



# Risk Assessment in Europe

A summary from the EU  
Workshop on  
Risk Assessment  
arranged in Oslo  
25-26 November 1999

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**Directorate for Civil Defence and Emergency Planning**

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# Risk Assessment in Europe

Workshop on Risk Assessment - Oslo 25-26 November 1999

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- Summary: This report is based on the results and conclusions from a workshop on «Risk Assessment» held in Oslo November 1999. Lectures from this workshop is presented at DCDEPs Internet site through year 2000.
- Subjects: The report will give a presentation on topics: Risk assessment, follow up procedures, risk communication, risk acceptance, geographical information systems, risk mapping, dimensional planning of fire brigades, safety, security, flood warning, dam risk management, quality management, earthquake emergency, discussion results.

## Preface

This report is the result of the workshop on Risk Assessment arranged in Oslo 25-26 November 1999. The idea to bring different people together to exchange experience and views in this specific field has proved to be both educational and interesting.

Serious accidents, disasters and the breakdown of vital systems in a society often reveals that the society is not adequately prepared to deal with a difficult situation in a satisfactory manner. 42 speakers and participants from 12 different countries gathered to discuss how to prepare for difficult situations such as serious accidents, disasters and breakdown of vital systems in society. The character of undesirable events varies between both regions and nations. Recent examples of this are earthquakes in Turkey and Greece, the collapse of a building in Italy, flooding in France, a tunnel fire, shipwreck and railway disasters here in Norway, avalanches last winter in Austria, and so on. The workshop was hosted by the Directorate for Civil Defence and Emergency Planning (DCDEP).

On behalf of the DCDEP I would like to thank the European Commission and the Civil Protection Unit for their assistance in co-financing this workshop together with us. I would also like to thank the participants in the organising committee: Ms. Harriet Lonka, Finland, Dr. Horst Siegmund, Germany, Ms. Janet Edwards, Sweden, Ms. Fernanda Aires Rodrigues, Portugal, Mr. Arne-Jarl Ringstad representing Rogaland Research for their contribution. I would further give a special thanks to all the speakers, and chairmen of the working groups for their help in bringing this arrangement about.

The participants also deserve our gratitude for creating a stimulating atmosphere during the workshop sessions as well as the social, and thereby making this a constructive and interesting workshop. And finally I like to thank Mr Roger Steen, adviser for writing this report, with valuable assistance and contribution from Ms Ann Kristin Henriksen and Ms Marit Coppendale.

DCDEP  
Oslo - Norway, April 2000

Mr. Nils Ivar Larsen  
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## 1 Introduction

Natural disaster has been a fact of life since the beginning of time, but technological and economic developments have also led to a steadily growing number of undesirable events such as fires and explosions, environmental disturbances, production stoppages, interruptions in supply chains and breakdowns in different technological infrastructure. The character of risk and threats (undesirable events) varies between both regions and nations. However, some undesirable events are more common than others, and more or less every nation has to deal with it some way or other.

General use of risk assessment can provide a basis for preventing and limiting the consequences of accidents, enabling the risks to be dealt with in a coherent way. This is supported by the United Nations Program APELL (Awareness and Preparedness for Emergencies at Local Level), which states that risk assessment is the starting point of emergency planning.

All over Europe, authorities are working in different ways to safeguard populations by preventing hazards and reducing vulnerability. Some have developed methods for analysing specific risk categories, while others apply more general risk analysing methods. Different nations also have different approaches for following up risk analyses. However, a common issue is the necessity to identify and prioritise risks before preventing them. By identifying the hazards, describing the vulnerability and knowing the available means of response to mitigate the consequences of a major accident, one can create a better awareness in decision makers and speed up the vigilance of all agencies and authorities involved.

In this context it is important that nations get an overview of methods and approaches that exist within risk assessment. A goal is that other nations has good or bad experiences with different tools and approaches can be used by others. Such information can be an effective mean of enhancing compatibility in risk assessment methods and contribute to more effective cross-border response co-operation within EU/EEA countries.

### 1.1 Background for the workshop

Is safe - safe enough? Who shall define what is acceptable risk - media, the public true legislation or the politicians? Questions which always result in an interesting discussion. These were some of the challenges this workshop wanted to address.

