



**Regional Consultation Workshop
on the Commission's Green Paper
"Adapting to Climate Change in Europe –
Options for EU Action"**

Central Eastern Europe

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Chairman's Summary

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1 Context

This Regional Consultation Workshop was the second of four regional consultation workshops conducted by the European Commission with the aim to discuss the Green Paper "Adapting to climate change in Europe – options for EU action"¹:

- Northern Europe and the Arctic region: Helsinki, 27-28 September 2007;
- Central and Eastern Europe: Budapest, 15 October 2007;
- Westerns and Atlantic Europe: London, 29-30 October 2007;
- Southern, South Eastern Europe and the Mediterranean basin: Lisbon, 5-6 November 2007.

In parallel, an online consultation is being undertaken from 31 July to 30 November 2007. A summary report of the public consultation is planned for publication in January 2008. On this basis, a White Paper on adaptation is scheduled for publication in November 2008, with an impact assessment to be elaborated in parallel to the White Paper. The White Paper will contain more concrete suggestions for legislative and other Community action in the field of adaptation.

2 Research activities

Of the many European research projects that are already addressing the impacts of climate change and the development of adaptation strategies (see EEA presentation for an overview), a few were addressed in more detail during various presentations at the workshop. Of particular relevance to the Central and Eastern European (CEE) region are the projects within the 6th Research Framework Programme (FP6), CECILIA² and CLAVIER³, both running from 2006 to 2009. These projects aim at investigating climate change and its impacts in the region (the latter concentrating on Bulgaria, Hungary and Romania) by, inter alia, developing regional climate models, conducting high-resolution simulations and impact studies. Within another FP6 project, ADAM⁴, the Tisza river basin (Hungary) was chosen for a case study on adaptation.

All in all, Climate change science needs further research and data-gathering at regional and local levels in order to guide policy. This is especially true for the countries of the CEE region. Climate change phenomena are not always well understood. As an example from Hungary, two "climate paradoxes" were mentioned: the observation that the spatial distribution of weather extremes is different from their multi-annual peak positions; and the

¹ COM(2007) 354. Download and further information at:
http://ec.europa.eu/environment/climat/adaptation/index_en.htm

² Central and Eastern Europe Climate Change Impact and Vulnerability Assessment.
<http://www.cecilia-eu.org>

³ CLimate ChAnge and Variability: Impact on Central and Eastern EuRope. <http://www.clavier-eu.org>

⁴ Adaptation and Mitigation Strategies: Supporting European Climate Policy.
<http://www.adamproject.eu>

fact that while annual mean temperatures are rising, frosts are becoming more frequent. The need for more funding for field data collection was stated. In addition, a need for a better harmonised data collection, based on climate change related indicators, was identified. A particular problem is that data are collected at different scales and thus are not compatible with each other. The INSPIRE⁵ initiative was not expected to solve this problem.

3 Country activities

A number of European countries have started assessments of vulnerability and adaptation options to climate change, and/or started to develop national adaptation strategies. Within the region covered by the Workshop, the development of national adaptation strategies was reported from Hungary, Slovakia and the Czech Republic. The Hungarian national assessment of vulnerability and adaptation was presented in more detail.

VAHAVA⁶ was a programme on vulnerability and adaptation supported by the Ministry of Environment and Water and the Hungarian Academy of Sciences, running from 2003-2006. It served to prepare the ground for the development of a national climate strategy covering both mitigation and adaptation, which is going to be discussed by the Hungarian Parliament at the end of 2007. The two main objectives of VAHAVA were to prepare the Hungarian society and economy for a probably warmer and drier future, and to create a fast responding technical, financial and organisational system which is able to prevent, or handle the damaging effects of, extreme weather events. Public awareness, education and training issues were prominent among the recommendations of the project; mental preparedness of the population to extreme weather events was rated crucial in order to enable timely and adequate responses. Also with regard to extreme events, the establishment of a National Hazard Management Fund with both government and public participation was recommended. Further, the recommendations included proposals for the creation of market-based and non market-based local, regional and intersectoral insurance systems.

