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Climate Change: approaches at local and regional level

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Explanatory memorandum
Committee on Sustainable Development

Summary:

Climate change is already effecting on our daily lives and local and regional authorities are on the frontline when dealing with its impacts and consequences. Territorial authorities have, in many cases, taken the lead in efforts to tackle this threat which is one of the most serious economic, social and environmental challenges of this century and they are implementing innovative and effective mitigation and adaptation strategies.

Territorial authorities are in a strong position to set up integrated climate policies and adaptation strategies as, in most member States, they have responsibility for sectors which have a direct impact on the rate of carbon dioxide emissions. They should establish action plans to limit climate changes which include measurable and realistic targets, timeframes and a clear share of responsibilities. Climate policy should be mainstreamed into all areas of responsibility including energy issues, public transport and coordinated and efficient mobility, land use, building and planning, water and waste management, forestry and agriculture.

All levels of governance need to cooperate and develop partnerships to coordinate public policies, set standards, promote expertise and disseminate knowledge and best practices. They should also participate in the national and international networks and organisations set up to combat climate change.

R: Chamber of Regions / L: Chamber of Local Authorities
ILDG: Independent and Liberal Democrat Group of the Congress
EPP/CD: Group European People's Party – Christian Democrats of the Congress
SOC: Socialist Group of the Congress
NR: Member not belonging to a Political Group of the Congress

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Foreword

This report offers an introduction into climate policy, in particular the impacts of climate change, the response that is required and the principles which need to be taken into account. Its main focus is on the role local and regional authorities can, and should, play to mitigate climate change and to respond to its already observable impacts.

The scope and priorities of local action are discussed, examining their role within the various political spheres – local, regional, national, and international. Moreover, the report discusses various ideas of how local and regional action could be strengthened and how national governments and the international community could take advantage of local commitment and capacity.

The report draws upon the presentations and debates at the hearing on climate change: "Innovative approaches at local and regional level" which took place on 19 October 2006 in Yerevan (Armenia). (see Appendix 1 for the programme).

Appendix 2 provides an overview on the impacts of climate change, a time table of the evolution of international climate policy and summaries of the main issues of the regimes in place.

1. Background to the report

This report of the Congress of Local and Regional Authorities is a part of an ongoing commitment to address issues of climate change and energy. As early as 1993, the Congress adopted a resolution on combating the greenhouse effect and protecting the ozone layer, emphasising the role of local and regional authorities and providing recommendations for practical action. During the last years, various important fields related to climate change policy such as energy, transport, and waste management, have been addressed by recommendations and resolutions of the Committee of Ministers and the Congress[1].

In the light of the findings of the recently published 4th assessment reports of the Intergovernmental Panel on Climate Change (IPCC) on scientific aspects, and on impacts, vulnerability and adaptation, which, stronger than ever, emphasise the dimension and urgency of the problem, the time is ripe now to address climate change policy in a comprehensive way.

The work programme of the Committee on Sustainable Development 2007-8 will also see the preparation of two further reports on these issues: 'Adopting a strategy to reduce vulnerability and to adapt to climate change: a new challenge for local and regional authorities' and 'Public local and regional action: for a new energy culture'.

2. The Challenge of climate change

Climate change impacts

There is firm scientific consensus that climate change is happening, and that it is caused by human activities, in particular by the release of greenhouse gas (GHG) emissions. The rise in global average temperatures is set to continue over the next 30 – 50 years. As a consequence, there will be more extreme weather conditions leading to heat-waves, droughts and floods, and long-term or abrupt irreversible impacts such as turning areas into desert, melting of polar ice sheets and permafrost, and

The Congress Secretariat should like to thank Ms Gotelind Alber, Consultant, *Climate Alliance*, for the preparation of this report.

1 Committee of Ministers of the Council of Europe:
Recommendation 161(2005) on local and regional authorities and renewable energy sources
Resolution 246 (1993) on combating the greenhouse effect and protecting the ozone layer, the role of local and regional authorities
Resolution 127 (2002) on sustainable development and the liberalisation of the energy market
Resolution 137 (2002) on integrated transport policies
Resolution 193 (2005) on local and regional authorities and renewable energy sources
Resolution 213 (2006) on local and regional waste management and the siting of landfills

major shifts in global weather patterns which will have enormous impact on ecosystems, biodiversity, and agriculture and on the economy as a whole. Europe has already seen widespread destruction and disruption, for example from drought in France, fires in Portugal, flooding in central Europe, the storms of 1999 and the heat waves of 2003 and 2006.