The workshop intended to create a forum for sharing information about the different risk assessment procedures and methods used in the EU/EEA countries, and experiences with the use of risk analysis. An additional purpose was to give the participants information, and the possibility of exchanging

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experiences about follow-up measures of risk analysis in planning procedures and plans, including the use of risk visualising in digital maps (GIS)

A further objective was to be an effective mean of enhancing compatibility in risk assessment methods, and contribute to more effective cross-border response co-operation within EU/EEA countries.

## 1.2 Workshop activities

The theme's of the workshop were set in a similar context as other projects within the framework of the Community Action Programme in the field of Civil Protection. Workshop activities were related to the results and experiences from other projects such as:

- The results of the Finnish Survey and questionnaire on risk assessment procedure
- The workshop «Safety Chain» arranged by The Netherlands
- The cross-border project between Belgium, Germany and the Netherlands - known as «EUREGIO Maas-Rhine».

## 1.3 Results expected

The results expected from the workshop were as follows:

- exchange of information about different risk assessment procedures and methods, the use of risk analyses and of the follow-up of risk analyses in planning procedures and plans.
- a workshop report, consisting of the topics and ideas exchanged and including a set of guidelines of how efficient risk assessment procedures could be established.

## 1.4 Lectures presented

Most of the lectures presented during the workshop is enclosed in a separate report, «Risk Assessment in Europe - part 2 - Lectures presented at the EU workshop on Risk Assessment - Oslo 25-26 November 1999». This report is available only on DCDEPs Internet site ([www.dsb.no](http://www.dsb.no)) as a Acrobat Reader (.pdf document).

## 1.5 Definitions

The editors definitions of words used in this report.

**Risk Assessment:** The identification of risk, the measurement of risk, and the process of prioritising risks.

**Risk Management:** Risk Management is a process consisting of well-defined steps which, when taken in sequence, support better decision making by contributing to a greater insight into risks and their impacts. It is as much about identifying opportunities as it is about avoiding losses.

**Risk Acceptance:** A *Risk Management* technique that allows management to weigh the cost of managing the risk versus the benefits of reducing the risk. Risk acceptance is a matter for the management. The amount of acceptable risk should be determined beforehand.

**Risk Communication:** An interactive process of exchanges of information and opinions between individuals, groups and institutions, involving discussions of types and levels of risk and measures for dealing with risks.

### ***2. A brief introduction to the Risk Assessment work in Norway***

Since the early 1990`s, Directorate for Civil Defence and Emergency Planning, Norway (DCDEP) has worked hard to make the different administrative levels in Norway carry out risk- and vulnerability analyses. The municipalities are our prime target, but it is also most satisfactory to see that ministries and private enterprises are using our method of risk and vulnerability analysis. The introduction of this method has been a part of a strategy for reducing the vulnerability of the society.

This effort has been necessary for several reasons. We make ourselves more and more vulnerable, through national policies and local planning, and we are often unaware of the consequences of our actions. One of our goals with the work on risk- and vulnerability analyses is to reduce society's vulnerability to accidents, crises and catastrophes in order to create a safer and more resilient society. The goal is to prevent crises and catastrophes, not only be prepared when the crises already has occurred. The Directorates aim is to influence the authorities and specially the municipalities.

Over 90% of the municipalities in Norway have made risk- and vulnerability analyses. It is important that these analyses do not end up just as descriptions of reality. But that the work is being updated and continued in proposals to implement measures which will increase the resilience and preparedness in the municipalities. In order to evaluate the effect of our efforts, to estimate the quality and tempo of the analyses and to identify areas where new measures have to be developed, we engaged the consulting company, Asplan Viak. The questions asked were as follows: Is this work of any importance to the municipalities? And which areas could be improved?

Political and administrative leaders from about 100 municipalities (about 25% of the municipalities in Norway) were interviewed. The research showed that the work with the Risk- and Vulnerability Analyses, to a large extent increased awareness of the use of areas where the municipality was particularly vulnerable. Both the politicians and the administration agreed that the work was important to the municipalities ability to prevent and handle accidents, crises and catastrophes.