As a key conclusion from the national assessment and strategy preparation in Hungary, a triple consensus was found to be a prerequisite for implementing a sound climate policy and adaptation strategy: Political consensus in the co-operation of the major political forces; professional consensus in the agreement of experts on the most urgent tasks to be implemented; and social consensus on the necessity of timely action.

4 Vulnerable sectors

4.1 Water sector

Water shortage and floods were the two main climate change impacts discussed. Almost no comprehensive regional hydrological impact studies are available (the CLAVIER project

⁵ Infrastructure for **S**patial Information in the **E**uropean Community.
<http://www.ec-gis.org/inspire/>

⁶ Changing (**V**áltozás) Impact (**H**átás) Response (**V**álaszadás)

concentrates on Hungary, Romania and Bulgaria). It should be recognised that uncertainty is to some extent inherent in modelling.

The “good news” is that instruments of water management do not need to be newly invented. The existing instruments are suited to mitigate climate change impacts, but this requires that climate considerations are explicitly built in.

Using the example of the Czech Republic’s national adaptation strategy for the water sector, the following predictions on water abstraction can be made:

- In the households sector, increasing prosperity induces a higher stress on water resources, while most of the possibilities of water saving have already been exhausted.
- In the industry sector, there is growth on one hand, but on the other hand, advanced technology helps minimise water use and pollution. Therefore, on the whole, a reduction of stress on water resources is expected.
- In the agricultural sector, an increased occurrence of droughts and the restoration of irrigation systems may lead to higher stress on water resources.
- In the energy sector, on the one hand there is a higher efficiency of power generation due to technological progress, on the other hand there is the problem of water-cooling of power generators on hot days. On the whole, it is difficult to predict the implications for water resources.

The strategy foresees four main strands of action:

- Decreasing water consumption
- Use of advanced technologies (recycling, re-use, zero-pollution technology)
- Optimization of landscape management to decrease vulnerability to droughts
- Creation of water reservoirs for dry periods

Overall, it was observed that the discussion of water issues still does not address climate change aspects in sufficient depth. In the context of the Water Framework Directive, there is a need for more specific guidance to properly integrate adaptation into water management plans.

Moreover, the water sector in particular shows the need for trans-boundary co-ordination of adaptation strategies and measures. For instance, when dams are reinforced in one country to prevent flood damages, this may increase damages in a neighbouring country. Water basins should be the basic reference area for policies and planning.

The discussion about flood damages and insurance showed that suitable solutions still need to be found. In some countries, private insurance is not yet very widespread. This reinforces the need for state intervention. However, the use of public funds for people who suffered from flood damages risks rewarding them for the damage and creating no incentive for adaptation.

Often, the tendency is to rebuild everything in the same way and on the same place. This attitude needs to be questioned, even where there is an understandable concern not to lose historical places. Relocations of settlements may become necessary. Even where the location remains the same, much future damage can be avoided by applying “climate-proof” manners of constructing and planning (for instance, avoiding oil tanks and other risky objects in flood-prone areas; building mobile dams).

4.2 Health sector

In general it was felt that the health sector did not receive sufficient attention in the Green Paper, and that the Green Paper did not address health issues in sufficient breadth. Environmental and health issues are still primarily addressed by separate policy approaches, and much more integration is needed. A communication from the Commission addressing this issue (impact of climate change on human and animal health) is expected for 2008, as indicated in the Green Paper.

In particular, the interaction of climate and health issues in the built and working environment needs to be examined more closely. This touches upon urban planning (e.g. related to urban heat islands) as well as workplace regulation.

The interaction of climate change and health also requires more research. It is still a controversial issue how to count heat and cold-related deaths. While there are uncertainties related to the data on weather-related mortality, there is even more uncertainty regarding the influence of climate change on morbidity.

4.3 Agriculture, Forestry and biological diversity

Agriculture, Forestry and biological diversity are three very different systems in terms of adaptation potentials. Agriculture has the highest adaptation potential because it is already under human influence and is based on short time-cycles. The potential for adaptation in forestry is more limited, and in the area of biodiversity, adaptation seems almost impossible. It was felt that the Green Paper did not address the relevant issues for agriculture, forestry and biological diversity concretely enough.

