



# Actes du colloque



26, 27, 28 Novembre 2008

November 26, 27, 28, 2008

“Des catastrophes du passé  
au défi du changement  
climatique en Europe”

“From past natural disasters  
to the challenge of climate  
change in Europe”

**Wednesday November 26<sup>th</sup> 2008**

## **Opening session**

**Welcome address by Laurent Michel,  
Director, Risk Prevention,  
French Ministry for Ecology, Energy,  
Sustainable Development  
and Land Use Planning (MEEDDAT)**

In his opening remarks, the Director set out the programme of the European conference on natural risk prevention entitled "From past disasters to the challenge of climate change in Europe", reminding the audience that this conference fits into the context of the French presidency of the EU and the various initiatives undertaken at the European level on climate, environment and risk prevention. He pointed out that this Conference was jointly organised by the Ministry and the French Association for Natural Disaster Prevention (Association Française pour la prévention des catastrophes naturelles or AFPCN), thereby illustrating perfectly the existing partnership between government institutions and the civil society.

This conference does not address the issue of climate change as such, but should be viewed as a natural entry point to addressing the topic of national policies for natural disaster prevention with an entire European outlook. The purpose being, for the coming two days and a half, to highlight emerging factors and responses to the development of a truly European culture of prevention.

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## **Address by Yves Dauge, Senator, Indre et Loire Department, and President AFPCN**

As the former Mayor of Chinon, and currently Senator in the Val de Loire region, an area particularly prone to flooding, Yves Dauge has first hand experience in managing natural disasters. In his role as President of the AFPCN, he calls for the development of closer dialogue among European countries in the area of natural risk prevention. The Association's aim is to integrate risk management into a citizenship culture through closer links between the civil society (companies, organisations, citizens), the local authorities and the State.

The French platform for natural risk reduction, that links MEEDDAT and the AFPCN, illustrates the alliance between public authorities and the civil society, and seeks to extend this partnership so as to spread out the concept of risk throughout as many actors as possible. The speaker welcomed the presence of EC representatives at the conference and highlighted that Europe's involvement in these discussions would bring legitimacy, content and maybe later on, possible resources to this issue due to the close inter-relation of the subject to the issue of land-use planning for disaster-prone territories.

As a Parliamentarian and elected local representative, Yves Dauge expressed his profound conviction that territorial planning is crucial. The latter should be undertaken as part of a wider perspective on territory, from the local level to the European scale, and by addressing the issue of risk as a priority. We must move away from small-scale thinking, the urge for immediate results and a short-term vision, as risks force us into considering the basic issues of anticipation and a much broader scale. In France, the local town planning laws that implements local level planning, and the large-scale territorial coherence approaches should increasingly be set into a risk reduction strategy that totally integrates land use planning and sustainable development aspects.

The speaker noted that the definition of vulnerability must henceforth be allied with the notion of resilience, a semantic shift that translates this desire to better address the risks as part of a global and positive strategy.

As a conclusion, Yves Dauge underlined the importance of enhancing public debate on the issue of risks : this debate requires historical knowledge of the risks as well as a good scientific knowledge. The State must bring to the attention of elected representatives and the general public a set of information that will fuel this public debate, thereby enabling the

collective definition of an acceptable and accepted level of risk, financial considerations included.

For example, it would be preferable for a road to flood once every ten years rather than to spend considerable sums in elevating that road. The risk is thus known and accepted. Public debate strengthens political decisions, said Yves Dauge. This compromise over an acceptable level of risk reached through public debate should allow decision-makers, be they Prefects or Mayors, to work in a more sound environment and to limit disputes or criminal liability/prosecutions.

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## **Address by Mme Nathalie Kosciusko Morizet, Secretary of State for Ecology**

After expressing appreciation to the Conference organisers and participants, Nathalie Kosciusko Morizet noted the crucial role this meeting would play during the French presidency of the EU in increasing exchanges, encouraging feedback on experiences, and taking part in the movement developing at the local and European level on the crucial issue of managing natural risk.

The AFPCN, frequently working in collaboration with the MMEEDDAT, has been the driving force behind this Europe-wide event, she said. This conference must represent a step in the wider international framework on preventing natural risks, at this key time when we must go beyond the known and the usual, and begin to move towards a far more integrated risk management process that considerably widens its focus.

The EC plans to announce during this conference the release of two upcoming communications, on the topics of prevention and support for developing countries. We look forward to hearing these.

This conference is one of a series of conferences that includes the Geneva meeting in June 2009 of the worldwide platform for the prevention of natural disasters, the aim of which is to draw up a summary of the four-year Hyogo declaration implementation process. Another conference on the topic of early warning was held recently in Aix-en-Provence. Nathalie Kosciusko Morizet confirmed the government's undertaking to develop a regional alert centre in France for tsunami risks in the Mediterranean. This centre will

be supported at the national level, but will operate within the framework of a consortium in which all our European neighbours will be invited to take part. It will concretise the policy of shared resources, objectives and aims that France is trying to implement.

Climate change represents a major challenge for Europe and calls for a revision of all our prevention policies ; this is illustrated by the title of our conference : "From past disasters to the challenge of climate change in Europe".

Goals on this issue are decisively European, including overseas territories that are more at risk of natural hazards, and have a global focus on approaches and analyses.

Climate change represents major challenges but also leaves us very uncertain about the exact nature of these effects. Climate change also causes us to revolutionise our approaches and to shift to a whole new scale. Coping is an issue that was very present during the Bali conference on climate change and is also the theme for this conference.

Finally, citing past disasters reminds us that we have overcome them and encourages us to remain vigilant. The concepts of prevention and resilience are old ones, even if they were not expressed in the same terms in the past.

MEEDDAT aims to be able to draw conclusions from past disasters through the use of feedback sessions, extending the practice of feedback as another tool for prevention and communication with populations. Culture is a key component of prevention and a way to improve resilience.

Community initiatives must be galvanised to respond to natural risks such as flooding, drought and forest fires; they must extend to Southern countries in order to help them strengthen their resilience in the face of climate change.

Since the Grenelle Environmental Round Table, the trend has been to unite is to ally all actors and harness all energies in responding to climate change. What unites the State to local authorities, economic partners, NGOs and the population, beyond the technical steps deployed in addressing risk management and resilience, is sharing of the culture of risk.

This conference will cover the issue of national platforms, whose creation is encouraged by the International Strategy on Disaster Reduction (ISDR). These national platforms were gathered together in 2007 into an open European network whose founding members were the German DKKV, the Swiss Planat, and the French platform.

The Secretary of State went on to say that the European network of national risk prevention platforms must be both mobilised and mobilisable around the issue of coping. The way in which these platforms will group together is crucial, and the links that will be created between them must be used on an ongoing basis as tools for sharing, for all actors likely to contribute to managing natural risks.

Nathalie Kosciusko Morizet acknowledged the proactive efficiency of the German platform, and more specifically the role of Mrs Schwaetzer, who currently chairs the network. France will take over this role within the next few months for a two-year term ; MEEDDAT is already getting ready to match the efficiency of the German effort and to continue widening the network.

This conference may be the opportunity for some to express their desire to take part in this widening process by joining the network ; they can be assured of a very warm welcome.

The Secretary of State for Ecology wishes for this conference to further the involvement of the Czech and Swedish platforms, countries that will take over the EU presidency over the coming semesters. Some Commission communications will be released during the Czech presidency, along with the White Paper on climate change and the work that will flow from it.

Before handing over the podium to the EC representatives, Nathalie Kosciusko Morizet reminded the floor that Laurent Michel, chairman of this opening session, is the newly appointed director of risk prevention at the ministry, recently re-organised around the concept sustainable development. This unit will adopt a very wide approach to risk ; this will enable it to use the cross-disciplinary approach also favoured in the European and international approaches.

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## **Speeches from European Commission representatives :**

### **Pia Bucella, Communication Director, Legal Affairs and Civil Protection, Directorate-General for the Environment**

This conference has been organised at an ideal time, began Pia Bucella; although Europe has always faced natural disasters, their number and intensity have increased over the last few years. This new state of affairs has motivated Europe to act and reflect along with other member States on how best to prevent them. The EC has therefore embarked on a process that aims to include assessment, prediction and prevention of disaster risks, as well as phases of preparation, alleviation and mitigation of effects. This approach calls on all the policies and instruments available to the Commission and Member States, explained the representative in her introduction, who covered three main issues in her address :

- 1- How to prevent disaster, and what added value does the Union bring ?
- 2- How to act internationally in a way that overarches the Union ?
- 3- How to include this response into the challenges represented by climate change ?

1- Risk prevention is a topic that falls first and foremost under the control of Member States. It is very closely related to land use and land occupancy policies, two areas over which Member states have retained full control. In this context, what added value can be gained from the EU in terms of prevention ?

Here are a few examples :

A directive (community law) was passed to prevent and manage flooding risks, a problem that transcends political boundaries.

Forest fires in Portugal and Greece that devastated entire regions, creating economic, human and ecological disaster, sharply demonstrated the need to develop a global approach on a European scale in order to prevent and respond to large-scale disasters that overcome national capacities to respond to them.

The European approach is a wide and far-reaching one covering many aspects- reduction, preparedness, and reconstruction responses, making use of the specific and general instruments available. Whilst the EU has, in the area of natural disasters, established an

arsenal of response and preparation measures, it plans to spend more time on reduction, particularly via the creation of a Community-wide strategy for the reduction of natural and human disasters. An in-depth consultation process is already underway on the issue, bringing together all actors involved including the general public, and the Commission is finalising its proposals for adopting a European approach to risk reduction.

This communication will explore several courses of action:

- increasing knowledge of disasters
- drawing up a global analysis of European risks by using studies carried out by Member States; the aim is not to reinvent what has already been implemented at national level ;
- encouraging best practise already deployed in the States with the most developed programmes on the issue.
- gather political actors into the same reduction-preparedness-response cycle as currently the notion of prevention is separate from those of preparation and response.

2- There are already several European financial instruments that are able to contribute to this risk management policy, explained Pia Bucella : the rural development fund, the civil protection financial instrument, and the AF+ -an instrument dedicated to the environment, the regional fund, the cohesion fund that will allocate 6.5 billion Euros to risk reduction between now and 2013. Furthermore, the climate package currently under discussion in twenty-seven Member States anticipates that part of the large amount of resources generated by the CO2 exchange system should be allocated to coping programmes.

The second course of action is to act internationally, in support of the action framework established during the Hyogo talks four years ago. The tsunami and the earthquakes in China reminded us that disasters are not solely limited to the EU, and that developing countries are on the whole a lot more vulnerable to such events. The EU is by a long way the largest contributor in the world to development aid, she noted. It has a great deal of experience in disaster reduction, but lacks a realistic strategic framework to direct its aid to developing countries in a coherent and coordinated fashion.

The Commission is preparing and getting ready to release early in 2009 a communication on the European strategy on risk reduction in developing countries. This communication will include development and humanitarian aid cooperation, in order to contribute to sustainable development and the eradication of poverty.

3- We must cope with the increasing numbers of disasters linked to climate change. Coping is a complementary and major response in the European policy on reducing greenhouse gas emissions. We must learn to live with climate change risks : they can be mitigated

but not entirely prevented. Countries set acceptable levels of national risk by analysing the risks and costs flowing from national risk reduction policies.

Following the consultation processes launched by the Green Paper on coping with climate change, a White Paper on coping has been drafted by the Commission and will soon be made public. The EU is a particularly appropriate framework since climate change transcends national and State boundaries, especially since the effects of climate change vary from one area to another.

The coping process will require solidarity between States if the poorer and more disadvantaged areas of the Union and those more frequently affected by climate change are to be able to take the required coping measures.

The measures outlined in the White Paper are concrete, and the aim will be to increase the knowledge base in order to evidence the measures that are adopted.

Other European policies in which adaptation must be addressed include agricultural, forestry, fishing, energy, and biodiversity policies, etc... Increased cooperation will also be necessary between Member States on work carried out by the US Convention on climate change.

The White Paper will complement a communication drawn up for the Copenhagen climate conference in December.

This concludes the measures to be taken by the Commission over the next few months.

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## **Manuela Soares, Director for Environmental Research, EC Research Directorate-General**

There has always been natural disasters, from Pompei to Hurricane Katrina, and human societies have always had to cope with them. Climate change seems to exacerbate climate risks however, and poses new challenges for the future. Are we ready to respond to these challenges ? What new extreme events shall we face in the future ? The scientific work undertaken by the Intergovernmental Panel on Climate Change (IPCC) should help us better understand these climate phenomena in our search for response strategies, said the speaker.

According to the IPCC report, climate risks in Europe will translate in an increase in winter flooding in coastal areas, flash flooding, increased drought in Mediterranean regions, landslides and mudslides in mountainous areas, etc...

Globally, the Hyogo declaration and its 2005-2015 action plan are helping to raise the awareness of governments on the need for action at every level, including increasing knowledge.

The International Council for Science (ICSU) launched a major research programme on natural disasters on the 23<sup>rd</sup> of October 2008. All these initiatives highlight the need for increased cooperation. Scientific research must be prioritised in order to have the information required to better anticipate natural disasters.

In this broad context, what themes govern European research on climate change issues ? What efforts are being deployed and what activities are undertaken ?

The Director of Environmental Research explained that European framework programmes are important financial tools in supporting research and technological development in various key sectors. They crucially increase cooperation both between European countries and internationally with other international countries, organisations and programmes.

The 7<sup>th</sup> framework programme on technology and demonstration R&D activities (2007-2013) enables major issues for society to be tackled via specific programmes.

The basic climate change issues are tackled in the environmental research programme managed by Manuela Soares, in order to outline the responses required. In order to understand climate change challenges, we must first develop a knowledge base and the understanding of the complexity of the issue of climate change in the interactions with the earth's ecosystem, and the effects of climate change on extreme events such as heat waves, flash flooding, storms... European research gleans a great deal of information from its models on climate changes at regional and global levels. Other studies cover the effects of climate change on the water cycle and water resources.

Developing an adequate monitoring programme will lead to a better detection of climate variabilities and better, higher quality information useful for scientists, industrialists and decision-makers. This information will be supplied by the Global Monitoring for Environment and Security (GMES) project.

The costs of climate change may well be much higher than the spending allocated to reducing greenhouse gases. The issue then would be to identify efficient, cost-effective responses.

We must also develop, in coordination with industry, technological options that are able to support political action in order to move towards a more sustainable economy, in a low carbon emission society.

We must also act on behaviour ; movements towards sustainable development and strengthening synergies between pure science programmes and social science will be crucial in understanding diversity and acting accordingly.

As far as European research on natural risks -geological, storms, flooding, fires, drought- is concerned, the environmental programme is currently studying hazards in order to better assess risks, to reduce it via early warning systems, risk mapping, or mitigation steps.

It also supports the European policies.

The 5<sup>th</sup> and 6<sup>th</sup> framework programmes respectively funded programmes to the tune of 48 and 58 million euros ; the 7<sup>th</sup> framework programme currently underway is providing comparable funding, but future plans are for more ambitious investment.

A multidisciplinary approach to funding was preferred in order to maximise added value, noted the speaker, citing a project studying the assessment and integrated management of the European flood risk : the ERA-Net CRUE project was set up in order to improve cooperation over and coordination of research activities within the Member States taking part in the flood project.

The point of the 7<sup>th</sup> framework programme is to better integrate risk management and to approach the problem of multiple risks in some areas faced with a variety of hazards that may occur concurrently. The socioeconomic dimension is also represented in the programme in order to improve synergies with social sciences.

Annual proposals fall into four main categories :

- assessment of the hazard and its triggering factors, monitoring of events, early warning system ;
- assessment of vulnerability and effects on society (physical, economic, social, environmental and systemic dimensions) ;
- risk assessment and integrated risk management ;
- multiple risk assessment and mitigation strategies, analysis of cumulative effects.

There are other programmes that complement the Environmental programme : for example the Infrastructure programme that takes part in the Europe-wide

sharing of major equipment, or networked projects on the risks of seismic activity.

The speaker acknowledged that research programmes still require improvement in the communication of their scientific results to political actors so that they may include them in their decision-making.

Manuela Soares concluded her speech by highlighting the Green Paper passed by the Commission in April 2007 : “The European research area : new perspectives”, a document that outlined the major axes of progress achieved since 2000, and studied the current situation and the challenges ahead. A wide consultation process ensued throughout Europe until April 2008. The Commission then set out five specific new initiatives to facilitate intellectual property management in transfers of knowledge, improve the career path and mobility of researchers, afford a legal framework to European research infrastructures, move towards a joint European research programme, and define a strategy for international scientific cooperation. This process aims to achieve a consensus by end of 2009 between the Commission and Member States on the subject of European research area governance.

