
Speech by Mr. Goossensen (Arcadis)

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Your Highness, Your Excellence, Spectabilis chancellor, Ladies and gentlemen,

After the previous introductions it is obvious that water management requires a lot of attention and that this awareness has even become more and more clear after the floods in 1998, 2002, both in the Czech Republic and in the Netherlands.

Based on this awareness and on recent developments in our two countries, we started a project focusing on "risk analysis". This subject was chosen because risk analysis provides a rational basis for many discussions and decisions. A good risk analysis legitimates politics. And risk analysis was very an actual topic after the recent floods. Questions arose like: "are our protection levels still as high as they need to be?" and "what is behind these protection levels?" And statements were made like "floods like this should never happen again!" These statements and questions are very understandable and a response was necessary.

Therefore the Czech Ministry of Agriculture started in the autumn of 2002 a project called "Strengthening risk analysis and Flood zoning in Czech Water management". The first objective of this project was to introduce the concept of risk analysis and to develop a methodology to apply risk analysis and flood zoning in the Czech Republic. The second objective was to exchange knowledge between Czech and Dutch water-experts and to learn from each other in an open atmosphere. The third objective was to support the alignment of the Czech water policy with EU-water policy.

The project was carried out by ARCADIS and we partnered with the Institute for Applied Physics TNO, Eco-consult and Mr. Schaap. The Dutch program Partners for Water financed the Dutch input for this project. In this program the ministries of Transport, Public Work and Water management, Agriculture, Environment, Foreign Affairs and Economic Affairs work together. This co-operation also stresses the impact of water on many aspects of our society.

So, the project focuses on risk analysis. But what is "risk analysis", and what is a "risk"? Scientifically spoken, a risk is the probability that an event occurs multiplied with the damage caused by that event. This is a universal equation, which is valid for many aspects of our personal life. We all know that there are risks involved in driving a car or crossing a street. And we all know that we ourselves are able to influence the probability by taking care of the way we drive and that we are able to influence the damage by fastening our seatbelts. This is implicit knowledge known by almost everybody and which is learned and, in many cases, even experienced by everybody since the day we are born until now. It is implicit knowledge by individuals, but very well researched by insurance companies.

A safe environment is also a responsibility on governmental level. The government has a lot of tools and instruments to create a safe environment. Tools like laws, regulations and standards. For a good foundation of these instruments, the government also has to make this knowledge explicit and has to identify "probability" and "damage". Due to the fact that this concerns also welfare, environment, economy, this is something that should not be left at the table of water managers only.

Probability is a very "hot" issue in water management, due to discussions about climate change. We can use rainfall data in combination with hydraulic computer models to calculate the discharge of rivers, the velocity of the water, and the water levels in the river. Together with a good statistical analysis we can predict whether a certain water level will occur each year, every 10 or 100 years or even every 1000-year. Of course the value of these results depend very much on the reliability of the data. Generally speaking we know the water levels rises much between the 1-year and 100-year situation but there is a relative little difference between the 100-year and the 1000-year water level.

Hydrological and meteorological data are both in the Netherlands and in the Czech Republic available and for nearly every relevant river in the Czech Republic adequate models have been made. So, the probability is known and therefore we know by example that the 2002 flood was a flood that occurs every 500 year.

The "damage" part of risk is even more complicated. There is economical damage, ecological damage, environmental damage and social damage. In this project we elaborated so called "damage curves" for different forms of land-use. By example, the damage of a hectare of maize that is flooded is less then a hectare of a city that is flooded.

The combination of these elements leads to the conclusion that annual flooding of agriculture land might cause even less damage than a flooding with a probability of every 100 years of a village or town!

In the specific Czech situation “velocity” of the water also has an important impact on damage. Therefore we also worked on the determination of active zones: zones in which the biggest part of the discharge takes place. In these zones building activities should be banned.

Based on information on damage and occurrence it is also possible to investigate measures against flooding. This leads again to the same conclusion that it is worth to invest much more money to protect valuable activities like housing, production facilities, hospitals and locations with are environmental sensitive. A good knowledge of this will focus investment and gives the government the opportunity to spend the taxpayers’ money as good as possible. In the Czech Republic the actual protection standard for urban areas is now a 100-year situation. It is obvious that this standard can vary from place to place based on local circumstances.

All these aspects are within the framework of this project fitted within a transparent methodology and incorporated in a GIS-system (Graphical Information System). This methodology is tested in a couple of pilot areas. The Povodi’s for the Vltava, Ohre, Morava and Labe did this. Based on the experiences of these tests it was concluded that the methodology works very well.

This is a step forward in giving a good fundament for water management. As stated by Mr. Schaap, the intergovernmental communication increases in importance. Not only because water management requires space but also, because water management has a very strong impact on peoples’ life, health, economical activities and on environmental quality. The value of this methodology is, that it provides us with a powerful tool to start the discussions with other authorities.

Let me finish with the following. During this project it became clear that water managers from the Czech Republic and the Netherlands could learn a lot from each other. Therefore we discovered a huge amount of similarities. We are proud that we have been able to work on this project, with the network that arose and with the results of this project. I would like to thank all the parties involved for their co-operation and hope that the results will soon be implemented in our two countries.