressed:- to what extent can the hazards involved be considered acceptable; - to what extent should hazards that are considered conditionally acceptable be reduced further and how should such reduction be weighed against the costs and the societal constraints.

In other words: How safe is safe enough?

If you take a close look at the issues, you will find that hazardous activities will always entail a certain level of risk, even when all possible measures have been taken. Society has to find ways of dealing with this residual risk.

We need to be able to quantify the impact of risks so that we can compare them with other quantifiable aspects and interest that have to be taken into account: what does risk reduction cost? What are the economic advantages of the activity involved? What are the safety distances?

Since 1988, the Netherlands has adopted a risk-based approach to environmental protection policy. This approach forms the basis for regulation on external industrial safety, nuclear safety and the use of new and existing chemicals.

Probability plays an important role in the concept of environmental risk. Probability may relate to various aspects, for instance the probability of an accident or the probability of contracting cancer from a certain dose of a substance in the food chain.

I should like to look with you at some aspects of our risk-based policies for a number of key areas: the use of hazardous chemicals, nuclear safety, transport risks and external safety.

The concept of risk as far as *chemicals are concerned* focuses on the effects on man and the environment arising from chemicals that are already present in the environment. The probability to be considered is that of damage to health or damage to natural habitats, for instance.

Since the issue of *nuclear safety* is politically and socially very controversial, a clearly structured and transparent decision-making process is vital. Safety policy in our country is based on PSA, probabilistic safety analysis. Nuclear safety is one of the first fields to which risk-based approaches were applied, the Rasmussen report which was published in 1975, being probably the most famous example.

Transport risks are increasingly becoming a focal point for external safety policy. Roads, railways and waterways are being used more and more to transport dangerous chemicals. Such shipments sometimes have to pass through densely populated areas, making an appropriate safety policy absolutely crucial. This is why we adopted a risk-based policy for the transport of dangerous chemicals in the Netherlands in 1996. We have already carried out large-scale surveys of transport risks and these are regularly updated. Comparison of the risks involved for diverse transport routes would appear to be a useful instrument for this purpose.

Schiphol airport has been studied closely following on from the El Al Boeing accident in 1992. Plans for the area around Schiphol now place constraints on the expansion of residential areas and other activities. In terms of risk, airports involve a large area. a conflict arises here with the high population density I mentioned earlier. So we are having to weigh the immense economic importance of an airport for trade and transport, against the safety of people living and working in the vicinity. Here, too, risk assessment and risk policy help us to make objective decisions.

Our *external safety policy*—designed to prevent major hazards arising at establishments where dangerous chemicals are present—relates to more than 4000 sites in the Netherlands and has evolved over the past 15 years. Here, too, the shortage of space made it imperative for us to find an efficient approach which would secure the safe coexistence of industry and the population. Thus, a risk-based approach to the management of industrial hazards was adopted in the mid-eighties as the best solution, partly on the strength, too, of earlier experiences in the nuclear industry.

What about risk-based approaches within the broader framework of environmental protection policy? Important aspects of this policy are the *ALARA* (ALARA: as low as reasonably achievable) and the *polluter pays principles*.

An element of the polluter pays principle is to be found in the distinction between *source-oriented* and *effect-oriented* policy. Source-oriented policy implies that risk

reduction at source by measures imposed should always prevail insofar as such measures are reasonable.

Since polluters are the source of the risk, they are primarily responsible for reducing the risks and paying the costs. The measures required of the source of the risk have to comply with the ALARA principle: in other words these risks must always be reduced by means of safety measures provided this can be done at reasonable expense. Once a risk has been reduced at source to a level as low as is reasonably achievable (ALARA), people living in the vicinity of a dangerous installation can only be protected against the residual risk by keeping a safe distance.

This principle of keeping a safe distance is now also laid down in article 12 of the European Seveso directive that was revised at the beginning of this year.

I started off my address by asking a question that has a considerable impact on many policy decisions: *How safe is safe enough?*

In other words what level of risk is acceptable or tolerable. The acceptability criterion used in the Netherlands is that the risk should be sufficiently low by comparison with the average risk to humans.

If we fail to assess the risks of certain activities in good time, we may find that the risk acceptability criteria are not being satisfactorily met. This was clearly the case, for instance, in a major study performed in the Netherlands on the risks connected with *railway marshalling yards*.

We assessed the high risks surrounding railway marshalling yards, especially the high risks to the community in some city centres, and we are now about to launch a programme to ensure that the risks match the acceptability criteria.

Decision-making issues have to be faced, particularly with reference to *spatial planning* policies, but also in other fields. Tools like risk mapping and geographical information systems will gain in importance since they facilitate decisions on spatial planning and environmental issues.

But besides mentioning the advantages of risk-oriented methods and policies, I hope you will allow me to mention a few difficulties as well.

A first difficulty is that while risks can be calculated and shown on maps, you cannot hear or smell them. Consequently, as long as nothing happens, hazards are sometimes underestimated. This applies all the more when there are obvious economic advantages at stake. The risk level could then questionably be lower than has been assessed. Has the risk in fact been calculated accurately enough?

Admittedly, we cannot always calculate risks precisely. If we calculate them to the best of our knowledge, they could be either a little lower or a little higher. Inaccuracy is a fact of life if we use a risk-based approach. Risk assessment may not be a perfect instrument but it's the best knowledge we have. and when it comes to people's safety, we are expected to use the best knowledge we have.

Let me look briefly at *international views* on risk-based policy. In international circles, there have always been two approaches to safety: the deterministic and the probabilistic approach.

The viewpoints on these two approaches differ from country to country, but also between authorities and industry. For a more consensual approach, we have a vital need to exchange views and experiences in the framework of international institutions such as

the OECD, the UN, and of course the working groups of the European Union. Even so, we have to accept that as long as these instruments do not negatively influence free trade in the Union, they are in the domain of subsidiarity. The divergences in legislative systems in the member states as regards land use planning have demonstrably resulted in different approaches and instruments.

As I said, we may well conclude that in many areas of environmental protection, tools like risk assessment, geographical information systems and risk mapping are very useful, especially for policy-makers and those responsible for spatial planning. They could become increasingly more important in the near future.

The Environmental Balance and Environmental Outlook reports which are now regularly published by the National Institute for Public Health and Environmental Protection (RIVM) contain many excellent examples of risk maps and other environmental data mapping.

I should like to express my appreciation here to the RIVM, an institute at the leading edge of such developments, together with other organisations and agencies, for the organisation of this international conference.

The Seveso directive shows that the European Commission is also displaying growing interest in risk analysis methods. The wide range of delegates from many countries is a token of the significant international interest in the developments surrounding risk tools and risk mapping.

The past has made it very clear to us how important it is to have operational and reliable risk and pollution effect information systems directly available when real calamities occur.

Not long ago, at national level, we simulated a major hazard case in the form of a ship carrying toxic gas that suffered damaged on the Westerschelde river. Such a simulation shows very clearly how crucial it is to have accurate and reliable information available—as well as modelling and decision-support capabilities. The safety of people in a large area of the country could well depend on that information.

It is impossible to imagine how we could get hold of all the information we need to take the right decisions in such a situation without the use of the advanced instruments like the ones you will be discussing at this conference.

I hope, therefore, that your conference is a great success.