On the subject of natural disaster in Europe, the creation of a European strategic plan would definitely enable priorities to be drawn up and for tasks to be shared between the European and national levels, thereby contributing to increasing resilience within the whole of European society..

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**Régis Koetschet,  
Director of Development Policies (DGCID),  
French Ministry for Foreign  
and European Affairs (MAEE)**

Régis Koetschet brings to the conference the MAEE perspective on reducing natural risks ; he sets out MAEE actions, particularly via assistance to developing countries. In parallel to actions carried out in Brussels, France exercises a policy of support and cooperation towards Southern countries on projects aiming to reduce and prevent natural risk.

Recently Ambassador to Afghanistan, Régis Koetschet explained that extremely high levels of natural risk should be added to the political risks in that country.

Issues of risk are now fully integrated into international life. During the French presidency of the EU, development activities were focussed on climate change, urban development, food safety, migration and development : all these issues are connected to the management of natural risks.

The new information technologies have led to rapid changes in our perception of vulnerability ; security notions shed a different light on these issues. As far as these risks are concerned, we must leave behind the theoretical and enter the realms of the concrete and the real. For developing countries, the economic and social costs of natural disaster are considerable. It is crucial to work towards reducing the various types of risk.

France, along with its international partners, is reflecting on precarious situations in order to understand how to adapt aid to post-crisis situations, and political and administrative instability, by means of a vulnerability table in which natural risk plays a role. Events in Burma and Haiti demonstrate that vulnerabilities may be co-dependent : natural disasters merely add to the instability of the country.

The Directorate of Development Policies at the Foreign Affairs Ministry (DGCID) believes that there is therefore a need to establish reduction and mitigation measures in order to limit the effects of natural disaster in developing countries.

At the UN Margareta Wahlström was nominated by Secretary General Ban Ki-Moon as his deputy : her role is exclusively devoted to disaster risk reduction. The World Bank meanwhile has together with the ISDR and an emergency response fund launched a global facility for reducing disaster risks.

As far as Europe is concerned, two communications are expected during the Czech presidency, which will therefore play a crucial role in this process.

In the field of international diplomacy, the positioning of this issue must be carefully established because it acts at the preventative, post-crisis, emergency, development and humanitarian levels. A reflection process must be developed at institutional level in order to find ways of meeting these needs.

France supports and participates in these initiatives : as regards the Hyogo Framework and the Stockholm action plan, France supports the activities of the secretariat responsible for implementing the international strategy for disaster reduction (ISDR) and its role in coordinating with UN agencies. France provides technical assistance and financial support to this secretariat, said the speaker.

The directorate-general for international cooperation and development is also involved in developing natural risk reduction operations on a bi-lateral basis through civil security projects in countries such as Burkina Faso, Cameroon, and North African countries. These programmes can involve managing the locust risk in Western Africa, support for the regional drought warning system in the Sahel, support for African weather organisations and for climate change observation systems. The aim is to help southern countries to be better prepared and equipped to respond to major risks.

Actions are also underway to implement a decentralised cooperation scheme on risk reduction. Various regional authorities are deploying cooperation actions on civil security and protection against natural hazards. The French Red Cross is carrying out various training and awareness-raising activities.

Reducing natural risks involves every one of us, stated Régis Koetschet. Scientific activities complement activities implemented by the State and public authorities. There are also various multi-agency activities : civil security, military powers, NGOs, fire fighters, etc... that entail the need for an intervention strategy on risk and disaster reduction in developing countries. An inter-ministerial working party made up of all these various actors is currently drafting this strategy, for which a draft document has already been produced.

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**Bernard Delaeplancque,  
deputy director for risk management,  
Civil Protection department,  
French Ministry of the Interior, Overseas  
and Regional Territories (MIOMCT)**

In his introduction, Bernard DelaplanqueDeleplancque, as Interior Ministry and emergency services representative, reminded the floor that a Europe-wide response was required in handling disasters. The French presidency of the EU was particularly active on the issue of civil protection. European activities are focussed on two courses of action; the creation by the Council of a community-wide civil protection mechanism, and the Council decision to set up a financial instrument to fund civil protection, as was stated by Pia Bucella in her speech. These initiatives, which are undeniably a sign of progress, contribute to reinforcing solidarity between Member States by progressively federating civil protection resources across Europe. Thirteen modules have already been defined as a response to the main risks : floods, forest fires, healthcare, etc... Joint actions aim to broaden the field

of intervention of the MIC (Monitoring Information Centre) beyond a purely operational response and the regular dispatch of reconnaissance and assessment teams in the event of disaster; this is carried out particularly by means of draft hazard scenarios by improving prediction and early warning systems.

The conference held in October 2008 in Aix-en-Provence under the aegis of the French EU presidency covered the issue of early warning system for large scale risks. The aim was to mobilize across Europe all scientific knowledge and resources required to develop effective tools from bottom-up alerts (analysis, risk assessment) to top-down alerts (deadlines, areas affected, behaviour), explained the Civil Security Directorate representative.

The notice for a tsunami warning in the Mediterranean is 15 to 20 minutes ; for a storm flood it is around one hour; for flooding in plains, the warning notice may stretch from a few hours to several days.

It would be recommended, to rely on various environmental monitoring tools during major disasters, particularly the European satellite GMES, that would enable a geographically global approach to be used.

In the face of the rise in climate risks, we must be able to guarantee every citizen immediate warning, emergency rations, damage assessment, whilst individually encouraging them to get involved in mitigating and managing the event. Mobilizing scientific and technical approaches is crucial in assessing the hazard, developing detection systems, assessing vulnerabilities and developing Europe-wide communication and awareness-raising policies, concluded the speaker.

Actors working in prevention and emergency relief, and experts in natural risks must find a way of exchange knowledge and define a common culture that enables them to develop a balanced public risk management policy on disaster risk reduction, protection, intervention and rehabilitation, concluded Bernard Deleplancque.

**Plenary session** : from the past to the future,  
European challenges in reducing natural risks  
in the context of climate change

**Chairperson : François Ewald, philosopher and legal historian, professor at the Conservatoire National des Arts et Metiers & Riccardo Petrella, European Commission councillor, Professor of Economics at the University of Louvain**

This session involving European experts and researchers will break down into three main themes : geographical, historical and prospective in an approach that will therefore be both retrospective and prospective, explained François Ewald.

We must be able to detect the climate change related differences in current disasters, as compared to past disasters. Our ability to forecast or anticipate these risks, even if reducing them is still difficult, is a very new phenomenon in our societies.

Does the multiplication of these little natural disasters preface a catastrophe of enormous proportions able to bring about the extinction of species and even the disappearance of humanity itself from this planet, asked François Ewald, who noted that according to the philosopher J-P Dupuy, thinking through disasters is the best way to arm oneself against it.

One ambiguity subsists however the true issue : natural climate disasters can be disastrous, affecting economic assets created by human activities. Re-insurers note that human and economic activity has a tendency to be centred on areas that are particularly prone to disaster, such as Florida. Humankind is therefore familiar with natural risk, but there is a chance that climate change will increase the scale of these disasters.

Insurance was invented in order to allow humans to live with the risk of disaster. There is a debate process between insurance and prevention, due to the fact that being insured in itself reduces the incentives to prevent.

The question is henceforth whether allowing areas threatened by climate change –flooding, drought, etc- to retain their value is an act of solidarity, or whether a range of value should

be actively introduced to reflect pro rata the risks identified by mapping ; such a policy would cause assets to lose value according to their level of exposure to risk. Should we also implement a land use policy by actively managing value in these areas, or by coping with the risks ? Past and future experience should enable us to answer these questions, stated François Ewald by way of introduction to the first plenary session.

Riccardo Petrella took over the podium, firstly noting that the European environmental policy was, along with agriculture and commerce, part of a body of joint policies that have marked the path to European integration. The paradox is that this policy also highlights the enormous diversity within Europe, with such very diverse environments : Mediterranean Europe, Northern Europe, Eastern Europe, by their very nature these differences fragment the perception of climate risks. He noted however that some progress had been made in European environmental policy, particularly on the legal front with the implementation of a framework directive on water ; this is now a central reference document for all Member States' policies.

European failing on the subject is not a lack of knowledge of the risks or challenges, nor of the solutions put forward (technical, financial, legal), but a failing of European policy that renders the knowledge useless. The fundamental challenge in risk reduction is to bring about a truly European policy. It is the existence of national sovereignty, and competitiveness between countries that exacerbates the joint policy failing. The speaker lamented the competitiveness in operation between nations, even on issues of risk management and reduction. Europe's weakness is built into its political, economic, social and scientific ruling classes, far too imbued with the cult of national sovereignty and territory on the world markets. The future will depend on this solving issue, stated the EC councillor.

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**Christian van der Motten,  
president of the Belgian national geographical  
committee, Professor at the Brussels  
Free University**

The speaker outlined a summary of the environmental challenges in the different parts of European Community, examining the initial potential of the area, then overlaying the human pressures, along with the new threats that have appeared due to climate change and the new ways of consuming, and land use ; finally he outlined the political and economic responses that must be brought to these environmental challenges.

In order to simplify his presentation, the speaker divided Europe up into six main areas : Mediterranean Europe, North Western Europe (ie British Isles, Benelux countries, Germany, France), Alpine Europe (Switzerland, Austria), Northern Europe, Central Eastern Europe, and Balkan Europe (Romania, Bulgaria).

Europeans' ecological footprint is far smaller than that of the Americans; Europe nevertheless emits 15 to 20% of the world total of CO<sub>2</sub>, ie roughly as much as China.

The greatest ecological potential, before human pressures have been factored in, is found in North-Western European countries that have a humid temperate climate; the lowest is in Northern Europe and Mediterranean Europe (due to water shortages) and in mountainous areas.

Human pressures are closely linked to population density : the United Kingdom, Benelux countries and Germany have the largest loads to bear from this point of view. Another human pressure is that economic and industrial development can herald an increase in CO<sub>2</sub> per km<sup>2</sup> and a raise in the percentage of ecological footprint versus biocapacity. Mediterranean Europe has the worst results by a long stretch, with an ecological footprint four times higher than its biocapacity. Only Northern Europe achieves a footprint lower than its biocapacity, due to its low population density. Poor and mediocre air quality betray a large-scale recourse to fossil fuels : this is the case in Mediterranean and Balkan countries.

Only in Northern Europe would climate change be a positive development; every other area has witnessed an increase in the number of storms, floods (British Isles, Benelux, France, Germany) and widespread drought and forest fires.

Major technological and urban threats are more pronounced in the most densely populated, most artificial and most concreted over parts of Europe (coasts and rivers). Here again, Northern Europe is the least affected, unlike Mediterranean Europe that remains, as is too often the case in these lists, the dirty man of Europe.

Responses to environmental challenges are political, as strong or as weak as individual countries' ecological and technological policies (management of waste, used water etc...). Europe is improving overall even we are still far from achieving the Kyoto objectives, already inadequate ; the exception again is Mediterranean Europe where indicators show a deterioration.

Christian van der Motten noted that North-Western Europe, with its heavy human and environmental loads, has begun to deal with its environmental problems ; some are still

not being tackled, such as land use, with the relentless concreting over of land. Alpine Europe, with its heavy natural constraints, is dealing well overall with its environmental problems. Northern Europe is the only part of the EU with a positive ecological balance. Mediterranean Europe, with its fragile natural environment, will doubtless be the worst affected by climate change. Responses are inadequate to deal with environmental challenges and to reverse trends.

The new EU Member States are not producing adequate political and technological responses to properly address their disastrous environmental heritage. Progress in emissions reductions are mainly due to a cessation of Soviet heavy industrial activity, and not to an improvement in environmental responses.

In conclusion the speaker estimated that the handling of environmental risks and impacts is progressing overall in the most developed European countries. On the issue of risk production however, progress is largely unsatisfactory. The purely economic angle is set against land use, environmental and agricultural policies... In the future, we must tackle the source of risk production, by making the economy more and more subject to environmental constraints.

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## **René Favier, Professor of Modern History, Grenoble University**

René Favier, whose specialist area is the social history of disaster, attempted to introduce some perspective into modern climate change debate by comparing it to historical debates, specifically those of the 18<sup>th</sup> century, a century that unusually marked by disaster : multiple floods on all the main rivers, the unusually cold winter of 1709, storm of 13<sup>th</sup> July 1788, etc... Even at the time, the feeling was that these were exceptional times, “unheard of in human memory”. In truth, people of the time accepted and endured these disasters without fatalism but with very rational and reactive behaviours.

It is important to access past experience when considering climate change issues; as far back as 1701, the French Duke St Simon had noticed irregularities in the seasons. Climate disaster arises firstly as the result of a storm, ie an irregularity. Weather observers of the time elected firstly to set down rules for climate behaviour by gathering a large amount of observational data in order to outline the various climate types. In the 18<sup>th</sup> century, the word climate was defined in the first instance as a geographical area, an area of the globe

contained between two parallels. Climate comparison is therefore the comparison of one zone with another. There was no questioning of the fact that climates were stationary ; for this reason, during the mini-ice age, during which glaciers advanced, the predominant notion was not one of climate cooling but of a continual and progressive accumulation of ice in the coldest areas. Exceptional years were not seen as an irregularity but bore witness to an inadequate knowledge of natural laws.

Was it nevertheless possible to conceive of climate change at the time ? A number of theories were evolving during the 18<sup>th</sup> century on the idea that human action could influence climate ; these mainly concerned deforestation. First Montaigne, then Buffon asked questions about the interactions between human action and climate warming.

The speaker quoted a decision by the Grenoble Parliament in 1651, the day after a terrible flood : this forbade the cutting and deforestation of woods, actions deemed to have caused the flood by removing the trees that had formerly retained the water. During the 19<sup>th</sup> century, engineers added that effects might not be merely localised but could be much wider-reaching.

René Favier concluded his presentation by noting that physicists confirmed during the course of the 19<sup>th</sup> century that the effects of human action were not necessarily localised but may have wider-reaching effects. The Swedish scientist Arrhenius was the first, on the cusp of the 20<sup>th</sup> century, to identify that greenhouse effect was due to the carbon cycle, and to link it to the use of fossil fuels. Climate change was at the time perceived as a promising a glorious future, with gentler climate conditions enabling even cold areas to grow better crops, for the good of an expanding population.

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## **Henri Decamps, Emeritus Research Director at the CNRS**

As an ecologist and naturalist, Henri Decamps manages a working group at the Académie des Sciences on the vulnerability of ecosystems to extreme climate events. He focussed his presentation on the issue of coping with extreme climate events, inasmuch as some, such as the 2003 heat wave, are harbingers of future trends on a warmer planet. He firstly reminded the floor that extreme events are characteristic of series of events, in which there is a relationship between the largest and a typical event in the series. He then set extreme climate events back into their historical context in a geological time frame,

and pointed out that since the Cambrian Era, life has evolved, driven by five cataclysmic events that nearly wiped out the planet. This history of life on Earth is essentially driven by a series of challenges from extreme and catastrophic events. For example, the acidification of the seas brought about the extinction of half of the living species on Earth at the end of the Triassic period ; the shift eleven thousand years ago towards forest and tundra of the great grassy plains of Northern Europe brought about the disappearance of woolly mammoths.

To state that a species is adapted to life in a particular environment means that this environment acted on the ancestors of that species and caused them to evolve by natural selection, explained Henri Decamps. A species retains its capacity to survive in an environment as long as the variability of that environment remains within tested limits. Questions may then be asked about the ability of species to adapt in the face of hitherto unknown catastrophic events ; these represented major shifts. According to some specialists such as Stephen Gould, eco systems have survived catastrophic events in the past more by chance than by adaptation. According to others, such as Geerat Vermeij, adapting to frequent events that have already been experienced predisposes to being able to adapt to hitherto unknown catastrophic events. These two viewpoints are probably not incompatible with each other, but the second one encourages us to take advantage of normal events in developing longer-term solutions to future extreme events- by using the calm between storms so to speak, and by strengthening our capacities for adaptation and reduction (or adaptation and mitigation)- this integration is the basis of the AFPCN thought process.

The speaker continued his presentation by asking questions on the possibility of developing coping parameters to climate change inspired by the structures of living systems that have had to face extreme climate events. Bio-mimicry for example encourages us to take inspiration from nature and to privilege innovation and creativity ; this is based on the idea that nature favours cooperation, uses only the energy it needs, makes the most of diversity and uses local expertise, and that imitating natural processes can contribute to finding solutions to climate change problems. Similarly, other biologists suggest using nature for inspiration in order to maintain security in an unpredictable, complex and dangerous world, and to respond to the most present threats of by world terrorism, the emergence of infectious disease and natural disasters.