The Stern Review on the Economic of Climate Change estimates that the economic losses caused by these changes could represent 5-20 per cent of annual gross domestic product in developed countries. However, the worst impacts of climate change would affect the developing countries in the Southern hemisphere, more than the European continent, given their vulnerability and very limited capacity to adapt.

The scope of the challenge

We are dealing with a broad and complex issue involving a wide range of sectors. Energy consumption and production, and the subsequent carbon dioxide emissions, are key driving forces of climate change. Climate protection policies must therefore address both energy demand (buildings, transport, economic activity etc.) and supply. Moreover, many other factors contribute to greenhouse gas emissions, in particular waste, forestry and agriculture. Every consumer (public, industrial, and private) is contributing to the problem and thus needs to be involved in the implementation of climate protection policies and measures. In other words, we need to develop a new culture to deal with energy.

Climate change is closely connected to air pollution and interlinked with many other issues, namely natural resources such as water and soil, forests and biodiversity, both in terms of impacts, and mitigation strategies. It is related to economic and social issues, and in particular equity issues on a global scale. Industrialised countries have produced, and still are producing, the major share of greenhouse gas emissions, whereas many developing countries do not contribute much to the problem, but are more vulnerable to the impacts of climate change. One of the principles of the UN Framework Convention on Climate Change is therefore “common but differentiated responsibilities“, i.e. that the distribution of burdens must take into account the contribution to the problem, and the capability to contribute to its solution. In other words, industrialised countries must be the first to reduce their emissions and should support other countries to shift to a low-carbon economy. According to a broad scientific consensus, a reduction in greenhouse gas emissions of 60 to 80 per cent will be required by 2050 compared to 1990.

The emissions of emerging economies like China and India are rapidly increasing although per capita emissions of these countries are still low compared to long-industrialised countries. However, to avoid more dangerous climate change, developing countries will also need to be involved in a climate protection strategy and adopt commitments to limit their emissions. Exceptions could be made for the least developed countries with extremely low per capita emissions.

Beyond mitigation, it is also necessary to respond to the impacts of climate change which are already affecting nature, economic activities and human well-being, and are very likely to increase dramatically in the future. Improving resilience, and thereby reducing vulnerability, is also a task for policy at all levels. This involves precautionary action related to the built environment, to agriculture, and to many other sectors. In many cases, adapting to climate change will be the only solution. Such measures, for example improving and building dams, require precise information on what impacts are to be expected and can be extremely costly. Poor countries, which in most cases are the least responsible for the problem, will need support to cope with this challenge. Therefore, adaptation also needs to be addressed by the international community.

An international response

All European countries have ratified the UN Framework Convention on Climate Change and nearly all of them have acceded to the Kyoto Protocol[2]. The Kyoto Protocol came into force in 2005, setting binding, quantified targets for the so called Annex I countries[3]. However, there is a broad consensus

[2] Except from Croatia and Turkey

[3] Most Members of the Council of Europe are Annex I countries, except from Albania, Andorra, Armenia, Azerbaijan, Bosnia and Herzegovina, Cyprus, Georgia, Malta, Moldova, San Marino, Serbia, and ”The former Yugoslav Republic of Macedonia”

that the commitments made are not sufficient to meet the ultimate goal of the UN Framework Convention on Climate Change. Moreover, the Kyoto mechanism has several shortfalls, *inter alia* the sustainability of projects and the involvement of local communities affected by such projects is not sufficiently guaranteed.

Key issues regarding future commitments on climate change policy are the quantity and the formulation of targets (whether they are based on historic emissions, or on a per capita approach taking sustainability and equity considerations into account), the inclusion of policies and measures (such as the reduction of subsidies on non-renewable fuels), and the involvement of emerging economies and developing countries.

In its Conclusion, the European Union Summit on 8-9 March 2007, the European Council reaffirmed the strategic objective of limiting the global average temperature increase to not more than 2° C above pre-industrial levels, and that developed countries should continue to take the lead, striving for greenhouse gas emission reductions in the order of 30% by 2020, and of 60% to 80% by 2050 compared to 1990 levels. The European Council endorsed the EU objective of a 30% reduction in greenhouse gas emissions by 2020 compared to 1990 as its contribution to a global and comprehensive agreement for the period beyond 2012, provided that other nations join ambitious commitments. In any case, the Council made a firm independent commitment to achieve at least a 20% reduction of greenhouse gas emissions by 2020 compared to 1990. To this end, an action plan "Energy Policy for Europe" has been adopted, and a new internal burden-sharing will be agreed upon.