Furthermore research showed that 75% of the municipalities with experience from Risk- and Vulnerability Analyses, regarded the work to have a positive impact on the co-ordination between different departments in the municipalities as well with other authorities. A broad and interdisciplinary participation was an important factor to succeed.

In addition to that, the analyses were regarded as important tools for organising and dividing the responsibilities, and they had a positive impact on the ordinary organisational development in the municipalities. The work with the risk- and vulnerability analyses often led to immediate solutions of unsolved problems.



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The municipalities also felt that their ability to manage crises was thereby improved.

The implementation of Risk- and Vulnerability Analyses, shows that the technical dimensions of the society are thoroughly examined. Undesired developments such as rising crime rates, violence and drug abuse are seldom or never considered. This could be added to our own priorities and the way we have marketed the analyses, but an assessment of these areas would probably have a considerable potential.

Implementation of measures as a follow-up of the analyses is important. Now, hard work is required to take the step from goodwill to implementation of concrete measures.

It has so far been frustrating to notice some the lack of routines and decisions to continue and update the risk- and vulnerability analyses. One answer to this must be an increased focus on implementation of a quality management system, or internal audit in order to create good work conditions in the municipalities.

The priority is to establish aims and objectives for emergency planning. Aims being the general principle, and objectives being the concrete actions that should be transformed into yearly plans. Some of the aims and objectives have been decided by superior authorities. Other aims and objectives, must however reflect what the municipalities themselves want to achieve.

Secondly, it must be decided whom does what. Areas of responsibility must be established (internally in the municipalities and between other authorities). It must be ensured that someone is responsible for carrying out the objectives.

Thirdly, the municipality must establish an organisation and procedures capable of transforming objectives into concrete measures and producing results (e.g. material emergency plans). In this way, Crises Management Planning are developed, and most importantly, kept alive by constant attention and updating.

The key word is to look at the planning process as a whole. We want to see if it is working according to expectations. We do not want to check whether single elements of the system are in accordance with a detailed preparedness handbook. The internal audit system must be organised in such a way that it motivates the municipalities to improve their preparedness.

The best ambassadors of this risk assessment work are without doubt representatives from successful municipalities and agencies.

## **Part 1 Basic results and conclusions**

### ***3. Summary of the results of the workshop***

One of the results expected from the workshop was a set of guidelines to how efficient risk assessment procedures could be established. This goal was maybe a bit over ambitious seen in retrospect. The workshop did not seem to give an immediate incentive to develop common procedures or even a guide book for the use of risk assessment procedures. The workshop believes that there is difficulty in defining/agreeing on the principles, because each country has its own priorities, local communities, central authorities and different kinds of legislation. The criteria of definition of risks vary in different countries. The conclusion has to be that this is not the right time create a set of guidelines. The need to do a more thorough study in how different European countries are working with Risk Assessment is probably needed before more common guidelines can be presented.

It has anyway been suggested some general features in such a Risk Assessment process.

#### **3.1 A Risk Assessment process in 5 steps**

- **1: Identify undesirable events**
- **2: Describe causes and determine probability**
- **3: Classify consequences**
- **4: Systematisation of identified risks**  
(the probability of an event occurring, combined with its consequences, together reflect the risk that an event represents. A risk matrix may prove useful in providing an overall picture of risks.)
- **5: Propose countermeasures**  
(indicate possible means of reducing risks and vulnerability.)

Today European countries are carrying out risk assessment in different ways, and it is also possible to see that there are differences between sectors.

If one were to pursue the line of thought that a set of guidelines is desirable it is strongly recommended to carry out a thorough cross-boarder study with the goal to consider the need to establish common risk assessment procedures in Europe. Maybe a strategic way of reaching this goal is to start with a guide-book/collection of best practice in risk assessment work in Europe. (See the chapter «Suggestions for further work» where this is suggested.)

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It is interesting to see that the working group 1 is of the opinion that it is possible to define an accepted level of risk, and at the same time gives indicates that this is done in UK. It would be interesting to see whether other countries also have established common risk acceptance criteria. In the chapter «Suggestions for further work» we recommend a study with the goal to consider the need to establish common risk acceptance criteria in Europe It is possible that the demands and expectations on security and safety levels will be increased compared to present level by establishing such a common criteria.