Henri Decamps examined two living system organisational structures, at the whole population and community levels. The characteristics of a system that enable it to face a sudden shift in its living environment may be characterised by redundancy, modularity, flexibility, speed, suppleness and semi-autonomy- all these characteristics increase resilience, including in human societies. The speaker noted however that each of these

characteristics has a cost, and that their application to human society may not be automatic- he called this the Human Exception.

As humans we are alone in dealing with the climate change for which we are partly jointly responsible. We know what the consequences might be of an ever-warmer world, and we know that there is still time to choose alternative scenarios from those predicted by the models. The speaker urged the floor to read two recently published books, should they need more convincing : “Six Degrees” by Mark Lynas, and “The Hot Topic” by Gabrielle Walker and Sir David King. These two works presented two key questions : “How to reduce the fear of the unpredictable ?” and “How to conciliate lucidity and hope, the two inseparable faces of the human exception ?” According to Henri Decamps, science represents an answer to these questions if it is part of culture, takes part in it and remain attentive to ethical questions. Ethics remains at the heart of the human exception, and urges us to leave no-one behind, concluded the speaker.

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## **Thierry Gaudin, founding president of Prospective 2100**

The problem of foresight is not so much accuracy in its predictions but to be heeded, stated Thierry Gaudin in his preamble. Who is heeding together scientific prospective studies warning of climate change ? This is the issue raised by the futurologist, who quoted a study by Jared Diamond, “Collapse : How Societies Choose to Fail or Succeed”, and the work of Alvin Toffler, another well-known global futurist who predicted the arrival of a knowledge-based, post-industrial society, focused on information technologies.

Structures based around nation States and old-fashioned centralised systems waste a large part of the new efficiency contributed by the new technologies.

In conjunction with Prospective 2100, Thierry Gaudin will soon present to the Club of Rome a report for the EC Research directorate general on the world in 2025. Sustainable development figures as an impossible oxymoron. “Sustainable society” may be allowable as a term. Prospective 2100 prefers the term Garden Planet : a gardener is a guardian of nature and takes pleasure in cultivating his or her garden. There is still of lot of work to do on changing our perspective on the economy and society as a whole, and broadening the concept to all life-forms not just humankind. Species are becoming extinct faster since the start of the industrial era, stated the speaker, whose personal opinion is that man should not spared this fate either.

Einstein predicted that humankind would not last long after the extinction of bees, as we all form part of the same system and need other species in order to survive.

A slight rise in temperatures in the near future would not be a problem for humans used to temperature changes, but our entire world vision may be overturned between now and 2025, threatening the existence of quite a few existing institutional organisations.

Is global warming necessarily a bad thing ? The Swedish scientist Arrhenius saw it in a very favourable light in his country. The effects will evidently not be the same in all parts of the world; differences will be far more complex than a simple north/south divide. The issue of migration will be crucial in the future : in the event of a rise in sea levels caused by melting of the Greenland and Antarctica ice caps, the OECD estimates that there will be more than 150 million climate refugees.

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**Conclusion from Riccardo Petrella,  
EC councillor, Professor of Economics  
in the University of Louvain**

By way of summary, Riccardo Petrella put a few thoughts to the floor:

If the GIEC theories on global warming are realised, nearly 60% of the world's population, or 5 billion people, will by 2032 live in areas with insufficient water ; this means that they will lack the most basic element for life. These simple figures are enough in themselves to cause us to tackle head-on the issue of global warming.

In the coming decades, European history will be overshadowed by significant tensions between the various visions of the world; these will be divided between on the one hand those in favour of a privatisation of the world's destiny in tackling vulnerabilities and threats, by strength and personal security, with the planet falling under the grip of domination and appropriation by the strongest; and on the other hand by the proponents of res publica, those who feel that earth, water and air are assets jointly owned by all of humankind. The speaker set technocratic oligarchies currently focussed around corporations and state structures that dominate and dictate their standards to the rest of the world, against joint construction approaches. Europe seems to favour asymmetrical adaptive security solutions, but it falls to leaders to encourage a move towards a more open approach, concluded Riccard Petrella, closing the first day's proceedings.

**Thursday November 27th**

## **National actions and cooperation in Europe**

**Chair : Mme Irmgard Schwaetzer,  
president of the German platform (DKKV)**

### **Session 1**

**John Prescott, former deputy Prime Minister  
of Great Britain, MP in the House of Commons,  
Great Britain.**

The British MP, congratulating France for organising this conference, reminded the floor in his opening address of the resistance from parts of the world, noted that recent scientific studies showed climate change and natural disaster to be two sides of the same coin. A conference like this one, organised by the Ecology Ministry, had a duty to take into account both aspects.

Having been present at the Kyoto talks as European representative, John Prescott reminded the resistance from part of the world, notably from the Americans, to the embarrassing reality of global warming. Because the Kyoto agreement involved only developed countries, the US, Australia and Canada refused to take part in it. Of the fifteen European nations who participated in it, only four countries (France, Great Britain, Sweden and Germany) actually signed up to it, and set themselves objectives. Even in Europe, the poorer nations (Eastern countries) are more likely to achieve their objectives than the richer countries. The second Kyoto agreement, planned for the end of 2009 in Copenhagen, aims very candidly to turn up the pressure.

Climate change, natural disaster and risk management are interdependent; this is the public's perception.

In his role as reporter rapporteur to the Council of Europe, John Prescott will present a report in June 2009 ; he fears already that negotiations may become run into difficulties and that agreement may not be achieved. Europe is in an ideal position to wield a lot of influence over Kyoto principles : every country, especially the richer ones, must share the burden. The speaker stated his view that without Europe, Kyoto would not succeed as it does not have the support of the United States. The 450 million Europeans have a role to play, and influence to use, in ensuring that the link between climate change and natural disaster is not overlooked. The speaker expressed his hope that an agreement would be reached within the next six months ; in order to ensure sustainable development, Kyoto must be respected, he concluded.

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## **Irmgard Schwaetzer, president of the German platform, DKKV**

Irmgard Schwatezer, who heads both the German platform and European rail network, declared in her introduction her intention to give a summary of the characteristics and functions of these two national platforms, as yesterday's speeches demonstrated how little known they remain.

UN member States were invited, as part of the International Strategy for Disaster Reduction (ISDR), to set up national platforms to handle this specific issue. These platforms are based on the understanding and cooperation over reduction of all the actors involved : governmental agencies, ministries, institutes, NGOs, researchers, civil society representatives, private sector and media representatives. These national platforms represent meeting places in which information may be exchanged between all those involved. The ideal setup would be for the national platform not to be run by a ministry, but to be a joint effort from all involved parties : its role should be to gather and coordinate all the efforts being made in reducing natural disaster at the regional, national and international levels.

Some European national platforms have already met as part of a network that includes France, the Czech Republic, Germany, and Switzerland, explained the speaker who currently chairs it.

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## **Dr Jean-Jacques Wagner, Honorary Professor, expert in natural risks, PLANAT (Switzerland)**

Set up by the federal council in 1997, the national “natural dangers” platform PLANAT has undertaken to support strategically an improved natural risk reduction programme for the whole of Switzerland. Set up as an extra-parliamentary commission, it aims to encourage change on issues of natural dangers, by shifting from a purely defensive approach to a real risk management approach. The PLANAT board is made up of twenty specialists from every area of Switzerland. A global thought process and local action underlie the philosophy the risk management platform.

As far as climate change is concerned, the average annual temperature has risen, particularly in the north of the country, since the beginning of the systematic data gathering process in 1864. Is the heavy increase in flooding in Switzerland due to climate change, or to changes by man to the courses of rivers and waterways, asked the speaker. The result nonetheless is that that due to climate warming, rain will be heavier in winter and much lighter in summer.

Climate change is a worldwide problem that Switzerland is already taking into account, by taking part internationally in reducing CO2 emissions and in reducing the effects of hydrological and meteorological natural disasters.

Jean-Jacques Wagner expressed his desire to see dialogue strengthened between climatologists and those working to reduce the effects of natural disaster. Furthermore, if civil society is to be encouraged to take more part in the process, a collective awareness of the need to reduce CO2 emissions and better anticipate natural disaster is crucial.

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## **Dr Yvan Obrusnik, director of the hydrometeorology institute, president of the national risk reduction committee for the Czech Republic**

The Czech Republic in 1997 and 2002 suffered several catastrophic bouts of flooding, for which it must respond more proactively, especially by developing an early warning system. Other than floods, the country also suffers from tornados, abnormal precipitation and

an increase in the number of heat waves and cold snaps : all these events contribute to upsetting the smooth running of the country (transport, electricity, water, etc...) In order to respond to the challenge of climate change, the Czech Republic has two main plans : limiting emissions and coping, two policies that both require international collaboration.

The early warning system developed within the country is supported by a network that enables the required information on flooding and storms to be distributed to the public via SMS, internet and the media. This system is still inadequate, acknowledges Yvan Obrusnik, and could be made more efficient by setting up direct links with State emergency services.

The coping strategy must develop synergies with mitigation measures, whilst at the same time developing research, since our knowledge of climate change is still inadequate, particularly in the area of the complexity of the water cycle.

Reusing the image coined by John Prescott, the speaker confirmed that disasters and climate change are two faces of the same coin. It is therefore crucial to develop European cooperation between national platforms and national weather and hydrological services. This cooperation may also be developed at the international level within the World Meteorological Organization (WMO) that links 88 national meteorology services.

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## **Mette Lindhal Olsson, Unit Head, Swedish Rescue Services Agency (Sweden)**

As of the 1st January 2009, the Swedish Rescue services agency became the Swedish Civil Contingencies Agency (MSB) explained Mette Lindhal Olsson by way of introduction. This agency has drawn on lessons learned from serious inadequacies in crisis management during the 2004 tsunami, during which 534 Swedes lost their lives. Sweden has also witnessed an increase in natural disasters linked to climate change : storms, flash floods, forest fires and land-slides. Deeming that it had to improve its knowledge of risk, the Swedish government in 2005 set up a committee on climate change and vulnerabilities. A definitive 3000 page report generated by Swedish experts was published in October 2007, and set out the positive and negative effects of climate change for Sweden. This report outlines the principles guiding the government's actions on the management of climate change risks. Risk factors in construction include those

linked to the increase in high winds, snow, floods, temperature and landslides. All these are changes that must be taken into account as soon as possible in our land use plans and in new building standards.

Currently in Sweden, rising water level models are not respected, with dwellings continuing to be built on the coastal waterfront despite the risks involved; building permits are the responsibility of local municipalities. In order to draw up building recommendations, the reporters used Czech studies created after their floods for inspiration.

Infrastructures such as roads and railways, severely threatened by floods and landslides, must be strengthened with more robust building standards. Water, electricity and communication networks are also under threat from this type of hazard and must be specifically targeted for strengthening.

Hitherto unknown disaster scenarios must also be studied in order to ensure future security.

The speaker declared herself to prefer the notion of basic security achieved by implementing a more robust society, to the former notion of acceptable risk cited in yesterday's session.

The Swedish Rescue Services Agency takes part in reducing natural disaster by using a range of actions : flood and tremor mapping, R&D programmes, national and international cooperation, training, information and education programmes on risk reduction, setting up of a database on past disasters, and feedback sessions within Sweden.

The national Swedish platform was set up in 2007; it is based on governmental authority in conjunction with seventeen stakeholders involved in risk reduction, civil protection, coping with climate change and the development of international assistance. An action programme has already been drafted and ratified, explained the speaker.

The Hyogo framework for action is a good way to continue in the right direction. The European initiative on risk reduction must focus on natural risks, since other risks are already covered in different legislations such as Sevesco, NRBC and those on critical infrastructure.

The aims of the national platform are to contribute to reinforcing Sweden's security by reducing natural disaster risks, to contribute to the capacities of civil society and to support all actors at the local, regional and national levels.

Mette Lindhal Olsson concluded her address by announcing that a conference on natural disaster, climate change and civil contingencies would be organised in Stockholm at the end of July 2009, as part of the Swedish presidency.

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## **Dr Gerd Tetzlaff, DDKVDDKV, meteorology institute, University of Leipzig (Germany)**

The German platform puts together the climate change coping programme : this federal and cross-ministerial programme is broken down into 14 sub-programmes (critical infrastructure, water management, prevention of natural disaster, etc...) The programme is intended to be integrated, involving both scientists and users. Dr Tetzlaff talked about the climatology centre, set up by the German research ministry ; it studies various climate models in order to transmit and distribute among users the key information needed to raise awareness within the population of the problem of climate change ; the science must made accessible to them. The speaker underlined the problems of making scientific climate studies accessible and understandable to both the public and researchers ; this is the only way to convince local users and elected representatives of the usefulness of programmes and initiatives. Efforts are also being made to improve regional modelling programmes, as extreme events are still poorly represented in them.

Damage caused by natural disasters has increased by 25% in the last 20 years, but since GDP has increased by 35% during the same period, the economy appears to be able to bear the extra climate costs moderately well. This does not take into account the number of localised small events that are not yet sufficiently understood nor taken into account, warns the speaker.

The study of extreme local and regional events shows that there is no easy answer to the issues raised : we will have to make extra efforts in understanding these local events, in improving the database in order to understand past extreme event trends, and in studying material damage caused by climate change, concluded the German representative.

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## **Anne-Marie Levrault, head of the natural and hydrological risks unit, MEEDDAT (France)**

By way of introduction, the MEEDDAT representative highlighted the fact that natural risks are very real in France and in its overseas territories, whether or not they are linked to climate change. Flooding is the most usual risk in mainland France.

The speaker summarised in a few words the basis of French risk reduction policy and the roles of the various actors in this policy. Historically, France has been characterised and defined by its centralist approach, despite the several waves of decentralisation that have devolved some responsibilities, particularly those to do with land use and risk management, to local authorities. The State still exerts an overarching influence, via its role in appeals and in regulation. However, in order to achieve a real level of political efficiency on risk reduction, mobilisation of all the involved parties is crucial. French risk reduction policy must be shared at a more local level in order to involve civil society more completely, and mobilise it against risks.

The point of natural risk reduction platforms is their ability to centrally coordinate, whilst retaining an international dimension on the exchange, reflection, and promotion of ideas between different actors.

Despite all the efforts that are undertaken, extreme damaging events will always occur and zero risk will never be achieved : we must therefore be prepared for the threat of disaster. The effects of some of the actions undertaken will only become apparent in the long term; for this reason any action undertaken must fit into a continuum regulated by a disaster reduction and natural risk policy. Such a long-term policy is unavoidable, particularly as regards land use.

Risk reduction is supported by the foundations of knowledge, preventative information and education. A long-term policy involves interactions between, on the one hand, land use that takes into account the risks, and falls under the responsibility of local authorities, and on the other hand, risk reduction plans, tools that enable the State to impose restrictions on land use and to restrict development in areas at risk. Authorities and populations often have a poor understanding of the reasons behind State policy, deeming it authoritarian; for this reason consultation process has been developed over the last few years, allying authorities and populations in helping these policies to be both understood and applied; this is a sine qua non condition if real efficiency in reducing risks at the territorial level is to be achieved.

The French platform, that aims to be adaptable, is supported by the main ministries involved, especially the MEEDDAT, on civil society and on local authorities. The AFPCN has been confirmed as a key operator in this platform.

Climate change is a new issue that requires a rethink of natural risk reduction policies. The precise impacts of climate change on local risks are still poorly defined, but the overall impact encourages a reflection on policies for coping with climate change. Anne-Marie Levraut mentioned the current initiative inspired by the Stern report that aims, in the context of the national climate change coping strategy, to assess the costs of the impacts of climate change.

Taking climate change into account in coping policies must lead us to manage uncertainty; this high degree of uncertainty requires us to step up levels of caution, to increase the resilience of our societies and to reduce vulnerabilities of our territories and economic activities. All these factors require us to involve more closely in this reflection process actors, civil society and area authorities.

In conclusion, Anne-Marie Levraut noted that there can be no policy without strong links between those deciding it and those bound by it. Civil society in its widest definition must be a crucial partner in public action and in the implementation of risk reduction policy. The State and all citizens must accept their responsibilities in the spirit of the 2004 law on the regeneration of civil society, which underlines the concept that every citizen must act against risk.

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## Question and answer session

**Question :** Why are monitoring systems and early warning systems so important?

**Dr Yvan Obrusnik :** Early warning systems are crucial : if you neglect this stage, damage will be all the greater and repercussions all the more tragic. In developing this type of model, the crucial thing is to improve the scientific data that underlies these models. We must also set off emergency measures in order to give the warning as early as possible. Finally, users, the institutions that will be the end user of the warning, must be able to understand the message they receive. For this reason we train the people called to use these systems, services, television stations... Monitoring also includes preparation, education and training, and this is why during the broadcasting of these

warning messages, we also add a few words to inform people on what their response should be.