There is a need for better research coordination in the agricultural sector, as there is likely a significant amount of overlap between current research projects at various levels. In particular, in order for scientific research to be more effective, there needs to be a better integration between research at EU and national levels and actors at the local level, such as farmers and local authorities. Adaptation is a task for farmers at the local level – they need to know what to do. A higher level of knowledge could be established both by top-down knowledge transfer and a bottom-up generation of scientific projects. Candidate countries, in particular, need to be better integrated in research networks and funding at EU level.

Regarding biological diversity, it was agreed that a deep change is needed in nature conservation policy. More resources are required in order to ensure species survival. The added pressure imposed on species and biological systems by climate change implies that other factors of pressure need to be reduced. In some instances, nature reserves (such as FFH areas) are concentrated in places and ecosystems that are the most susceptible to

climate change impacts (e.g. coastal areas). A mosaic pattern of forests, agriculture, grasslands is favourable for the conservation of biological diversity. This could be supported where intensive agricultural use is withdrawn from high risk areas, which are instead used for pasture or forestry. In contrast, an increased cultivation of energy crops could threaten biodiversity. Biofuels of the second generation, which are part of the Commission's strategy, could reduce the pressure from agricultural activities. In general, care needs to be taken to create synergies and prevent conflicts between mitigation and adaptation strategies. Agriculture provides a tool for carbon sequestration if agricultural land is properly managed; otherwise, agriculture will be a source of net greenhouse gas emissions.

4.4 Transport, Industry, Energy

Transportation, as well as other infrastructures, were recognised as being an important issue with regard to adaptation. With respect to *energy* generation, water shortages in dry and hot summers was mentioned as an outstanding problem. This perspective may influence investment decisions on future hydropower stations in the region, e.g. funding from the World Bank in Romania and Bulgaria. The changing climate may also lead to increased energy consumption: The need for air conditioning in summer may drive up peak electricity demands.

As part of an adaptation strategy for the transport, industry and energy sectors, the elaboration of *guidelines and new standards* was highlighted as a useful and needed tool. Good practice guidance was recommended, inter alia,

- for spatial planning, with the aim to cope with the risks of climate change and to identify opportunities linked to climate change.
- to assess the climate risks for infrastructure and industrial installations
- for emergency in case of extreme weather events

The need to develop new standards was identified, inter alia,

- for the stability of roofs to be safe against heavy snow fall,
- for the temperature range that road pavements and rails have to cover, as well as
- standards for siting criteria of infrastructure and industrial installations

New *design criteria* for the built environment are needed, including buildings and transport lines providing a high level of resilience in case of extreme weather events. In addition, new *insurance solutions* need to be developed, that would set incentives to further increase the resilience of existing built environment.

This list was felt to be a quite arbitrary choice of possible measures, but may be a first step towards a more comprehensive list.

5 General discussion and recommendations in the context of European and national adaptation strategies

The *need for adaptation* was confirmed through these discussions. Inaction is not acceptable due to the high risks associated with climate change impacts. Action is required at all levels, from individual enterprises and local communities to the global level. There was a concern that the pace of rising awareness and implementing adaptation measures is too slow. A number of *barriers to adaptation* were identified, which may be summarised as follows:

- *Limited awareness* is still a problem. At present, only few people perceive climate change impacts as a real problem. In many cases the political will is not yet strong enough to overcome barriers. Increased awareness is needed in order to effect otherwise unpopular measures. Politicians will need public support, or they will not take appropriate measures. The identified *lack of financial and human resources* and of adequate *institutional capacity* is partly due to the level of economic development of the states in the region, but is also connected to the relatively low political profile of climate change issues in these countries.
- *Insufficient knowledge base*, limited scientific understanding and inadequate research: Even where climate change is recognised as a problem in principle, concrete steps to adaptation require much more precise knowledge about regional and local impacts, which is in many cases not yet available. This includes a poor knowledge on uncertainties and probabilities of scenarios. In addition, without thorough cost-benefit analyses the take into account costs of inaction, it will be difficult to costly adaptation measures vis-a-vis the public and especially business. It also has to be recognised that given the long time-frames of climate-change impacts, adaptation methods may actually have little short-term benefits, and opportunity costs are perceived to be too high.
- Another problem is that adaptation is a *complex and broad issue* which requires many actors to be involved. Adaptation requires new thinking and new forms of co-operation within and among institutions, and across national boundaries. Unclear competences may delay action. Appropriate methods and tools for adaptation still need to be developed.