It was further recommended to continue with this kind of workshops in order to develop cross-boarder projects in this field of work, and thereby clear the ground for the progression of a common set of Risk Assessment procedures between different European countries.

### ***4 Questions and results of the discussions in «Session on the Experiences With - and the Follow Up of Risk Assessment»***

The purpose of the working group discussions was to create a forum for a more in depth debate of different issues. The workshop participants were given the opportunity to choose between 3 working group sessions, depending on individual interest and occupational background. The discussion commenced with a set of questions regarding different topics.

Text in this chapter is based on key words and notes presented by each working group. One should however be aware that the summary after each question, contains the editors interpretation, of what the working groups discussed and concluded.

Chairmen of the working groups: Dr. Horst Siegmund, Germany, Mr Peter Christensen, Denmark and Mr. Anders Arnhus, Norway.

#### **4.1. Questions and results from working group I**

##### **Theme: Dimensional Planning**

##### **Question**

- Lack of resources can force us to choose between risks when it comes to taking corrective measures. Is it possible to define an accepted risk, and which criteria should be used to compare different kinds of risks?

##### **Summary**

It was the opinion of this working group it is a possibility to define an accepted level of risk, and indicates that this is done in UK. Some essential questions are however put on the agenda. Whom shall define what is acceptable?

Several suggestions to criteria have been made, of both a qualitative and quantitative nature. Looking at the different qualitative criteria eg. societal demands, the floods in Portugal are viewed as an unacceptable risk and fires have low acceptance in Greece. However floods are not regarded to be quite as unacceptable in other countries. There are therefor varying levels of risk acceptance in the different parts of Europe as to what is acceptable risk. The reason for this being the nature/character of the risk one is vulnerable to. This is probably due to frequency of the occurrence, the possibilities of reducing the consequences with the existing preparedness resources available in the local community. Other qualitative factors were Environmental (Roads vs environmental impact) and resilience of society( potential to recovery).

As one can see, there are variations throughout Europe. It can easily be assumed that it is natural that certain countries emphasise their efforts on floods if they are more vulnerable to them.

Aspects such as lives and economics were important factors to be considered. To which extent do we accept loss of lives in a catastrophe or crisis situation? Several thousand lives are lost annually on the roads of Europe. Do drivers and authorities perceive this as an unacceptable risk or not? In the event of a single serious plane crash, does the loss of 100-200 lives seem less acceptable and more frightening than road traffic accidents where fewer are involved at the time?

### Who should define the criteria

Several bodies (media/the public/the authorities) have a perception of what is acceptable and what is not. Definitive criteria of acceptance should be set by the authorities. Clear goals should be set, preventive measures taken and regulations implemented. An important question being, do the authorities want to set the standards/criteria. If the standards are too high, the cost of preventive efforts and high degree of preparedness will quickly escalate. If the standards are too low, the general public will be critical to the authorities lack of initiative in risk reduction.

### Question

- The use of scenarios as foundation for dimensioning adequate preparedness measures is commonly used. What are the strength and weaknesses using scenario-based dimensioning?

### Summary

An common pitfall by using scenarios is to use the last accident or disaster as the dimensioning measure instead of using the next one. A good risk assessment process will give a better probability of predicting what the next disaster is like and be prepared to handle this one.

On the other side it is important not to exclude scenarios (for instance shown in a risk assessment with extreme low probability). Worst case scenarios does not happen often, but the consequences are enormous.

The work group came to the following conclusion when it respectively assessed strengths and weaknesses of using scenarios as foundation for dimensioning adequate preparedness measures:

The Strengths of using scenarios as foundation for dimensioning adequate preparedness measures can be listed as follow:

- Inform planning
- Plan resource levels
- Plan tactics
- Validate plans, resources and tactics

Weaknesses of using scenarios as foundation for dimensioning adequate preparedness measures can be listed as following:

- Planning based on scenarios is limited
- It may be better to put efforts into reducing risk rather than building greater operational capability

### Question

- The interface between the academic side of risk assessment and a more practical executing side, consisting of Fire Officers, Civil Defence Officers etc., often represent a collision between two different regimes having problems understanding each other and communicating on the same level. What can be done to reduce such co-operational difficulties?