**Question :** Is the aim of monitoring and early warning systems to alter the behaviour of end users? Even with the best early warning system, if people do not change their behaviour, these systems will be useless. Are studies being carried out in your countries on behaviour modification in parallel with early warning systems?

**Mette Lindhal Olsson :** “Early warning” is a basic scheme; if people do not understand the nature of the warning, it is useless. We must therefore adopt a bottom-up approach –this must begin in schools. Civil protection agencies must make public information messages understandable, as understanding is not a given. We have carried out studies on the acceptance and perception of risk, on risky behaviour, and on factors that trigger individual initiative. As regards the work carried out by researchers and those currently underway, our responsibility is to make this work understandable to non-specialists, so that everyone can absorb them at their own level, particularly locally.

**John Prescott :** It’s hard to convince people that threats are real; we must therefore use accessible language that in tune with their daily life. If people can feel involved in what’s going on at local and regional levels, the warning message makes more sense.

What worries me more is that land use policies in some areas continue to encourage development in risky areas despite the warnings given. We have to find a balance between regulation and local autonomy, between regulation and persuasion. We are aware that despite global thinking, implementing things at a local level is a lot harder.

**Anne-Marie Levrant :** Yes, indeed, the issue of the culture of risk and that the understanding of these problems by everyone is crucial. All these schemes for crisis management preparedness help us to gain awareness. In France, laws on civil security brought in the obligation for local authorities affected by risk to draw up a local safety plan (PCS in French) that includes an intervention plan for real time management of a risk. The fact of reflecting on environmental management forces interaction at the local authority and area level. There are strong links between issues of monitoring, warning, crisis management preparedness, risk culture and land use.

Finally, if a warning, for example of a flood, is not taken seriously, of course it is useless. We have to be credible, to train for and run through warning exercises as some authorities do already. When a crisis happens, the warning helps to considerably reduce damage if preparation is adequate.

Among the foundations of the French risk reduction policies, education and preventive information are crucial aspects that cause us to act in the long-term to alter our behaviour and cause changes in decisions. The ministry of Education is therefore a crucial partner in our work.

**Sam Hettiarachchi (Sri Lanka)** : I am responsible for a working party on the tsunami, and happy to report that that Indian Ocean States are, in conjunction with the international community, currently developing an ocean warning system. We have improved the entire ocean tremor network by setting up a system of measures in the Indian Ocean to improve tsunami risk prediction. Alongside this, we have tried to educate local populations so that they understand how to react quickly to warnings. Trial evacuations have also been carried out in Indonesia.

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## Second session

Observations and debates on the European dimension of national policy with a particular focus on platforms and focal points for European countries and consultation processes

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Mrs Irmgard Schwaetzer began this second session by expressing her desire to bring a more global perspective on the situation, within a European Union whose political dimension is becoming increasingly important in the face of national policies. The chairperson mentioned the Green Paper on coping with climate change in Europe that highlighted some key points such as the level of coordination required between the complementary policies of mitigation and adaptation. She underlined the importance of the funding of coping strategies, that must include reducing natural disaster risks. Europeans are preoccupied by the negative effects of climate change. Towns and urban environments have been identified as priorities in disaster reduction policies, with the need to set out guidelines and to establish building and conceptual standards.

Communication, information exchange and the early warning systems are also future priorities.

The European Commission has slipped a little in its schedule; this explains why measures that ought to have been announced during the last half of 2008 will only be declared during the Czech presidency. The presentation of the White Paper that will represent the end of the consultation process is now anticipated for the beginning of 2009.

A European consultation process, begun this year by the Development DG, covered the increase in numbers of disasters and vulnerabilities in poorer countries in an effort to kick-start an aid and humanitarian assistance programme. Strategic fields of action have been set out by the Development DG : namely, to improve the integration of disaster risk reduction into aid and development policies, improving the identification, assessment and exchange of information on disaster risk, reinforcing institutions working to reduce natural disasters, improving public knowledge and awareness of this reduction, better managing and coordinating the funds contributed to reduce risks and improve coping capacity.

If the schedule is respected, the natural disaster reduction strategy in developing countries should be passed by the Commission before the end of 2009.

The third development this year was a communication from the Commission, initiated by the Environment DG, that improves the Union's abilities to respond to disasters. The main objective of this communication, drawing on lessons learnt from the tsunami and the war in Lebanon, were to contribute to improving the coherence, visibility and effectiveness of European responses. The communication sets out a few concrete proposals such as setting up MIC, the pan-European operational centre, and the improvement of disaster response capacity within the Union. The elements required in developing European intervention include cross-border decisions, improving mechanisms for exchanging best practice on disaster risk reduction -the European platform network has been cited as a good example of this, able to serve as a model for Member States' own platforms, as well as raising public awareness of climate change, in order to support the public in altering their changing behaviour. The communication concluded by stating the need to develop Europe-wide monitoring and follow-up tools, to arrange access to joint resources, and share the R&D load.

The EU will have to establish standards for protecting the public against risks. Finally, Europe must prove the effectiveness of its policies and instruments in preventing disaster.

As regards research programmes, Irmgard Schwaetzer quoted some topics from the 7<sup>th</sup> framework programme on natural hazards and the environment, including climate change, that have now been opened up to proposals.

In the Global Monitoring for Environment and Human Security (GMES) programme, the section on disaster management is already up and running. The European Bank for Reconstruction and Development has put forward its proposals; among the main challenges for 2008-2009 is the theme "coping with climate change, energy security, food and water".

In summary, there have since 2007 been a large number of EC and European climate change initiatives and these have been wide-ranging : green papers, communications, etc.. Some work programmes will be set up in order to implement the various recommendations and outcomes of these works. National platforms will be able to supply their expertise and knowledge to support these initiatives in an integratory approach.

After these opening words, the session chairperson invited the speakers at this session to outline the role played by their national platform and the links between the national and European levels.

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## **John Prescott, Council of Europe representative for Great Britain**

The European framework is crucial in addressing what is actually a global problem. The EU brings together 27 nations. The Council of Europe, of which the speaker is a member, brings together 44 including Israel, Russia and Switzerland.

John Prescott expressed his desire that during the conference to be held by Sweden next July in Stockholm, as part of its EU presidency, that countries be reminded that despite these difficult economic times, the bulk of the climate change costs will be borne by the richer countries. We must demonstrate that Europe is taking real steps, and is proactively managing natural disaster and the risks of climate change, which represent two sides of the same coin, he insisted. We must of course act both globally and locally, but the national dimension is not enough. The European dimension is crucial, and Europe must make its voice heard in UN discussions, and influence in favour of Kyoto II, as it did during the first Kyoto agreement.

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## **Anne-Marie Levrault, head of the natural and hydrological risks unit, MEEDDAT (France)**

How to involve the national level in the elaboration of a European policy on risk prevention ? European platforms are wide and varied but our cultures have historically close and common links. Concretely, the difficulty commonly encountered is that of being truly effective in the field of reducing natural risks; this difficulty is compounded by uncertainties linked to climate change.

Research and knowledge efforts must be pursued, but this is not the main field of operation for the platforms; these tend to focus more on exchanging good practise and experiences, federating studies and raising the awareness of populations to reducing natural disaster. We must each and every one of us in Europe understand and take ownership of the problems and include them in our behaviour. There is no single response because it is all still being generated. We want to work together in building a joint response : widening the European platform network would turn it into a very good tool and enable it to have even more influence in these areas.

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## **Dr Yvan Obrusnik, director of the hydro-meteorological institute, president of the national risk reduction committee (Czech Republic)**

In the Czech republic, climate change is one of the priorities of the Environment Ministry; this is particularly true under the upcoming presidency of the Union, and it represents a very great challenge. As regards the European disaster reduction policy, we note that half of the Member states have no effective emergency system or early warning system. They require not only funds but also support and advice.

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## **Mette Lindhal Olsson, Unit Head, Swedish Rescue Services Agency (Sweden)**

Each country has a duty to develop its capacities to respond and reaction in a measured way to the risks encountered. At the present time, the European mechanism (MIC) is sometimes used as a stopgap solution to palliate the deficiencies in some countries. The Swedish ministries are and will remain involved in European cooperation, and Sweden wishes to be heard on these issues. The EU initiative on prevention must take prior measures to improve the level of preparedness within civil society. Sweden is looking forward to the upcoming communication risk reduction, as long it is not too detailed nor too cumbersome to manage. Risks are not present only in Brussels but also at the national and cross-border levels. International cooperation is crucial to Sweden as the size of the country does not enable it to establish its own solutions without international support. Researchers from different countries must help each other: the issue of climate change will be one of the priorities during the Swedish presidency of the Union, announced the SRSA representative.

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## **Dr Gerd Tetzlaff, DDKV, Meteorology Institute, University of Leipzig (Germany)**

European platforms are working collaboratively and wish to add value to this collaboration process. Cooperative projects have been able to be placed before European institutions, because these are areas in which it is crucial to achieve critical mass, he said. This will necessarily involve a federation between Member States since no one country can strike out alone. The important thing in the research and project work undertaken is to communicate with the decision-makers. Information must be brought out of the field of research and the scientific world and transferred to users. This cross-disciplinary effort must be made at the European level by federating research projects, and gathering practitioners into joint projects. Pilot areas must be identified, to which solutions may be found. Consensus must be reached with users in order to identify the final conclusions on which to base them.

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## Dr Jean-Jacques Wagner, Honorary professor, expert on natural risks (Switzerland)

What are governmental priorities and budgets to support these actions, and what will the opportunities be for young people rising in these fields to develop future security ?, asked the Swiss speaker. The EU has invested considerable sums in basic research, but the important thing now is to transfer this research into to concrete applications. We must obviously carry on with basic research, as it is indispensable to climate research or the study of natural disaster risk reduction, but most importantly we must act. This will require raising awareness among politicians to encourage them to act to reduce natural disaster and to make it a real political priority. The network of national platforms, along with Commission work, can play a crucial role in raising this awareness and awakening the conscience of politicians. Reducing natural disaster should not represent an opportunistic theme whenever a disaster happens. It is crucial for actions to be governed by permanence.

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### Q & A session with the floor

**Irmgard Schwaetzer** : Before moving on to questions, I wanted to point out that there will be many opportunities to make progress on the issue of natural risk reduction flowing the initiatives undertaken by the European Commission and Council : one of these will come up in June during the re-examination during the Council of Europe of the agreement on major hazards, and well as during the platform meeting scheduled as part of the ISDR. There will also be a meeting of aid donor countries on the re-evaluation of humanitarian aid, during which the question of reducing natural disaster may be broached.

**Thomas de Lannoy, Environment DG** : Revisiting some Commission initiatives, you should be aware that the communication on disaster response was passed in March 2008 ; others are under consultation within Commission departments, and may not be reflected in final communications. Communications are not the responsibility of any particular directorate general, but are published by the Commission as a whole, hence the arduous interdepartmental work needed to conciliate all the actions implemented by the Commission. These initiatives all contribute to the Hyogo process and aim to reinforce cooperation with United Nations risk reduction strategy; in this context, the Commission is actively preparing the June 2009 meeting being organised as part of the ISDR. Communications to be published by the Commission will launch a

consultation process with all the involved parties, in which national platforms and other organisations will be able to contribute to implementing proposals outlined in these communications.

**Mathieu Fichter, Regional policy DG** : As regards structural funds, 6.5 billion Euros have been earmarked for prevention in Europe. We also wish to support the cross-border cooperation process, and the exchange of good practice in hundreds of projects on risk reduction, such as in the field of agro-nutrition or early warning on forest fires.

**Denis Peter, Research DG** : Mrs Soares mentioned the research programmes on natural risk available to the scientific community. The Environment programme, even with its modest budget, is attempting to move in this direction (the infrastructure programme, the GMES Espace programme and the communication technology programme). Platforms may have a role to play in the consultation processes set up by the Commission within the scientific community, ministries and various partners.

**Eric Brun, Scientific director, Météo France** : The European scale of avalanche risk reduction is an example of a concrete measure carried out fifteen years ago in Europe in order to implement joint regulations on risk communication. Until then, the five alpine countries had very different rules and practices, very little understood by users. The drawing up of joint standards was therefore achieved, using a shared risk scale of between 1 and 5. The shared scale doubtlessly contributed to the stabilising of numbers of avalanche victims throughout the decade, despite a regular rise in numbers of visitors to the Alps. Spain adopted the same scale, followed by Scotland, Norway and Iceland; this made it an international standard originating in Europe. An initiative such as the European vigilance card should be very actively supported by Europe so that joint practice and operational methods arise, bearing in mind that risks transcend borders, and that due to mobility and tourism, many people are facing risks in countries other than their home country.

**Paola Albrito, UNISDR** : In order to prepare for next June's platform meeting, a few reports have been requested on progress to date and on what is left to achieve in reducing natural disaster. A large number of countries have already responded to this request : the aim is to achieve by June a joint understanding and joint position within Europe on the responses required to this issue. How to link risk reduction and climate change at the national platform level however? At the ISDR, we suggest that there should be a natural disaster reduction expert among the speakers during the Poznan talks on climate change. We have already drawn up some clear and simple documents on the links between natural disaster reduction and climate change.

**Yves le Bars, vice president of the AFPCN** : Following on from what Paola Albrito just said, we must ensure that coping with climate change be given its rightful place within all negotiations. The vulnerability of southern countries is rising faster than that of northern countries, and uncertainty is also greater in these countries on the subject of climate change. Risk management is first and foremost a governance issue. We must thank the Swiss for having organised the European platforms meetings alongside the Davos Forum and for their help with setting up southern countries' platforms. This is the kind of action that needs further development.

**John Prescott** : Everyone knows that we must face up to climate change; we also now must consider solutions. Politicians have to involve themselves more and set priorities. I think we need money to resolve the issue of climate change as much as we need to shore up some banks at present.

**Yves Dauge, Indre et Loire senator, AFPCN president** : I agree that the issue is a political one; we must therefore come back to the political and governance issues. The platform concept should enable us to open up the field of competences and actions whilst gathering together partners who all too often dispersed. The French platform therefore includes the State, experts, local authorities and organisations. The main idea is that we will not succeed in changing the governance if we do not change our joint working methods. We must overturn the heaviness of land use policies, and reduce land management policies that increase everyday risk. We are in a situation in which risk is being increased by the application of policies that continue to disturb balance. We must redeploy the money and reinvest it in new areas. This is, maybe, the role that platforms ought to adopt : gathering citizens together, gathering scientific knowledge in order to better inform opinion, training citizens better and remaining in close relationship with the State in order to feed back information, and achieve radically different policies.

There is a major interest for platforms in communicating with each other, with the Commission and with the international strategy in order to fit into the European and worldwide policies. We must challenge the political world so that change will truly be political. The issue is enormous, and tasks must be prioritised in order to be truly effective. It is not a new institution that is required but a new way of working.

## Summary

### by Philippe Boullé, AFPCN, former head the UN International decade for natural disaster reduction

To conclude the session, Pierre Philippe Boullé came back to the issue of cooperation, and to the instrument for cooperation represented by the platforms.

The UN reporter speaker dwelt on two terms in the context of platforms :

- on the one hand on the joint ownership of ways of tackling risk ;
- on the other hand the networking of all risk actors, from knowledge to response via reduction and preparation.

National platforms are not all set up on the same model- they depend on the risks that the country has to contend with. These structural differences between platforms, rather than being a brake, actually further exchange and strengthen the resolve to work together within a network that has begun to prove its effectiveness. They are a way to coordinate and direct governmental, European and international institutional actions.

There are also other forms of cooperation : the north-south relationship has been cited through the Swiss initiative to gather developing countries and members of the European national platforms together in a workshop in August 2008. A twinning scheme may be encouraged between European national platforms already set up and those being currently set up in developing countries.

In order to develop this cooperation, we must define the precise issues on which to work ; this is not always obvious when managing uncertainty, explained Pierre Philippe Boullé.

There are some institutional and exchange actions developed by the UN-ISDR and the Council of Europe : the need for coordination between all the various initiatives is obvious. The speaker noted that research was crucial but must be put to the service of the operational aspects.

In his conclusion, Pierre Philippe Boullé drew attention to the need to create a European culture of disaster reduction- this vast programme is still entirely to be planned.