Adaptation policies cannot be developed in isolation, but need to be treated as a *cross-cutting issue* and mainstreamed into a broad range of policy areas. This also requires the *involvement of civil society and business*. The fourth pillar of the green paper (“Involving European society, business and public sector”) should be strengthened. As it is presented now, it almost looks like an afterthought. Conflicting land use requirements (e.g. the establishment of catchment areas in competition with economic interests as well as nature conservation) were highlighted as one area where a fair balance of interests needs to be achieved and the co-ordination of mechanisms at a higher level is needed.

Particularly with regard to EU funding (structural funds), care needs to be taken to build adaptation aspects into *sectoral funding decisions*. However, for the present funding period (2007-2013), Member States’ Operational Programmes have already been approved and Strategic Environmental Assessments have been made. Possibilities for adjustment remain mainly at the project level. Major adjustments in funding guidelines will have to be made for the financial period beginning in 2014.

Scientific basis of the Green Paper:

It was urged that the scientific basis of the Green Paper be made very transparent, e.g. the PESETA study and its methodology. Concerns were expressed about whether the maps and indicators presented in the Green Paper and its Annexes were really representative. It was felt that the maps showed different levels of detail across different regions of Europe, which reflects different levels of knowledge for different regions (Eastern Europe being underrepresented). Further downscaling of data was said to be needed in order to highlight regional impacts. Although the definition of vulnerability provided in the Green Paper (Annex 5) was found to be completed, it was criticised that not all parameters mentioned in the definition were really addressed in the Green Paper. As an example, more attention is required for socio-economic factors and the adaptive capacities of regions. Vulnerability of regions is an important political issue because vulnerability assessments may imply a redistribution of resources within the EU. Furthermore, in order to support decision-making, uncertainties of scenarios needed to be provided. A periodical review of the information underlying the Green Paper (or the future White Paper) was recommended as scientific knowledge is increasing rapidly.

Aspects missing in the Green Paper:

A few aspects were found to be missing or underrepresented in the Green Paper and should receive more attention in the further development of adaptation policies:

- Since the worst consequences of climate change are likely to occur (or are already occurring) in developing countries and EU countries have a major share in historic responsibility for climate change, a more pronounced EU commitment should be made to *support adaptation in the developing world*.
- The characteristics of urban environments and the challenges imposed by climate change on *urban planning* are not specifically mentioned.

In some instances, the *connection between climate change adaptation and mitigation* was highlighted. Sound adaptation strategies would avoid increasing greenhouse gas emissions in reaction to climate change impacts. One example of where this already occurs is the energy-intensive generation of artificial snow in the Alpine region. Another example is the increased use of air conditioning, the need for which can be reduced by well-adapted building design and good insulation.

With a view to common EU and transboundary adaptation strategies, agreement should be reached on adaptation *targets*. *Guidance and standards* are needed to integrate adaptation in sectoral policies, including the implementation of EU legislation. This was explicitly mentioned for two areas of EU legislation: Strategic Environmental Assessment (SEA) and the Water Framework Directive (WFD). The development of common standards is also helpful when tackling transboundary adaptation problems (notably, those related with rivers

and flooding). Indicators used for the implementation of EU strategies and legislation should be harmonised and simplified.

The aspects of *behavioural change* and the *public perception* of climate change impacts should be included into policies. To some extent, it may be appropriate to communicate climate change not as a risk, but as a new normality. Not only authorities, but the whole population needs to be prepared to act adequately in the event of crises and disasters.

Traditional knowledge should be explored in developing adaptation strategies. This includes traditional techniques of water management, building and agriculture. It should be noted that traditional societies were forced to live with changing environmental conditions and natural hazards, and to build resilience against the associated risks.