### Summary

The working group tries here to give a pointer to better the problems of communication between the academic side of risk assessment and a more practical executing side. Proposals were: project working and multi disciplinary approach is well known, but often dependent of all involved actually see the benefit and are willing to accept the different approach. In the work with risk and vulnerability analyses in Norway, the multi disciplinary approach has been the vital key to success.

The work group listed the following to be done to enable the academical and practical sides of risk assessment to work better together:

- Project working
- More education
- Multi disciplinary approach
- Accept that simplicity is valid
- Applied research

## 4.2. Questions and results from working group II

**Theme: Co-operation between industry and local authorities:**

### Question

- How do we ensure that industries and enterprises carry out Risk Analyses that take into account security and safety issues concerning the local community and environment, as well as looking after their own economic and environmental interests?

### Summary

Enterprises that carry out Risk analyses often do so in order to protect their own interests. Economic loss caused by a stoppage in production, or even "loss of face" motivates industries to ensure risk assessment. The challenge arises when people living in the local environment make heavier demands on safety issues than considered strictly necessary or economically feasible in a cost/benefit perspective by the enterprise.

One must also consider that society's expectation of safety measures sometimes exceeds the reasonable capacity of an enterprise. E.g. societies' need to

safeguard the telecommunications services would be demanding more than the operator would find economically feasible. Who would then pay for increased safety? Would it be the subscribers, or would the authorities have to finance this?

In the present day, environment concerns are taken seriously by most enterprises. Market awareness as well as legislation have contributed to this. If one is to increase the focus on safety and preparedness, one has to bear this in mind.

### **Question**

- Public work on reduction of vulnerability in our society is of great benefit to e.g. insurance companies. Is it likely that public authorities, insurance companies and industry could collaborate on these issues, - and how can experiences from industry and insurance companies be used in developing the use of risk assessment in civil protection?

### **Summary**

Preventing or reducing the consequences of a catastrophe is, for different reasons, an interest common to Insurance companies, industry and the authorities. To the insurance companies, accident prevention will benefit them financially.

The aforementioned parties would undoubtedly collaborate well on the subject, but at the same time they would have to be aware of their particular roles. However, the authorities must be aware of their responsibility of supervising industry and insurance companies.

### **Question**

- How can emergency preparedness considerations for civil/community protection be implemented into different planning sectors, i.g. public authorities, industry, etc., in order to create a more resilient society?

### **Summary**

The creation of an arena for exchange of "best practise" would be invaluable. By bringing together the different sectors to exchange information on method and experiences, would contribute to closer co-operation between industry and the authorities.

### 4.3. Questions and results from working group III

#### **Theme: Assessment of Technical vs. Natural disasters**

##### **Question**

- Does the acceptance of risks, especially technical risks (traffic, hazardous installations, etc.) differ from the acceptance of natural risks (floods, storms, heavy snowfalls, forest fires, etc.), and if so - what are the reasons and how are the situations in the different member states?

##### **Summary**

As there are obvious differences in risk perception between natural and technical disasters, natural disasters as earthquakes and floods are mainly considered as inevitable, and therefore have to be accepted as a risk. So it was quite clear to the work group that technical risks are not accepted in the same way as natural risks, because natural risks are often regarded to be inevitable. Technical risks are considered as man made and therefore very often less easily accepted than natural risks.

The idea that natural risks cannot be modified, because we can't do anything about them has changed in the past as prediction and mitigation is more and more possible. Though the causes are not likely to be influenced by us (we cannot control natural risks in the same way as we can control technical risks) but we can do things to reduce the impact.

- e.g. floods: improve the construction and stability of dams; create and select retention areas for river floodings
- earthquakes: construction of buildings, improve early warning systems

The acceptance of technical risks is influenced by the **individual valuation** of the consequences of not accepting a certain risk versus the benefits of accepting this risk. As this rating is individual a much broader variety exists in the subjective acceptance of technical risks than in the acceptance of natural ones.

In addition there are risks we can not omit in a technical based society (e.g. production and handling of electricity, public and individual traffic) the only thing we can do is to reduce these risks to an acceptable level.