## **Workshops :**

Risk management and adapting to climate change in various geographical environments : coastal, mountain, cross border rivers, urban areas and training

## **Summary**

**Chair : Eric Doligé, senator for the Loiret region,  
president of the European Centre for Flood  
Prevention (CEPRI)**

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## **Coastal workshop**

**ReporterRapporteur : Robert Nicholls,  
University of Southampton**

This workshop gathered speakers from six Member States that are facing up to the challenges of climate change on their coastline : Great Britain, the Netherlands, Spain, Germany, Italy and France. The vulnerability of the coastal environment, already a particularly fragile area, can only worsen with climate change. There is a huge disparity in the level of understanding of challenges and in the steps taken in Europe on coastal issues; better coordination and integration would therefore be very useful at Community level. The speaker noted however that coastline issues are taken more into account in Europe than in many other areas, particularly in developing countries. We must ensure that balance is preserved between human use of the coast and its ecological role, and find a compromise between protection and usage.

As regards models, we must ensure that socio-economic and physical factors are included in the assessment process. We must also develop relevant tools for making scientific

knowledge and information available to managers in order to help in their decision-making processes. All socio-economic and physical factors must be fully included into European coastline management. A map of flooding and coastal erosion is just one of a number of tools to be developed at the Community level. The issue of rising sea levels must be better included in political decision-making processes.

European policy is already mobilised around coastal issues, via directives on habitat, flooding, the White Paper on coping, etc...

A consensus has been reached on the need for action ; the issue now is to know whether a new directive must be drawn up, or whether existing measures can be refocused in order to better integrate coastline and climate change issues.

Conclusion : constantly evolving, the coastline must be taken into account in climate change coping policies in order to better control the effects and preserve the important socio-economic resource that coastline represents for Europe.

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## **Mountain workshop**

**ReporterRapporteur : Christian Chatry, chief engineer at the GREF, French Ministry for Agriculture and Fisheries.**

The issue of climate change in mountainous areas is characterised by a high degree of variability and uncertainty. The research director at Météo France reminded us of the heavy increase in winter precipitation in northern Europe and the increase in summer droughts in the South. New warnings have been taken into account on the issue of risk, particularly as regards flooding, with glacier and forest fire risks in some mountain ranges.

Three questions were asked on the issue of climate change:

- 1) What changes have been noted in land use, land management and mountain activities ?
- 2) What are the effects of changes in vulnerability ?
- 3) How much joint work is required at the European level ?

Five experiences were exchanged :

- Hugues François (France) presented the work carried out by the Association Nationale des Elus de Montagne on the challenges presented by climate change.
- Anders Solheim (Norway) presented a national audit on avalanches and landslides, and the consequences on regulation.
- Maria Patek delivered a status report and new implications for Austria in these alpine programmes.
- Jean-Marc Vengeon, director of the Grenoble Study and Research unit for the reduction of natural risks presented reference of the Inter-reg programme ClimChAlp, that is carrying out a survey into the proven and potential effects of climate change on natural hazards on the Alpine area.
- Finally, Montserrat Mases Cobero spoke about the growing process of awareness of these new issues in Andorra.

Approaches remained very global and did not address risk reduction, behaviour, information and training issues.

Four items were noted and simply summarised by Christian Chatry as follows :

- There are reasonable halfway positions between utter inactivity in the face of uncertainty, and extreme overreaction ; some intermediary, politically acceptable solutions have appeared, with adaptation of equipment and setting of baseline hazards.
- The best way to prepare for the future is to face up right away to all the consequences of current hazards ; it is via this awareness process that we will be able best to prepare for future risks.
- We need greater historical memory; work is underway in several countries to study historical information. The creation of reference databases, event data and observation protocols was mentioned.
- We must provide better support for networking in Europe and beyond. The Davos initiative was cited along with the notion of dividing the mountains up by range.

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## **Cross-border rivers workshop**

### **Reporter Rapporteur Robert Slomp, Transport ministry, Netherlands**

Three presentations were made during the workshop : an analysis of the cross-border cooperation projects in Europe and the issues raised by rivers that cross several countries (eg, the Elbe, the Oder, the Danube...); an analysis of the cooperation project on the Meuse river, a 950 km long European river that crosses France, Belgium and the Netherlands ; a presentation by the joint EC research centre that developed a flooding monitoring system on European water courses.

Six countries were represented within the workshop along with the World Meteorological Organisation (WMO) and the European Union.

The workshop firstly considered the institutional framework for cross-border cooperation. The implementation of practical measures requires that cooperation happen at the executive level ; agreements may be concluded by European cooperation and Union instruments such as the EFRE, the INTERREG or the climate change adaptation strategy. Measures are needed to encourage the implementation of upstream measures and improve monitoring systems : in order to achieve this, strategies to negotiate, compensate and increase acceptance must be developed internationally. The real challenge remains to be able to prevent risk by appropriate long-term land use, whilst politicians tend to act in the very short-term. We must also mobilise society so that it incorporates into its behaviour the challenges of natural disaster and climate change.

The workshop then studied the practical steps required to develop cross-border cooperation. The consensus was that one must start small, on a local level, and then progress stage by stage towards elaborating a joint vision, by mapping the problems encountered together and seeking to solve them.

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## Urban areas workshop

### Reporter Rapporteur : Brigitte Mazière, AFPCN

The urban centres of London, Hamburg, Greater Lyon, Prague and Barcelona have all suffered from flooding in the past and have had to reconsider the steps taken, or even their development and urban organisation structure in the face of the risks. The workshop showed that despite the shared experience of flooding in cities, every case was nonetheless unique; few convergence points were really outlined during the work, so varied and dense were the presentations.

- Prague, after catastrophic flooding, had to revisit its defence policies for various networks, including the metro that was flooded, and to take legislative measures on meteorology, evacuation and area strategic planning by integrating risk planning into them.
- The City-State of Hamburg is currently undertaking major works to integrate sustainable development, natural disaster reduction and climate change into its economic development policies in sectors that are particularly at risk. The population is involved in this development policy by its focus on preventive information and anticipation.
- the Greater Lyon area is concentrating on the risk culture and the re-appropriation of some practices, particularly of land use, and is redrawing its flood risk areas. A long consultation process is being carried out in conjunction with elected representatives, technical personnel and residents in determining acceptable levels of risk.
- the Greater London area has an economical and pragmatic approach to the problem, that fully integrates climate change and the linked risks. The notion of vulnerability has been studied whilst increasing the resilience of buildings in the long term, beyond the current uncertainty.

The final part of the workshop was devoted to the prospective approach via the case study of Barcelona and a reflection process carried out by Transit City. Barcelona approaches urban development in three dimensions : height, surface and underground, thereby opening up new perspectives in the ownership of risk and climate change, by seeking to make the town self-sufficient in certain key areas such as water and energy, etc...

Finally, Transit City studied how the concept of disaster was approached throughout the world on the socio-cultural level, and how this concept might itself represent a means of galvanising thought processes.

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## Training workshop

### Rapporteur : Didier Racine, EISTI

This cross-themed workshop on training enabled participants to discuss training needs and actions undertaken in the area of risk. It was in this context that the association of local authority heads of the large European cities, along with the IPGR, that federates local authorities in France, stated their need for decentralised risk training. The MEEDDAT also outlined the major axes of need and training activities. Some key points were noted during the presentation on the direction of EC actions, such as the strengthening of synergies between risk training schemes at both the national and European levels.

The second major theme covered in the workshop covered European experiences on these training issues ; the case was cited in particular of a federation of Italian universities that cooperates on the issue of risk, under the direct management of the Italian Interior Ministry.

Also presented was a European research platform run from Barcelona, on reducing vulnerability by the use of artificial intelligence, and simulated scenarios to improve global training. A French example was also outlined that aims to federate risk training to gain benefits from joint efforts, and reactivity for participants.

The third ad final theme of the workshop was the topic of educating populations to the risks. The main lesson drawn from the workshop was the need to reinforce training and education issues with regard to EU, UN and ISDR actions.

To conclude, it is crucial to alert the European training area to the risks by implementing a kind of risk management steering committee as part of a European Grenelle-type process on risks. Synergies between European training schemes could be strengthened via an Erasmus exchange programme, particularly on risk-related themes, and by further developing a flagship project for coordinating exchanges and events via an "Erasmus Mundus Risk" programme.

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## **Feedback from keynote speakers:**

**Professor Erwann Michel-Kerjan,  
Research director at the Wharton Center  
for Risk Management and Decision Processes  
(USA), associate researcher at the Ecole  
Polytechnique (France) ;  
president of the high committee on large scale  
disaster at the OECD.**

In his work on these issues of major risk at the high commands level of leading organisations and governments, Erwann Michel-Kerjan notes that the issue of risk management is working its way up the agenda in a far more strategic way nowadays. The role of “chief risk officer” in large companies is far more important now than it was before. It is for this reason that over half the sessions at the Davos 2009 Forum will be on issues of risk management. The main challenge that is set is that of managing to translate these risk management issues concretely for decision-makers so that they make them a real priority.

The fact that issues of climate change have incontrovertibly entered the public conscience is an opportunity to convince decision makers of the value added of these risk reduction issues. The speaker declared himself pleased to see so many people gathered together in this building who normally might have little contact with each other : politicians, scientists, legislators, economists, etc... This conference combines several issues and different experiences that are more usually handled in isolation. Indeed the only way to make progress in these issues is to prove that there are certain economies of scale to be achieved, and to make use of the added value of collaborative work, as one rapidly exhausts oneself and loses efficiency when working in isolation.

Having lived in the United States for the last seven years, the speaker has noted a complete change of perspective in debates on climate change, at least at the state level, that had brought about a change in thinking in Canada and South America. The United States had indeed had to deal with seven major hurricanes in fifteen months ; these had devastated the US coastline and profoundly shaken the American insurance industry and administration, shown up as incapable of dealing with such a crisis. Europe has suffered disasters but not on such a large scale, and until one has suffered major disaster, there is a hesitation to act, noted the speaker.

In conclusion, Erwann Michel-Kerjan explained that the challenge for the coming years is to be successful in translating scientific knowledge of risk management into concrete actions on the ground. In the US, the notion being developed is that research prioritises the knowledge requirements expressed by industry, administration, etc... The research dynamic has thus been overturned : scientists are researching not only climate change but also very concrete issues.

The speaker concluded by reminding the floor that in order to progress on issues of natural disaster reduction, we had to create value, incentives, and opportunities that will harness the support of decision-makers.

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**Professor Bernard Drobenko,  
academic lawyer, Université du Littoral  
Côte d'Opale, CRIDEAU Limoges**

Law is of interest only by virtue of its necessity; with increasing risk, we are increasingly in need of it. The workshops reminded us that there is a relatively large body of law on the subject of risk management, but that it is little used or not well enough applied, noted Bernard Drobenko. There is a profusion of legal cases on risk within States, but far fewer at the level of the European courts. The question of governance was asked during the workshops, and indeed politicians' timescale is not the same as that of major risk. We must therefore find a the common ground needed to ensure continuity between day-to-day management and management of the major risk mandate.

As a lawyer, the speaker has pondered causality, some of which is obvious, immediate and recognisable by law. Society is developing under the dogma of growth, competitiveness and mobility. Our industrial, technical and consumerist civilisation has given rise to two types of law :

- international environmental law, very sectorised and with no world institution to manage it globally, nor any framework agreement;
- international commercial law, that favours exchange and competitiveness- a "hard" law with an international convention and a tribunal to regulate and punish. Between these two laws, lies a paradoxical lack of balance in standards.

There are also underlying causes : on the issue of coastline we sometimes forget that coastal erosion can be caused by barrages, upstream on the rivers, retaining sediment. The law has not regulated these but may contribute to improving things.

Expertise was often mentioned during the workshops, but little mention was made of assessment. We must revitalise the assessment process by including all the effects as well as the ecological footprint. The significant perspective would be to set up an assessment tool with a legal focus, that would enable the ecological footprint to be evaluated and to examine the primary cause : impact of industry, agriculture, transport etc...

Responsibility lies at the centre of the whole legal system : the law comes up against major obstacles such as State sovereignty; the principle of "polluter pays" has been recognised in treaties. In an increasingly global world we ought to have access to global legislation, but the obstacle of sovereignty is still a major one. We are however witnessing the emergence of "objective" responsibility; the question must be asked about the responsibility of polluting States with regard to submersions as long as a causal link can be found. The Rio conference was innovative in setting up a new responsibility regime : responsibility that is joint but also several. We recognise that not all countries will have access to the same resources but the responsibility ascribed to them will be proportional to their effect on the environment. Until now, there has been no mechanism for applying principles that was recognised by the Rio Convention. The field of competence of the International Tribunal may have its scope widened to include environmental issues, suggested the speaker, so that risk management may truly be taken into account.

In conclusion, Bernard Drobenko explained that the current crisis might prove salutary, by enabling the production of law that is based on the demands of sustainability. He ended his speech by quoting Levi-Strauss : "Societies have only survived because they have within them the ability to produce the forbidden"; this may be what is missing nowadays.

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## Q & A session with the floor

**Claire Mays, Researcher at SYLMOG** : We have not heard much about stakeholders, who may be individuals, groups or institutions that have a role to play in decision-making processes about a risk or those affected by that decision. I heard mention during the speeches of altering behaviour and increasing acceptability but nothing has been said about involving people in risk related decision-making. In my area of competence, which is

the management of radioactive waste, we are experimenting with a so-called "inclusive" governance that involves all the people involved at every level of risk management.

**Bernard Drobenko** : The Aarhus Convention is a relevant framework resting on three basic principles : the duty to inform the public, involvement of the public in decision-making, and opportunities for the public to appeal against decisions either by arbitration or through the courts.

**Alain Moulinier, Ministry of Agriculture** : You mentioned the creation of value to gain the interest of decision-makers, but risk management is aimed at avoiding drops in value. Can you explain please?

**Erwann Michel-Kerjan** : The whole problem is in how we present challenges : we must turn around and not focus on spending on risk reduction, but include the concept of risk in development programmes for energy or urban infrastructure, as one of the components of a long-term strategy.

**Marc Gillet, ONERC** : You state that decisions on risk management are not currently rational enough. Nuclear risks are integrated and acknowledged by the public whilst the likelihood of accident are very much lower than for some other risks such as cyclones; this perception is frequently reflected in the policies adopted. Could the aim be to rationalise responses and priorities given to risk management ?

**Yves le Bars** : You broach the issue of the imagined in managing societies, and more particularly in risk management. What is currently holding up public debate in society is the irrationality of technical people. A nuclear engineer for example, totally in love with his subject, will not tolerate any challenges to his field, and is not able to include any factors other than his own into the complex decision he has to make. It is remarkable that the more rationally trained a person is, the less willing they are to take the irrational into account.

**Nicolas Camp'Huis, CEPRI** : Managing to convince decision-makers with economic data is a real challenge. There is a shortage of data on the benefits gained from investing in risk reduction, on the benefits to a company of protecting itself, and on what a town has to gain by anticipating the short-term. These are the assessment tools that are missing in France on the issue of damage and the positive effects of risk reduction. It is hard to see how to implement these ideas.

**Guy Deneufbourg, AFPCN** : How does the division of responsibilities operate between the experts and the decision-makers ?

**Bernard Drobenko** : The legal expert does not have the last word on the issue of responsibility; he is the expert requested by a tribunal for example to give his opinion on a given situation. It is the judge's duty to decide thereafter. I have noticed a shift in the French legal system : for a long time the judge sought to define the responsibility of the planner or authority that had delivered a permit (eg : building, change of use), and jurisdictions would progressively take into account the behaviour and roles of the different actors.

**Yves le Bars** : The AFPCN in conjunction with IRMA organised a training session for magistrates on risks in the Grenoble legal area. This type of training could be duplicated in order to improve the understanding of risks throughout the system.

**Erwann Michel-Kerjan** : Insurance can play a role in encouraging risk reduction. The French natural disaster system does not any better encourage disaster reduction.

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## Conclusion

### Yves le Bar, vice-president of the AFPCN

The reporter general of tYves le Barshis session underlined the interest in approaching the issue of risk management via the territory type (coastline, urban areas etc...) rather than through the historical focus on type of hazard (flooding, fire, etc...) He pointed out that for the great rivers a per river system structuring and management system has been implemented in conjunction with all the actors throughout Europe.

The scheme seems ready to accept the extra hazards brought by climate change. As far as the major rivers are concerned, climate change issues are not crucial, because a whole system of prediction, prevention, vigilance and warning has already been built up. On the contrary, climate change will begin by a shift in representation; the change in vulnerabilities will bring about a change in the risk management. The level of governance is not the same for risks in coastal areas as it is for the major rivers. The large cities are forced to adopt a "risk manager" approach by managing a global system, in which networks are laid over a wide area of influence. The training workshop was added to the works because training is a cross-border issue and covers all types of territory : it is a process whose aim is to train risk managers, modellers and experts, but that also aims to educate, encourage change starting

from of a reflection process on sustainable development, climate change and natural disaster reduction.