«Risk perception» differs from region to region, e.g. earthquakes in Portugal, risk of flood is not accepted in the Netherlands

##### **Out of a individual view**

Those kinds of risk that can be controlled or influenced by individual behaviour (traffic) are more accepted than those controlled by others (chemical plants). We have to respond, therefore we have to consider it, because we have to manage it somehow.

Probability of an aeroplane crash, the public does not expect an accident to happen.



The opinion of this working group is that the general public more readily accepts the occurrence of natural disasters as opposed to disasters caused by technical errors/human error. The big question is who shall decide what a correct level of risk is? Concerning technical risks the acceptance depends on the benefits which we gain by accepting a risk: high benefit leads to the acceptance of a high risk.

### Question

- Are scenarios with a extreme low probability a useful base for planning preventive measures? E.g. has the possible physical release of the maximum amount of a hazardous substance existing in a chemical plant or storage facility to be considered, or should we limit our source terms?

### Summary

When choosing scenarios we always face some dilemmas. Choose a scenarios with extremely low probability and with enormous consequences for the society, or choose scenarios with high probability and lesser consequences for the society. Sometimes cost/benefit can not be the only thing to guide the efforts to make a more robust society. Basic measures based on existing resources should be convenient for each thinkable disaster.

The work group discussed following items:

- We can be prepared for certain scenarios, but we cant be prepared for all.
- Preparedness has to keep in mind cost/benefit.
- Consequence x probability has to be considered when developing basic response structures, because we have to respond when a disaster occurs.

### Question

- Is there a need for developing common procedures or even a guide book for the use of risk assessment procedures and their use in civil protection and rescue service in the EU countries?

### Summary

It does not seem to be an immediate interest to develop a common procedures or even a guide book for the use of risk assessment procedures.

To create set of guidelines of how efficient risk assessment procedures could be established was one of the goals set by the organisation committee for this work shop. It is also comprehensible that the work group is a bit reserved. There is difficulty in agreeing on the principles, because each country has its own priorities, local communities, central authorities and different kinds of legislation. The criteria of definition of risks vary in different countries.

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But the working group sees the importance of sharing «best practice». To create a common database is desirable. The database should summarise the experiences, measures and methods of the member states so that they can be used as an aid for planning by all member states.

The work group concluded with following: It is important to increase public participation, public awareness, create databases on risk assessment, and by doing so contribute towards further unification of the EU.

### ***5. Questions and results from discussion in the Plenary Discussion Session***

The purpose of the plenary discussion session was to create a forum for a debate of issues such as risk acceptance, communicating risk acceptance, factors that may influence our risk perception, and the role of the media in risk communication. The discussion commenced with a set of questions regarding these issues. A statement, that the need to implement risk reducing measures is often based on a comparison of the results from the risk assessment vs. predefined risk acceptance criteria, formed the background for the first questions. One should once again be aware that the summary of the discussion are the editors interpretation of the debate.

#### **Questions**

- whom should define the acceptance criteria, (e.g. politicians, interested parties the industry, risk experts)?
- on what basis should the criteria be defined (e.g. established practice, cost benefit analyses, ethical considerations)?

#### **Summary**

It was firstly suggested that politicians, by their very role, implicitly participate in defining the criteria for risk acceptance. They will however have to expect lobbying from different interest groups. On the other hand it was also pointed out that politicians will have to delegate the defining responsibility in this matter to a regulatory body. The politicians retain the obligation to accept or reject their recommendations.

Whether it is a regulatory body or not, it was argued that it will be difficult to set a standard for quantifying sources of risk. Quantifying risk on economical criteria or assigning a value to human life may not reflect risk accurately, since every crisis is unique. There is also a question of what to do if population groups are subject to several not too serious risk factors, that collectively makes a substantial threat. Based on these problems, it was suggested that defining risk criteria will be connected to what each country ethically considers to be a risk.

Opinions were then given on what should/could be the focus for risk reducing measures. Industrial- and environmental issues were brought forward as having long and solid tradition in connection to this. More focus should therefore be concentrated on how resources are used, other issues, the prevention of less extensive crises scenarios, how may the population protect themselves better and so on. The group generally asked for more participation on all levels.

It was lastly argued that reliable data pinpointing actual risk is the basis for deciding acceptable risk, as well as the basis for improving the assessment-, prevention-, preparedness-, response- and recovery elements of civil protection.

The participants were also posed the following questions:

### **Questions:**

- the news media coverage of issues related to risk/accident is a threat to «rational» risk management, (e.g. because the attention is drawn away from the important hazard sources, or because politicians are compelled to ad hoc decisions that can actually increase total risk)?
- or is the news media an important channel for lay persons to voice their concerns about risk exposure?

### **Summary:**

As a continuation of the previous topic, the discussion started out with a point of view that risk- and acceptance criteria often may be defined by the media. However, in their focus the media will follow their own agenda and ethics. That may not be rational in the sense a «risk manager» would approach risk issues.

The group was furthermore reminded of the European Union's guidelines for risks in the home, and was asked if these guidelines has had any implications in the member countries. Increased attention on home safety and letting the school system educate children about possible risks were measures taken in some countries. It was then argued that defining too many elements in the personal sphere as unacceptable risk, and give regulations to deal with this, may lead to a debate on government intrusion of personal freedom.

### **Further discussions:**

These were some of the few and brief opinions given on the last questions, since there was little time left for debating the issues more thoroughly. Further challenges in elaborating aspects of Risk Communication and Risk Acceptance may however be continued with the questions that the workshop did not have time to discuss. Those question are listed here for this reason.

Risk Assessment results can sometimes difficult for lay persons to understand. At same time the risk exposed group has a right to be informed, and explained how they should behave in an emergency situation.

- How should the wish to avoid anxiety and fare in the risk exposed group be balanced against the wish to inform the about the possibility of future accidents?
- What are efficient ways of informing lay persons about the probability/consequences of possible accident scenarios?

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Risk assessment/risk analyses frequently require technical and methodological expertise.

- Is this a threat to the risk-exposed (e.g. the civilian population) opportunity to participate in the decision process?
- Should risk assessments be left to the experts, or should the experts be obliged to include representatives from interested parties in the analysis group?

### 6. Suggestions for further work

As a follow up to this workshop the DCDEP and the organising committee will suggest following projects to be started under the Communities Action Program of Civil Protection (EU DGXI):

Cross-border research, development and production of following:

- A study with the goal to consider the need to establish common risk acceptance criteria in Europe.
- A guide-book/collection of best practice in risk assessment work in Europe (also consider to combine with the United Nations Program **APELL** - Awareness and Preparedness for Emergencies at Local Level.)
- Consider the possibilities for co-operation between industry, public authorities and insurance companies and other interested parties in developing the use of risk assessment.
- A guide-book showing the use of GIS (geographical information systems) as a follow up tool in risk assessment, with examples of experiences in different member states, also covering the field: the use of information tools to influence politicians and planners to consider and give more attention to risk, vulnerability and prevention in community planning.
- A book showing examples of different municipalities in different member states carrying out follow-up-procedures to risk assessment.
- A guide-book «how to inform the public about risks and hazards in the community»

## Part 2 enclosures

### *7. List of participants*

**PARTICIPANTS - EU WORKSHOP ON RISK ASSESSMENT  
ROYAL CHRISTIANIA HOTEL, OSLO,  
25<sup>TH</sup> TO 26<sup>TH</sup> NOVEMBER 1999**

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## **8. Program - Workshop on Risk Assessment**

### **Workshop on Risk Assessment Oslo 25 - 26 November 1999**

#### **Thursday 25<sup>th</sup> November**

Chairman: Mr. Svein Berbu, Director,  
The Norwegian Directorate for Civil Defence and Emergency Planning (DCDEP)