For all the topics covered today, measures taken must be long-term ones, in order to build a strategy and act in a coordinated and coherent fashion. The aforementioned platforms concretise this cross-disciplinary approach and this modern outlook on a decision-making process that mobilise all involved parties.

“Disaster fuels modern imagination scenarios, by teaching us to live in continual uncertainty”, explained Yves le Bars.

Europe has proved its worth in terms of research, by enabling exchanges on a suitable scale and drawing on the progress made by various parties. Outside the larger river systems there are other cross border environments such as coastlines, mountains, etc...

Europe is also a Kyoto contributor, and must ensure that aspects such as coping and mitigation are included. Finally, Europe is solidary with the rest of the world.

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## **Eric Doligé, senator in the Loiret department**

To conclude the day's proceedings, Senator Doligé spoke of his optimism at witnessing more and more of the world tackling these issues of risk prevention, and as noted by Erwann Michel-Kerjan, forcing them up the agenda.

A major problem is the governance of a prevention policy in which land use must play a central role, as was amply demonstrated in the workshops today. Elected representatives have a crucial role in the field, for mandates that are often longer than 5 years, in establishing natural disaster reduction policies. The senator pointed out that the problem is more often found with ministerial offices that have a faster turnover than elected representatives; dealing with long-term issues of risk management within a very short time scale is very hard.

The State and Europe have a crucial role to play in encouraging politicians and supporting them in achieving a regulated working framework. We must link experiences and pieces of knowledge on these issues, and realise that we do not have to reinvent the wheel every time.

Lawyers like lawsuits, noted the senator, who went on to say that as an elected representative, he was regrettably submerged with lawsuits due to the new laws on equality of access to lawsuits. This proliferation of disputes considerably slows down the progress of cases. The problem for an elected representative is to decide to act, to move from thinking to action- this cannot be allowed to take twenty years.

In conclusion, the senator explained that he had set up an organisation, the European centre for the prevention of flooding (CEPRI) to bring actors together around the issue of flooding, and to attempt to create a new form of governance with all the stakeholders in order to act more quickly and with more continuity.

Finally, economic competitiveness is an important aspect that must be included into all actions undertaken on this issue of risk management. We must reflect on the balance required between economic and environmental aspects in order to head in the right direction.

**Friday 28th November**

## **International actions**

**Chairperson : Philippe Boullé, AFPCN,  
former head of the UN International Decade  
for natural disaster prevention**

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### **Salvano Briceno, director of the UN-ISDR (Geneva)**

The ISDR director noted by way of introduction that the international strategy for disaster reduction was developed under the aegis of the United Nations and is becoming a multi-actor programme gathering together NGOs, the private sector, parliamentarians, local authorities, the media, etc...

Climate change represents a major challenge that is still not fully taken into account ; in order to progress effectively, the issue must be made far more legally binding. Resilience, natural risk prevention and reduction are issues on which consultation is crucial. The Bali conference included natural risk reduction among the topics in its global climate change reduction strategy. This risk reduction also includes risks however that are unrelated to climate change, such as earthquakes or tsunamis.

More and more people are living in risky areas, or move towards the major cities that are increasingly becoming risk centres. It would be an error to view disasters as a purely natural phenomenon, as some are linked to human activity and are therefore avoidable if action is taken in time. We may speak of natural hazards, but we must stop using the term "natural disaster" which is not appropriate.

In the future, disasters will become more frequent and more serious (cyclones, flooding, drought, etc...) and will occur even in areas that have never before witnessed them. Methods and assessments will have to take into account these hitherto unknown hazards. Furthermore the new hazards caused by climate change (rising sea levels, increasing

temperatures, melting of glaciers,...) will set new challenges to those working on these issues. The community of experts working to reduce natural disaster, and those working on climate change must cooperate more closely together each contributing to the other's work. This risk reduction strategy must include reducing climate change as well. The debate between experts must be routinely encouraged along with the exchange of information, as will happen at the Poznan conference. The effects of climate change will however also impact on many other sectors such health and agriculture, sectors that will also be invited to take part in the debates.

The GIEC is working in collaboration with Norway on the links between climate change and natural disaster reduction. A workshop on the topic will be held in Oslo in 2009. The World Bank has begun an economic study of the economic advantages of reducing natural disaster.

The UN representative concluded by quoting his secretary-general, Ban Ki-Moon, who has personally undertaken to promote international initiatives to fight climate change.

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## **Eliadito Fernandez Galiano, executive secretary of the Eur-Opa agreement on major risk, Council of Europe**

The council of Europe, based in Strasburg, is the longest established European organisation, and aims to provide Europe with a common democratic and legal framework. It handles amongst other things environmental and risk prevention issues. The Eur-opa Major Hazards agreement is a cooperation platform on major natural and technological disasters. This agreement aims to tighten and revitalise cooperation between the twenty-five Member States in improving risk reduction and risk protection.

Eur-Opa held a meeting last September in the Ukraine on the topic of nuclear risks in Europe, and in Istanbul in October on natural risks and emergency situations. These workshops encourage public authorities and populations who live in risky areas to reinforce their capacity to anticipate and react to natural and technological disasters. Eur-Opa set up a European network of highly specialised centres on various aspects of risk : coastline, earthquake, risk and cultural heritage...

The executive secretary explained that climate change is not a straightforward risk or environment issue but an issue affecting all sectors in society. Global warming is in effect the fever of a sick planet. We must tackle the causes of this fever by deploying big resources, because climate change will have major repercussions on the economy, populations and risks.

“To great ills, great remedies” stated the Council of Europe representative. In the image of Roosevelt relaunching the economy with his New Deal, he advocated a change of model, and the establishment of an ambitious policy for Europe in tackling climate change in a realistic way whilst investing in coping strategies.

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## Q & A Session with the floor

**Philippe Boullé** : There are parallel risk management tracks depending on the type of risk : terrorist risk for example, or companies, according to the sector involved. Every track appears to operate totally independently without taking on board the approaches and actions of other tracks. Is it possible to globally manage natural disaster, technological risk and other threats; how then do we involve all stakeholders and link together things that are not of the same type and that do not involve the same reasoning ?

**Salvano Briceno** : We cannot solve every problem and risk at the same time, but we know enough about natural risk and have enough skills to reduce this risk. Arms producing countries must consider the risks they are creating by distributing their weapons throughout the planet. Terrorist risk is important but we still lack knowledge. We focus on natural risk because it's one thing we can solve, and it would be unforgivable to lose lives through inactivity.

**Dr Yvan Obrusnik** : From now on, we are linking climate change with natural disaster. We need more information from climatology and meteorology centres, because most natural disaster is due to weather. How do we improve this cooperation ?

**Salvano Briceno** : This collaboration is crucial, and we learn a great deal from our main sources of information, the weather offices. We must understand the hazards in order to appreciate the consequences and socio-economic impacts and be in a position to reduce them globally.

**European Commission** : The theme of the next global platform will be resilience. Could the following one cover synergy of effort ?

**Salvano Briceno** : The role of the global platform is to ensure the implementation of the Hyogo action framework in its entirety. This year, as the first global report on risk reduction is about to be launched, the theme of resilience is highlighted in tackling vulnerabilities that are increasing poverty throughout the world.

**Steve Barnes, Civil Contingencies Secretariat, UK** : Do we all too readily leave behind the “natural” adjective in disasters ? The major risks in the United Kingdom are avian flu and flu, two natural risks that actually have no link with climate change.

**Salvano Briceno** : Natural disaster pandemics falls under the definition of international strategy, but the WHO handles them with the support of scientific knowledge and a body of experts, and we do not intervene in the area of health. These health risks are taken into account and society is well prepared, unlike natural hazards linked to climate and geology, for which society is inadequately prepared on the pretext that they are natural hazards.

## **Economy and resilience sequence**

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### **Session one : Speeches on the economic framework**

**Chairman : Pascal Dupuis, head of the climate and energy efficiency unit, DG Energy and Climate, Ministry for Ecology, energy, sustainable development and land use.**

Pascal Dupuis expressed his wish that the AFPCN be formally thanked for organising this conference on a subject that has been sharply brought to the public consciousness. At the MEEDDAT, the directorate general for energy and climate gathers together all the skills on climate change in France, and all those related to energy. This DG has two major arms : the energy production and energy distribution unit, and the climate and energy efficiency unit. This second unit managed by Pascal Dupuis was set up by the cross-ministerial commission on greenhouse gases, the national observatory on the effects of global warming, and units from five other DGs managed by three ministries : Ecology, Industry and Equipment. The energy and climate DG is in itself a revolution in organisation. France is a Europe pioneer of this type of this arrangement, and may lead the way- the United Kingdom has recently set up a State secretariat for energy and climate, in a bid to tackle climate change.

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**Professor Erwann Michel-Kerjan,  
research director at the Wharton Center for  
Risk Management and Decision Processes (USA),  
associate researcher at the Ecole Polytechnique  
(France), president of the high committee  
on large-scale disaster (OECD).**

Erwann Michel-Kerjan is in an ideal position witness to the major shifts in approaches to climate change currently occurring in the States. He focussed his speech on the economic aspects of the problem by mentioning in particular the losses suffered by insurers. He noted that for the last 20 years, from 1970 to the 1980s, levels of damage were relatively stable, but rose dramatically thereafter. This accelerating trend of disaster has overturned the insurers' economic models : since 1970 of the twenty major disasters that have been the most costly for insurers, all happened after 1990, including ten since 2001, nine of which were in the US.

Every time a major disaster occurs, the public and private sectors begin a battle to determine responsibility levels for each side. In the States, the President must declare a state of disaster in order release funds for repairs. The speaker noted a growing long-term trend in these declarations, including a significant rise during presidential election years, in a bid for popularity with voters.

The States suffered seven major hurricanes in fifteen months, radically altering Americans' viewpoint and their perception of climate change. In order to understand the evolving costs of disasters in the States, Erwann Michel-Kerjan gave the meeting a few figures. The increasing urbanisation of large cities such as those in Florida, is a problem : the population, mainly made up of the wealthy retired, doubles every fifteen years; it grew from 2.8 million in 1950 to a projected 20 million in 2010, thereby concentrating assets in an area particularly prone to hurricanes. The question is being asked of whether the opportunity to live in areas threatened by such large climate hazards should even exist. Between 40 and 50% of the American population lives in coastal areas. Following Katrina, a large-scale initiative was launched by the Wharton Center to gain from the lessons learnt in New Orleans in collaboration with around the fifteen of the largest insurance companies and nearly one hundred organisations and agencies.

The assets insured in a ten-kilometre strip along the coast have been assessed. Two States particularly stand out : Florida, with 2,558 billion dollars in insured assets, and New York State with 2,378 billion dollars.

The speaker estimated that in the insurance sector, a few ground rules had to be respected, such as the fact that the insurance premium should reflect the level of risk (which is not the case in France) if a policy of risk and vulnerability reduction was to be encouraged.

A study was carried out by the New York Times into how Americans living on the coast had reacted to the seven hurricanes battering their coastline, and how they had protected themselves : more than 80% had done absolutely nothing to adapt and reduce their vulnerability.

Erwan Michel-Kerjan estimated that one of the possible solutions for these risky areas would be to draw up very long-term insurance contracts.

In conclusion, the speaker quoted the economic report to the US president that outlined the main themes and axes of economic action for the country, in which for the very first time a whole chapter was devoted to the prevention of major disaster, henceforth a major issue for the US.

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## **Stéphane Hallegatte, Economist, Centre international de recherche sur l'environnement et le développement (CIRED) and Météo France**

The problem of climate change and adaptation will not be solved solely by the specialists and scientists working in the field, but through the involvement of all the actors and all the established coping strategies, explained Stéphane Hallegatte in his introduction.

Coping strategies can prove extremely effective in reducing risk, according to areas and sectors, but are also at times completely ineffective. An optimal policy on climate change rests on the twin pillars of reducing emissions and coping.

In order to illustrate the effectiveness of coping strategies, the speaker cited the case of coastal flooding in the Netherlands and New Orleans, two areas that area already undergoing the type of flooding that may eventually affect all the world's coastline.

In order to respond to the risk of flooding, the strategy established by New Orleans is a purely technical one involving improving the city's defenses ; this strategy appears

ineffective, and risk increases year by year due to subsidence of the ground. The more time goes by, the higher the levels of vulnerability. The Netherlands experienced a large flood in 1953 : response to it was more institutional than technical, based mainly on the implementation of acceptable risk limits and undertakings by the State to guarantee the population never to have to live below a certain level of risk. The risk level is therefore controlled, and unlike in New Orleans, if risk increases the authorities do not wait for a disaster before taking measures against it. Responsibility in risk management is not challenged only when disaster strikes, but can also be challenged as the result of a risk analysis that shows that the population is undergoing illegal levels of risk. Such a method enables a known level of risk to be maintained that is understood and accepted by the population even if hazard levels rise. In this way, coping and risk management are not merely a financial and technical issue, as was demonstrated in the US case, but also harness institutional and legal responses.

Climate change is very long-term process, of which the main effects should become apparent during the second half of the century. Coping demands a great deal of anticipation, particularly in some infrastructure programmes such as water management, energy management, flood defences, etc... We must take risk change into account from now on, and establish a policy that aims to lower vulnerability levels by 2050. Within the next decade, France will invest 1,000 billion Euros in long-term climate sensitive infrastructure; there is everything to be gained from making these infrastructures as resilient as possible.

We do not yet know what the climate will be in Paris in 2070; according to some estimates, it may resemble the climate of modern-day southern Spain. A similar level of uncertainty hangs over precipitation levels, according to prediction models. Architects must change their habits and design infrastructures and buildings that are able to deal with a much wider range of climates.

Long-term ongoing climate uncertainty should not be an excuse to do nothing about coping. Strategies can be conceived of that reduce vulnerability to climate change even in current uncertainty levels. The speaker underlined the fact that risk management is a win-win strategy that can be applied despite uncertainty.

Another crucial point is the importance of “soft” strategies that deal more with financial, institutional and legal changes, and with behaviour and education more than with new infrastructure and hard protection.

The CIRED has carried out assessments of indirect losses following a disaster, and has concluded that indirect loss is minimal in the case of small-scale disaster, but increases

considerably in proportion with the gravity of the disaster. In the case of Hurricane Katrina for example, there were 100 billion dollars of direct loss, plus 50 billion of indirect losses.

Mumbai in 2005 suffered from flash flooding that killed over 800 people. In that case, indirect losses were high and hit the population hard. Studies showed that this cost could have been reduced had the risk of indirect losses been taken into account, and if the insurance industry had been better developed in the country. On top of dikes and drains, changes in habitat and land use can also contribute to reducing risks, both in Mumbai or elsewhere.

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## **Dr Jean-Jacques Wagner, Expert in natural risk, PLANAT**

PLANAT is the Swiss platform, set up by the federal Council to assist the government in developing a new natural disaster reduction strategy. Natural disasters in Switzerland are mainly linked to storms (eg Lothar in 2005), flooding (30 %), thunderstorms, avalanches and landslides. The 2005 flood caused around 2 million Euros' worth of damage. Most of the Swiss population has little awareness of natural disaster, and is not preoccupied by it as they feel safe on the whole.

A national study was carried out on the cost of protecting the population against natural disaster over a five-year period, by including all the actors taking part in risk reduction. The result is that every year on average, Switzerland invests 2 billion Euros in protecting against natural hazards. The private sector plays a large role in investing in risk reduction : 1.2 billion Euros comes from insurance companies, private companies and households; 0.8 billion Euros comes from the public sector, including the Confederation (16 %), the twenty-six Cantons (11 %), and the communes (14 %). The spending added up to 0.6 % of the GDP (?), ie 270 Euros per person per year for the country's 7.5 million strong population.

Nearly 45% of the investment is set aside for prevention, but since good risk prevention does not make good news, it is always difficult to argue in favour of continuing prevention efforts, explained Jean-Jacques Wagner. Out of the annual 874 million Euros devoted to prevention, investment is very unevenly distributed between hazards. The Cantons and the Confederation do not take part in reducing extreme temperatures, but are very present in

flood reduction. Only the private sector is present in the storm risk and has a major part to play in earthquake investment.

The Confederation invests 60 million Euros annually in flood protection, 25 million against avalanche, and 40 million for forest protection. Government budgets still need to be increased in order to support risk reduction efforts.

The speaker explained that the cost/benefit analysis of investment in prevention needs to be studied even if the low number of victims is a response to a purely financial approach.

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## Q & A session with the floor

**Question** : the cost/benefit analysis is interesting- could the figure of 0.6 % of GDP be put forwards as a European standard figure?

**Erwann Michel-Kerjan** : After the 2004 storms, comparisons were drawn up between houses built before and after the introduction of building standards in Florida. This is a good way of measuring the effectiveness of mitigation methods. The difference stands at around 60 %.

**Swenja Surminski, ABI, UK** : In your presentation, Stéphane Hallegatte, you advocated “soft” coping mechanisms. You stated that insurance is a “soft” option, but there are plenty of links with “hard” options to force insurers to take concrete measures. The alternatives surely should not be either take out insurance or cope. There must be a halfway house between the two.

**Stéphane Hallegatte** : Insurance, planning and land use are “soft” options. However, there is not really a distinction between “hard” and “soft” measures, as it is useful to use a mixture of the two when attempting to change location and type of housing. I favour the “soft” approach, as in climate change, we work a lot on coping but neglect this other option.

I would like for my part to ask Mr Michel-Kerjan if there other incitement measures in place in Florida to shift the notion of risk away from a financial one linked to insurance premiums?

**Erwann Michel-Kerjan** : The French and Spanish systems, with their obligation to take out insurance, work pretty well. If we want insurance to be a motivating force we need to work on making it more attractive. Could we not move from a standard annual contract to a long-term insurance programme : adding to the cost of a house, in Florida for example, the cost of long-term insurance that lasts as long as the mortgage taken out ? A second loan would be added to this first one; this would be used to offset the cost of insurance premiums. This virtuous system, studied by Wharton University would benefit everyone involved : banks, insurance companies, owners. This system is not yet being implemented in the US but trials on flooding risk are going to be carried out by the Department of Homeland Security.

## **Second session :**

# **Partnerships between public authorities and insurers on sharing flood zone information risks**

**Chairperson : Stephane Penet, director of insurance and responsibility at the French Federation of Insurance Companies (FFSA)**

Flooding represents the most devastating risk for valuable assets, despite also being the most predictable and preventable, said Stéphane Penet in his introduction. The data and information that underpin this flooding problem are held by two main actors : the State and the insurance industry. The State and public authorities hold part of this information through their decentralised services, census data and prevention policies. Insurers hold more economic data, including historical disaster information, and have access to models for some types of disaster. There is a fair amount of mutual distrust in dealings between State and insurers. Public authorities' remit includes protecting people and belongings against natural hazards, and fear that if they pass on too much information to insurers, they will begin to pre-select and create uninsured areas. The insurers for their part, subject as they are to laws of the open market, view information as a competitive advantage and balk at making it public.

Recent disasters have been particularly costly for insurers and public authorities; for this reason the prospect of an increase in numbers of natural disaster brought about by climate change argues for a new approach in the future in which mistrust must give way to a win-win partnership in driving forwards risk reduction.

The session will put forwards three case studies of public-private partnerships (PPP) set up to share data on flooding hazard areas for the benefit of risk reduction and the insurance industries in three countries : the United Kingdom, Austria and France.

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## **United Kingdom**

**Dr Swenja Surminski, Counsellor for insurance and meteorological risk reduction at the Association of British Insurers (ABI)**  
**Aidan Kerr, Head of investment and funding at the Environment Agency**

Swenja Surminski began this joint presentation by explaining that the British insurance system is linked by a statement of principle into a partnership with the government. Insurance is not compulsory but 92% of British households have taken out private insurance against flood risk. Insurance companies are free to set their premiums without State intervention.

The statement of principle is a basic structure in the United Kingdom : an agreement was set up after the 2007 floods, but after the insurance companies faced a 3 billion GBP payout, the agreement was revised between private insurance cover and the State's undertakings on risk reduction.

Aidan Kerr then spoke about the exchange of information between insurers and the government that helped to better outline the risks. 10 % of the territory of England and Wales is potentially affected by river or sea flooding. The Environment Agency has at its disposal two strategic tools in managing this risk : the flood map, and the national flood risk assessment (NaFra). These tools give every UK citizen the opportunity of learning the risks in order to be better prepared against them. They are also used by those involved with land planning in risky areas. NaFra takes into account the location, type of flood defence and vulnerability of the protective measures, and defines three categories of flood risk probability : green, orange and red.

It is crucial that the government shares its information with insurance companies in order to better assess the flooding risk of dwellings to be insured. The State develops a strategy of long-term investment in flood risk, which is implemented in different ways : better information and real transparency among stakeholders on long-term risk and the priorities outlined. The authorities also attempt to improve their efficiency via operators and the private sector, develop partnerships and improve flexibility, in order to adapt to socio-economic constraints and climate change in England and in Wales.

In conclusion, the speaker explained that the insurance sector is a crucial operating partner for the country and a major factor raising the awareness of the end client.

Transferring risk to insurers is allowable only if accompanied by effective risk reduction and risk information policy, added Swenja Surminski.

Insurers are work towards integrating resilience into their contracts; the main idea is to stop considering the short-term for risks that demand a long-term approach. In the face of climate change, only this partner-based approach has enabled the challenges of the future to be tackled successfully, the speakers said in conclusion to their jointly delivered speech that illustrated the successful partnership.

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## **Austria**

**Dr Thomas Hlatky, head of damage insurance unit, Grazer Wechselfeitig Versicherung AG, chairman of the Non Vie steering committee at the CEA**

The Austrian insurance sector acknowledged the devastating effects of climate change during the extremely costly floods of summer 2002. It decided to seek help from the State and develop a partnership -until then no information had been available to insurers on risks, and there was no designated person to deal with the authorities on this subject. There were therefore an interest shared by both the insurance sector and the authorities in mapping the risks. Insurers spent 1.3 million Euros on launching the HORA programme (Hochwasser Risikoserien Austria) that brought together many different partners fully aware from the start that this risk mapping PPP was not a commercial venture.

For a long time common sense meant that people avoided building in flood risk areas, but these areas have gradually been built on over the last few decades.

The mapping scheme uses different colours to code risky areas, based on river flooding stats for every hundred years. The HORA site has had 75 million visits since June 2006

although the Austrian population numbers only 7 million people - this proves how involved the population is with risk prevention.

The HORA does not cover only the risk of flooding but also of lightning, hailstorms, snow, and is increasingly internalised and taken into account by the population. Thomas Hlatky noted that in order to adequately cover insured parties, transferring risk to insurers requires a very detailed knowledge of the risks.

HORA has represented a successful first step in this PPP by taking better account of the risks and natural disasters in order to better raise awareness and protect populations against the impacts of climate change.

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## France

**Frédérique Martini, Head of the office of Meteorological risks (DGPR) Ministry for Ecology, energy, sustainable development and land use**  
**Roland Nussbaum, Director of natural risk unit (MRN), a joint FFSA and GEMA venture**

Frédérique Martini summarised the areas of cooperation in France between the insurance sector and public authorities on the issue of flood risk reduction. To explain this, the speaker presents two examples of projects currently underway and upcoming, Cartorisque and a cost-benefit analysis : these are part of a cooperation set up with the twin aims of reducing flood damage and optimising investment in risk reduction.

The public risk reduction policy has been improved in France with the entry into force of the European flood directive; this imposes a duty to inform the public and opens up new areas of cooperation. The Aarhus Convention also plays a part in disseminating knowledge whilst guaranteeing the public better access to environmental information.

Cartorisque is a information tool on the major risks, that will, via open Internet access, supply flooding area maps, information for “purchaser and tenant” information for house

transactions, and Risk prevention plans (RPP). This tool is very widely used by insurance professionals, who are able to simply download the information.

At the other end of the scale, the use and exchange of private data is being implemented via the cost-benefit analysis tool; this assists the public authorities in optimising investments and defining priorities in developing flooding reduction policies. The insurers supply data on the potential cost of floods.

Frédérique Martini handed the podium over to Roland Nussbaum, after underlining the need to carry on this public-private information sharing cooperation process.

The head of the natural risk unit told the floor that in France, home and possessions insurance has since 1982 included a compulsory extended cover against natural disaster. The law anticipated at the outset a link between the right to compensation and the duty to prevent, by setting up a regulated zoning that is included in the RPPs. These plans are part funded by the Barnier natural risk reduction fund that is itself funded by retaining part of the extra natural disaster insurance premium. This is an early kind of PPP.

In the face of a rise in damage, insurers have taken upon themselves to set up a dedicated structure : the Mission of insurance companies working for the knowledge and prevention of natural disaster (MRN). Cooperation with public authorities happens via Cartorisque that is used as a reference tool for public data and to develop partnerships. The natural risk unit mainly uses public information on hazards to provide knowledge to the profession. This operates via an observatory on exposure to professional challenges set up for institutions, that carries out studies on the effects of climate change and on the relevance and effectiveness of RPPs. The unit also offers insurance companies an intranet geological service with extra features over and above what is available on Cartorisques in assessing the risk exposure of a site to be insured.

In conclusion, Roland Nussbaum stated the expectations from developing cooperation projects with public authorities : an extended and more coherent cover of the whole territory in advance of the 2013 deadline; this is also the case for the RPPs. This cooperation should cause partnerships to be developed, to ensure the best prevention by allying State and regional authorities' efforts in improving their data quality and dissemination among users. The European directive encourages a systematic approach, taking into account all the social, economic, and environmental effects of flooding. Insurance thus plays a part via its public-private partnerships in exchanging and optimising knowledge of hazards and vulnerabilities.

## Q & A session with the floor

**Stéphane Penet** : We can see that information exists but is difficult to consolidate, conciliate and model to make it more manageable. We insurers have understood that unless we cooperate with public authorities, no-one else will.

**A quick question for the British** : How is information on zoning transmitted to insurers by the Environment Agency?

**Aidan Kerr** : We work with the Association of British Insurers in coordinating all the information on insurance, but in terms of intellectual property this information mostly comes from the Environment Agency. This information is public and freely available to all.

**Question** : What policies do insurers use to encourage resilience against flooding among householders?

**Stéphane Penet** : These policies are at present practically non-existent. French law makes insurance compulsory for everyone in France. Insurance has no say in this political decision on natural disaster management. It can play a greater awareness-raising role with companies as the price of insurance premiums permits it. We must either play the complete English-style freedom game, or we use the solidarity method deployed in France. Insurance has no say in this choice but has to adapt to it.

**Swenka Surminski** : We clearly have a role to play in the area of communication over risk. The insurer must inform their clients of the risks and encourage them to protect themselves better where necessary. It is this type of debate that we must set in motion at the time of renegotiating the annual insurance premium.

**Aidan Kerr** : What underlies our agreement in the United Kingdom is the win-win approach. Encouraging resilience measures among individuals can help to reduce the risk, which is beneficial to both the government and insurers. Beyond individuals, risk mapping must also be improved for critical infrastructures. This is a crucial topic as two recent major floods have proven that there are still major deficiencies to palliate in this area. We are actively working on this.

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## **Round table discussion : a path to resilience for Europe?**

**Chairperson : Christian Kert, member of parliament, deputy for the Bouches-du-Rhône area department, vice president of the AFPCN, rapporteur for the parliamentary office for the assessment of scientific and technological choices.**

This round table debate concluding the three days of this conference has asked about the possible pathways to resilience in Europe. Hazards and crises are not inevitable, and it falls to Europe, with its experience and risk culture, to implement the best strategies in mapping out a joint response and finding joint resilience resources. Resilience in ecological terms is the capacity of an ecosystem or a species to revert to normal behaviour after a crisis. It may be defined as the opposite of vulnerability, explained Christian Kert by way of introduction. The various speakers at the round table will bear witness and contribute their experiences in tackling this issue of resilience.

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**Christine Lagarenne, deputy director of the Sustainable development service at the MEEDDAT**

The representative of this new and cross-disciplinary unit at the MEEDDAT will address this notion of resilience to natural disaster through the perspective of sustainable development ; the unit promotes sustainable development among socio-economic actors and public authorities, explained Christine Lagarenne in her introduction. The definition of sustainable development, as outlined in the Brundtland report, is to “respond to the need of current generations without compromising the ability of future generations to respond to theirs”.

Resilience is a sustainable development approach in the sense that that is enables a response to a potential crisis to be planned, by organising and developing systems

within society such as town planning and institutions. This requires preparation against future threats that are as yet unidentified but that we know are inevitable. Sustainable development and reinforced resilience are two practises that benefit from a long-term perspective. They rest on the same three pillars : social, environmental and economic. In these two approaches, the micro and macro levels go hand in hand. As was pointed out by the minister at the start of this conference, sustainable development and resilience are both a local and a global concept, and can only be effective if the relationships between the stakeholders –State, ministries, NGOs, organisations and insurers both at the national and international levels have been adequately thought out. Implementing these two concepts can only be carried out with the participation of all the local actors. The sustainable development unit works towards with this aim in mind along several axes : a research directorate is the French representative for European programmes such as Eranet flood that coordinates research programmes on flood risk for eleven European countries. The CGDD also promotes sustainable development charters with involved parties, and makes data available in improving risk awareness. Some studies have been carried out, such as the insurance scheme called “How can insurers encourage natural disaster prevention in France?” presented here for the first time by Christie Lagarenne.

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## **Pierre Verger, member of the prevention and precaution committee, deputy director of the PACA regional health observatory, INSERM**

The prevention and precaution committee (CPP) is made up of around twenty experts, is hosted by the MEEDDAT and has three functions :

- contributing better to basing ministry policies on the twin principles of precaution and prevention ;
- monitoring and issuing warnings on health problems linked to environmental problems ;
- ensuring the link between research and scientific knowledge on the one hand and regulation on the other.

The speaker focused his speech on the health and social consequences of disaster. Health consequences may be somatic, very diverse, occur in the short or long term, and can depend on the type of disaster and the protection steps taken during and after it. Consequences can affect mental health, bringing about depression, anxiety, post-traumatic stress, again in the short and long term. Assessments on the issue are still inadequate, noted Pierre Verger.

Social consequences can include loss of accommodation, material loss, loss of employment, family breakdown, closure of schools and businesses. Feedback sessions after the AZF factory explosion showed that victims can find themselves competing in responding to the disaster. Material problems mean that health issues often have to take a back seat, heaping disaster upon disaster. Again, there is not enough long-term assessment of these effects. These consequences do not affect everyone in the same way : mental health effects are more pronounced if there are pre-existing psychological problems and in disadvantaged social groups. Disasters really highlight social inequalities : the sick, the disabled, the isolated, and the vulnerable and particularly exposed.

The speaker underlined the need to better prepare for assessing the effects of a disaster in order to respond to it in an emergency, but also to better prepare for it in the future through feedback sessions (epidemiology, risk assessment, environmental sciences, social sciences, etc...) Assessment is also crucial in identifying victims and in the democratic debate process on land use and environmental law.

In order to better evaluate the effects of disaster, Pierre Verger said that it was crucial to be prepared before the event. Mandated by the Ministry in 2006 to study the subject, the CPP has published a document that will be handed out to those attending the conference, called "Environmental disasters : drawing up assessments of their effects and using feedback" ; this report recommends developing a database, reinforcing the coordination and synergies between the various actors, developing the training of those who will be called to act in the future, particularly by means of systems testing exercises, and to take advantage of and disseminate further the lessons learned from these feedback sessions.

It is crucial to be able to learn wide-reaching lessons on how well society is prepared to manage the effects of disasters, as it is the only way to begin a public debate on the topic.

The speaker quoted the presentation from Jean François Grelier, founder of "Collectif des sans-fenêtres" an AZF victims' association, that proved that a disaster reveals inequality; the State has a crucial role to play in compensating for these inequalities.

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## **Patrice Dallem, Director of emergencies and first aid, French Red Cross**

The Red Cross has 92 million volunteers in 186 countries and operates in disaster areas via the High Committee for Refugees in war zones and via the Red Cross federation. In France, the Red Cross has 45,000 volunteers, including 10,000 first-aiders who are active during all natural disasters.

The 1999 storm was the first conscience-raising climate change event, followed by flooding in the Somme, the heat wave, the Haumont tornado that razed 200 houses ; all disastrous events that were previously unheard of in France. During all these natural disasters, nothing has indicated any real progress in resilience among populations, apart from in areas faced with regular flooding.

Instead of reducing risks, we are still under-informing people on the reality of risks, said Patrick Dallem, whilst simultaneously approving planning in flood or mudslide risk areas. There is still a huge amount of education carry out among citizens in introducing the concepts of risk reduction and resilience into society. A virtuous circle would be to train citizens, who would elect representatives whose policies matched their own worries and beliefs about risk.