- 09.00 - 09.30    Registration of Participants
- 09.30 - 09.45    **Opening and Welcome**  
*Ms. Marit Stene Myrvåg, Director, DCDEP*
- 09.45 - 10.00    **Welcoming remarks on behalf of the EU Commission**  
*Mr. Ernst Schulte, Administrator, DG-XI - Civil Protection Unit*
- 10.00 - 10.15    **The Prevention Project**  
*Mr. Jukka Metso, Chief Engineer, Ministry of the Interior, Finland*
- 10.15 - 10.45    **Risk Assessment Procedures Used in Different EU- Countries, Conclusions from a Survey by the Finnish Environment Institute**  
*Ms. Harriet Lonka, Research Officer, FEI*
- 10.45 - 11.05    Break
- Session I: Experiences with Risk Assessment and its follow up procedures**
- 11.05 - 11.25    **Dimensional Planning and the use of Fire Brigades**  
*Mr. Anders Arnhus, Adviser, Directorate For Fire and Explosion Prevention, Norway*
- 11.25 - 11.45    **Risk Assessment as a Tool to Evaluate a Railway Safety Concept**  
*Mr. H. P. Plattner, State Fire Chief of Rheinland-Pfalz, Germany*
- 11.45 - 12.05    **Post Earthquake emergency damage and usability assessment of buildings**  
*Prof. S. Anagnostopoulos, University of Patras, Greece*
- 12.10 - 13.20    Lunch
- 13.20 - 13.40    **Risk Mapping for Swedish Communities: A Geographic Perspective for Planning and Decision Making for Risk Management**  
*Ms. Janet Edwards, Project Leader, and  
Mr. Mattias Strömngren, City Planner, Swedish Rescue Services Agency*
- 13.40 - 14.00    **Risk Mapping and the Cross Border Nature of Risk**  
*Mr. Nic M.J. Herzig, Chairman of the Commission for Public Safety of the EUREGIO Maas-Rhine project, the Netherlands*
- 14.00 - 14.20    **Portuguese System for Flood Warning and Surveillance**  
*Dr. Rui José Raposo Rodrigues, Head of Water Resources Department, Institute of Water, Portugal*

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- 14.20 - 14.40 **Dam Risk Management at Downstream Valleys - a NATO Integrated Project and Case Study**  
*Prof. A. Betâmio de Almeida, Technical University of Lisbon, Portugal*
- 14.40 - 15.00 **The Safety Chain Project**  
*Mr. Peter Dekker, Senior Policy Adviser,  
Ministry of the Interior, the Netherlands*
- 15.00 - 15.15 Break
- Risk** **Session II: Discussion Session on the Experiences With - and the Follow Up of Assessment**
- 15.15 - 16.30 **Working Groups**  
*Introductions by Mr. Svein Berbu, Director, DCDEP*
- 16.30 - 17.00 **Report from Working Groups and Close of day one**  
*Moderator: Mr. Svein Berbu, Director, DCDEP*
- 1800 Departure from the hotel to Frognerseteren Restaurant

## Friday 26<sup>th</sup> November

### **Session III: Acceptability and Management of Risk Analysis**

- 09.00 - 09.40 **Risk Communication and Risk Acceptance**  
*Mr. Arne Jarl Ringstad, Sr. Research Scientist, Rogaland  
Research, Norway*
- 09.40 - 10.20 **Quality Management of Risk Management Processes**  
*Mr. Stein Henriksen, Adviser, DCDEP*
- 10.20 - 10.40 Break
- 10.40 - 12.00 **Plenary Discussion Session**  
*Moderator: Mr. Svein Berbu, Director, DCDEP*
- 12.00 - 12.15 **Closure and Farewell**
- 12.30 Lunch

## ***Reading list***

### **DCDEP publications available in English:**

- Guidelines for municipal risk and vulnerability analyses (1995)
- Guidelines for Emergency Planning (1999)
- A guide to Information Preparedness (2000)
- Risk Assessment in Europe - A summary from the EU Workshop on Risk Assessment arranged in Oslo 25-26 November 1999 (2000)
- Risk Assessment in Europe - Part 2 - Lectures presented on the EU Workshop on Risk Assessment arranged in Oslo 25-26 November 1999 (2000). Available on DCDEP Internet site through year 2000.

### **Order a publication?**

The publications can be downloaded from the Internet at [www.dsb.no](http://www.dsb.no) (go to the English page).

The publications can also be ordered (as long we have them on stock), free of charge. State your name, address, requested number and title of the publication(s) you are interested in and send your request on fax.