“How do we build resilience?” asked the Red Cross representative. Firstly through suffering; a victim of a natural disaster will ensure that they are ready for the next one ; by training citizens and through exercises; by the campaigning of victims such as those involved in the AZF factory disaster, who simply want to get back to normal after such a trauma.

The 2004 law on civil security encourages every citizen to become an actor in their own security. To achieve this they must be trained throughout their life to face situations which State is not capable of managing alone, due to a decrease in funds and to the multiplication of natural disaster. The law states that children should be taught at school about risks and best ways to react to them. The Red Cross has created a website for Europe called “Disaster self-protection” in order to distribute information about how to protect oneself against risk. Alongside this site, the humanitarian organisation is to begin training people in self-protection, inspired by the training on the “steps that save”. Seven thousand people have already undergone this training on a trial basis. This training should be rolled out during the course of 2009 across the whole territory in order to spread the message to the population on the basic behaviours to adopt in the event of a disaster (warning, quarantine, evacuation, etc...) The French Red Cross will during 2009 launch a programme

called "Self-protection of children and the community" by involving older people, who will play an educative role among children.

On the humanitarian level, actions carried out by the Red Cross among disaster victims involve a lot of psychological support for vulnerable people, who need someone to listen to them. Actions will also include assistance for elected representatives, to whom the Red Cross will offer its experiences of crises and its human resources not only during the emergency, but also in the long-term by supporting fragile and struggling families made vulnerable by a disaster.

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## **Marc Gillet, director of ONERC (National Observatory on the Effects of Global warming)**

The national observatory on the effects of global warming aims, explained its director, to collect information, studies and research on the risks of global warming and extreme weather events, in order to distribute them among the government, local parliamentarians and the general public. The ONERC in 2006 produced a national adaptation strategy and is currently working on a national adaptation plan requested by the Grenelle Environment Round Table ; this will firstly involve analysing the cost of climate change.

The concept of resilience is interesting by encouraging reconstruction, but also gives the impression that everything is reparable, although some damage, as was mentioned in the GIEC report, are irreversible, such as human losses and damage to the environment and heritage.

Climate change risks were first identified on the global level. Climate predictions are more reliable on a global level than on a local level, which complicates coping strategies as uncertainty is greater locally. Internationally, coping has become more important. This is one of the four wings of the future Copenhagen negotiation, along with mitigation, technology and funding. The ONERC has put forward a coping strategy, passed by the government in 2006 : this strategy is broken down per sector, environment, resource, area; these four approaches lead to a more global, more exhaustive analysis of climate change risks.

The Observatory underlines the importance of knowledge on the issue of climate change and resilience. A cross-ministerial project is currently underway under the aegis of the ONERC, aimed at collecting all the data on the financial impact of climate change. This process is crucial in mobilising elected representatives over issues of coping with climate change, and raising funds to cover the anticipated costs.

The governance of resilience is extremely complex, and a European White Paper should tackle this issue to share responsibilities in a coherent fashion between the various levels, from Europe to the regions.

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### **Pierre Alain Schieb, councillor, project head at the OECD**

The projected OECD unit is looking ahead to 2030 in order to identify and explore questions that are central to governments. Work was carried out in 2003 on emerging risks that gave rise to around twenty recommendations on public policies, of which some covered reconstruction and resilience. Starting from this principles table, around a dozen cases were studied in order to improve risk reduction and reconstruction. Every case is then published : the speaker cited a study carried out in 2005 in Norway on the protection of critical infrastructure, as well as the study to due appear in 2009 on the earthquake risk in Japan.

Pierre Alain Schieb then put forward a far more ambitious definition of resilience, that widened the concept of restoring the system to the concept of th capacity for self-organisation in the event of a crisis, going outside preset plans. This ambitious approach to resilience presupposes involving the whole of chain of involved parties, and strong capacities for improvisation.

The speaker noted that the OECD advocates a budget of 400 to 500 million \$ if we wish to achieve the capacity to quickly restore damaged systems, whilst taking more precarious financial resources into account.

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## **Alex Nickson, strategy manager for climate change adaptation and water for the greater London authority**

The London area was the first British urban area to establish a climate change adaptation strategy. Risks have been subdivided according to their level of probability in order to determine their vulnerabilities under different climate change scenarios and thereby determine priorities. Winters should be warmer and damper and summers drier and hotter. London, lying as it does on the Thames and near the sea, has considerable limits on land use ; adaptation is therefore crucial. London is under threat from rising sea levels, from flooding from the Thames and its tributaries, from excessive levels of waste water and underground water. Some Thames tributaries have been concreted; in the event of large amounts of rain they would overflow in under two hours. Re-establishing natural processes could be the solution to some of the problems caused by poorly controlled urbanisation.

One and half million people, or 15 % of the London population live in the Thames flood plain, protected by the Thames barrier. One hundred thousand households are in a high flood risk area, in which the Association of British Insurers cannot guarantee people insurance at a reasonable price. Key infrastructures in the continuity of activity are also located in this flood plain : 75 underground stations, 14 % of the schools, 25 % of the police stations and 10 of the largest hospitals in the Greater London area are located here. To map the risks in such a complex environment, an index has been established to determine the risk factors that increase vulnerability and thereby define priorities in the actions to be implemented.

Systematic crisis has been studied : flooding has a repercussion on the electricity supply, which impacts in turn on the operation of hospitals, etc...

The speaker noted that due to the construction of the Thames Barrier, vigilance and the culture of risk prevention had noticeably regressed among the population. It is important to renew public awareness of the risks ; if and when a disaster occurs, only the most vulnerable would be rescued; the rest of the population would have to look after themselves. The population cannot count only on the State to respond in a disaster. Alex Nickson thereby agreed with the previous speaker on the need for self-organisation of populations in responding to a crisis in an emergency and ensure their own resilience.

In the event of flooding, a successful warning system has been developed by the Environment Agency; this warns the population of the level of risk, and monitors especially carefully populations identified as vulnerable. Finally, to encourage populations to adapt

their dwelling to flooding, advice has been distributed about how to reinforce houses. A resilient house also gains financial value compared to a vulnerable house.

In his conclusion, Alex Nickson insisted on the importance of adequately identifying levels of vulnerability in creating models, and of gaining a good awareness of the critical tipping point. The notion of resilience does not only apply only to the day to day; although the Thames Barrier protects London at the moment, but we must plan for the uncertainties of the future right now.

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## **Eric Morvan, director of major risk for the town of Arles**

Arles is a small town of 53,000 inhabitants located on the mouth of the Rhône river; it has the particularity of being the largest commune in France in surface area, and having this temperamental river running through it. The Camargue region has been protected by dikes since 1856; these were however breached by two floods in 1993 and 1994, causing major flooding. This was later found to be caused by poor maintenance. A mixed syndicate to maintain the dikes was then set up between local authorities, the Bouches du Rhône regional authorities, and the PACA region. Dikes must be maintained, because trees and animals digging burrows disturb the earth and undermine them. Earthen dikes must be passable by motor vehicle, to enable rapid intervention should a dike require emergency maintenance. A flash flood breached the dikes again in 2003, flooding the north of Arles and requiring the evacuation of 7000 residents.

A Rhône plan was set up in 2004 to warn of flooding along the whole length of the river from Switzerland to the sea.

The new ministry service Vigicrues will enable the population to be informed well enough in advance of any changes in the river. Arles is also served by a voice alert system, able to make 2500 calls every 15 minutes, and enabling vulnerable people to be warned, such as those who live in the flood plain of a river, and the livestock farmers in the Camargue. Flood evacuation, earthquake, and curfew exercises are carried out every month in the schools in Arles in order to train the population. Exercises are also carried out with residents via the voice alert system, in order to drill them in culture of risk and maintain permanent vigilance to the temperament of the Rhone.

Morgan Hervé-Mignucci, project head at the Climate unit, Caisse nationale des dépôts.

The caisse des dépôts is a banking institution with a public interest and territory development mission. The climate unit at the caisse des dépôts is a centre for study and research into the economics of climate change, into aspects of greenhouse gas emission reduction at the European and global levels, and into adapting infrastructures to climate change with the “Club Villes, Territoires, et Changement Climatique” project.

The speaker noted the issue of funding resilience at a local level, along with the problems of including uncertainties in climate change. There is however a whole range of funding mechanisms that are well known by local representatives. He noted the problem of conciliating at Member State level the various encouragement methods to invest in resilience. There are very diverse protection mechanisms between the State as buffer, intervening only in the last resort, the PPP and the regularly reviewed notion of acceptable risk, and the French system of franchises.

There is a great demand for innovation in funding at the local level. We can imagine a system in which some dwellings would be insured only if certain building regulations were respected that would be dictated by insurers, as is the case in Australia.

At the international level, there are financial mechanisms for international cooperation on climate change. The United Nations adaptation fund that is funded only by Kyoto credits, or assets that are realisable only on the quota market; this market has however collapsed with the credit crisis, withdrawing the funds from the adaptation fund. Room for manoeuvre can now be found in negotiating the climate-energy package, that enables the adaptation fund to ensure stable and sustainable funding for resilience at the international level by recycling its income.

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## **Christine Lagarenne, deputy director at the sustainable development unit**

To conclude this final round table debate, Christine Lagarenne reiterated the main ideas expressed during the debates : the importance of solidarity in the event of disaster, with particular attention to social actions with victims; support for populations via

economic assistance delivered as part of the emergency crisis management system, with institutions federating risks via the insurance system. Solidarity is implemented beyond people, particularly via local authorities, for public assets that are not insurable, for which the State deploys national solidarity, especially via the ad hoc programme. Some disasters do not benefit from public assistance, so finance laws set up in 2008 a solidarity fund of 20 million Euros per year, to benefit local authorities affected by natural disaster.

Apart from solidarity, the response is implemented by federating risks. There are three main models in Europe within the various compensation schemes for natural disaster:

- the private model, with a free competitive British style market;
- the model based on public intervention without competitive insurance market, such as in Italy;
- the model that involves a compulsory public, monopolistic insurance scheme, frequently topped up with direct public assistance. The part-public/part private French system is similar to this model, and runs by a combination of disaster expertise contributed by the insurance sector, with and a high proportion of public cover. The French system excludes no type of natural disaster, and national solidarity is expressed in three ways : a law creating a legal obligation to be insured against natural disaster, a Catnat extra premium paid at a fixed level by every insured person, and the national re-insurance fund that benefits from State backing.

Within the EU, Community solidarity can be concretised via NGOs such as the Red Cross, but also via an emergency fund, the European Union Solidarity Fund, that grants assistance to any Member State struck by natural disaster in order to help it financially to re-instate its uninsurable assets, mostly vital in tackling a crisis : transport, water, energy, communications and health networks. This solidarity may also be expressed by federating knowledge and resources through the centralised civil protection system, the Monitoring and Information Centre, that federates resources and warnings for the whole of Europe.

Christine Lagarenne concluded her intervention by reminding the floor that sustainable development is a federative, moral and concrete concept of resilience. The European development of platforms is a lever for reinforcing European resilience. The CGDD has declared itself ready to take part in a European network of risk economists.

**Yves le Bars** : the concept of resilience is federative, as has been amply demonstrated by this round table. It is a rich concept on which we must continue to work in all its dimensions : symbolic, functional and economic.

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## **Summary of conference and conclusion**

### **Paul Henri Bourrelier (AFPCN) : the lessons drawn from the scientific council of the AFPCN**

The AFPCN scientific council, made up of around thirty independent experts, has constituted the scientific and intellectual backbone of this conference over the last three days. It met just before the last round table; as a result of this meeting it is in the position as chair, to issue a statement in its own name.

From session to session, the idea that despite the ongoing uncertainties about natural hazards and the human disasters that ensue, the instruments required to respond to climate change are already in existence, and are supported by a solid body of experience.

We have been reminded that for the concept of resilience to be strengthened, it had to focus its priorities on governance, mobilising politicians and involving companies, area authorities and citizens.

We have all unanimously come to the conclusion that we had to continue exchanges of experience, even going as far as organising joint events and developing mentoring and cross-disciplinary approaches. This is the very reason for the existence of national platforms.

Several interventions revealed the fact that the top-down approach had some limitations. Since every authority cannot carry out an individual study on the impacts of climate change, local authorities must question their hierarchy on the knowledge and policies to establish on the subject of adaptation. It is crucial that the response be concrete and practical.

In the face of uncertainty, we must implement strategies such as the win-win one presented by Stephane Hallegatte, by calling on intelligent responses and bringing about a long-term adaptation strategy. Land use and occupation policies must be thought through right now, over time scales of at least 50 years, and must include the constraints of climate change.

This conference wished to reflect the diversity of approaches, cultures and elements at the European level. This diversity will undoubtedly constitute a great richness for Europe but it must be exploited.

In recognising the hazards, Paul-Henri Bourrelier underlines the importance of network vulnerability in a cognitive society in which knowledge has taken over from material aspects in the context of a global economy criss-crossed by communication networks.

Debates about the coastline and the example of Florida have underlined the increase in vulnerability along the coasts that leads to sharply increased risks.

The issue of the effectiveness of risk prevention instruments has been raised; although we know how to assess costs, assessing benefits is far more complex.

There is still progress to be made in human and social sciences. Resilience is the central theme around which it is crucial to build deep foundations.

The chairman of the scientific council considers it beneficial to study and combine examples of local governance in order to model disasters, as was well illustrated by the London case during the round table. The news over the coming months will be particularly heavy with directives and communications from the European Commission.

In practice, we must quickly widen the platform network that originated in three countries, to five then ten members. The AFPCN scientific council would like to widen its scientific network by requesting particularly of each platform in the network that it nominate a counterpart with whom to develop interfaces and increase exchanges. It will then be able to be support for the French platform in its future mission with the network. The EU must support this European national platform network initiative that contribute to tackling problems by climate change on the European scale, concluded the AFPCN scientific council.

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## **Closing session**

### **Laurent Michel, Head of risk prevention, MEEDDAT**

To conclude this conference, Laurent Michel drew up a quick summary. This meeting had twin objectives : to educate and encourage the exchange process at the level of European network of platforms both existing and to come. This conference has represented an important step in this expansion process. The Czech Republic anticipates during its EU presidency to work on the European White Paper, and Sweden has already planned a meeting for July 2009 on the topic of natural disaster and climate change. The MEEDDAT representative wishes that exchanges should continue in the spirit of this conference, by standing back in order to reformulate some essential questions whilst focussing on new challenges.

EC representatives have mentioned some coming initiatives in a field in which policies are particularly influenced by national competence : perspectives announced are however showing promise in improving community exchanges.

Climate change should not be seen as an object in its own right but as a paradigm that challenges public policy, such as adaptation and issues of increasing coastal vulnerability

Laurent Michel delivered up a few ideas and courses of action for the future:

- approaching prevention within territories and by territories:

The workshops revealed not only the particularities but also the similarities and identical measures in different countries. On the issue of flooding, via the European directive that encourages to share resources, and on mountain risks, with the Alpine convention, a reflection framework for collective approaches. The workshops also showed that from environment to environment, governance could either be very advanced, such as for large cities or rivers, or still need be in the design stage, as is the case for coastlines.

The question of the role of all the different levels has been raised : who decides? Who launches the policies and major strategies ? Who is able to implement them at the local level? Who is able to impose decisions ? How do the institutions, civil society and volunteers all operate with each other ?

- cross-disciplinary tools such as education, training, and legal issues are all tools that contribute to the decision-making process and the cost/benefit approach ; links with insurance companies- all these factors are crucially important, noted the speaker.

The round table on resilience showed that we could ally strategic reflections through examples of flood management strategies implemented by towns and cities like Arles and London. The OECD representative, along with the French Red Cross one, insisted on the interesting concept of developing self-organisation skills among populations in order to respond to disaster.

Debates have tackled all the aspects of the question, from local action, such as the case of the dikes in the Camargue, to the global, with the mention by the caisse des dépôts of the link between the quota market and adaptation funds.

- the European research area also hosts research on natural risks, in the interaction between hard and social sciences ; with this is confirmed the need to facilitate the move from research to tools and decision-making;

- beyond Europe, the action of reducing natural risk must be global, with essential North-South cooperation. The economic impact of climate change is particularly high in developing countries as their resilience level is much lower than in developed countries.

The debates have shown that every country has its own way of organising things : on the administrative level, at the level of civil society and the platforms. The main point is to work together to gain from the joint reflection process and the ideas of others and thereby gain in efficiency.

The platform network must remain open to change, flexible and open if it is to reach all the territories.

France, as successor to the DKKV, the German platform, will aim to animate and encourage concretely this network, stated the director, concluding this Risq-UE 2008 conference.



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