3. The role of local and regional authorities for mitigation and adaptation

Local authorities and city networks as front-runners

More than 1500 local authorities in Europe have committed to adopting climate protection measures and many more are joining them in developing and implementing policies aimed at the reduction of greenhouse gas emissions. Their strategies address land-use planning, transport, energy consumption and supply, and other climate related measures such as waste management, agriculture and forestry.

Many local authorities' climate protection measures have resulted in measurable emission reductions, in particular in those areas where they have full control over their municipal facilities, as can be seen from numerous case studies. A number of European local authorities have been awarded Climate Alliance's "Climate Star" award of Excellence, which will form the basis of a quality management scheme.

Local authority networks, founded by the most active local authorities, play a crucial role in raising awareness of climate issues and encouraging further local authorities to become actively involved. Moreover, they have developed and successfully applied methodologies for a systematic approach to local climate policies, such as the "10 Steps" and the "Climate Compass" of the Climate Alliance[4] and the "Milestones" of ICLEI – Local Government for sustainability[5]. Based on more than 10 years of local experience, networks prepared recommendations for policies and measures, such as the Climate Alliance Catalogue of Measures covering the full range of local options, and Energie-Cités[6] best practices catalogue in the energy sector.

The networks have developed monitoring systems, such as the Climate Alliance's monitoring guidelines and indicators, tools like Climate Alliance's Internet based monitoring system and ICLEI's greenhouse gas emissions software, and recommendations for reporting, for example Climate Alliance's climate protection profiles.

Climate Alliance and ICLEI have published several status reports on local climate protection and made them available to an international audience at the UN Climate Conferences[7].

[4] www.klimabuendnis.org
[5] www.iclei-europe.org
[6] www.energie-cites.eu
[7] See for instance: http://www.klimabuendnis.org/download/statusreport2003.pdf, http://www.klimabuendnis.org/download/status2000.pdf, http://www.klimabuendnis.org/download/cop3_e.pdf

Local and multi-level approaches

Local governments play a large part in deciding about the carbon-intensity in the long-run, in particular through spatial planning, development control policies and the local infrastructure. Moreover, local authorities provide essential public services, manage daily transport requirements and many of them also provide services in the energy sector.

Thus, they have the power to optimise the energy performance of new developments and integrate traffic prevention strategies in development planning. They can exploit mid- and long-term GHG reduction potentials which cannot be tapped by national policy.

Moreover, local authorities, being more closely involved with local communities, can work with stakeholders such as citizens' and business groups. They can motivate, inform and advise private households and businesses, and they can promote and support the transition to a climate-friendly community.

Local authorities have a pivotal role to play if substantial reductions are to be achieved in the long run. While national governments can set the proper framework, using policy instruments such as standards, taxation, funding, and cap and trade systems for industry, local and regional governments are crucial in implementing and taking full advantage of national programmes.

Regional governments are especially important to involve small municipalities, for example through coordination, collaboration schemes and incentives. In some countries, they have also specific options for climate policy. Beyond the specific options mentioned above, local governments also have a role to play in making national and regional policies effective. For example, it is national government which create favourable conditions for investments in renewable energies through the removal of legal barriers and the introduction of feed-in-tariffs. However, it is the local governments which support the real investments on the ground through spatial planning and the motivation of, and coordination with, potential investors, suppliers (for example of biomass) and consumers (for example of heat).

Ideally, policies at all levels would be coordinated in order to agree on an effective division of labour, and to define the national framework so that regional and local actors can make the most of their powers and responsibilities. This also includes adaptation policies since local governments are the first to be affected by the impacts of climate change and will be on the front-line to manage the consequences.

4. The need for immediate commitment

The cost of inaction

The recently published Stern Review on the Economics of Climate Change highlights the risks of major disruption to economic and social activity. The report estimates that the damage costs of climate change could amount to 5 to 20 per cent of GDP in the course of this century. The required investments to avoid such damages are estimated to account for about 1 per cent of GDP, the benefits thus far outweighing the costs. In other words, each Euro spent for climate protection activities will avoid future losses of at least four Euros.

This relation of costs and benefits is particularly true for the local level, since damages will be felt most acutely here. Moreover, at local level, the connection between greenhouse gas reduction and the promotion of sustainable development becomes more obvious when linked to noticeable benefits for the community such as savings in the budget, noise reduction, reduction of local pollution, and improvements to the quality of life.

Several current studies are exploring these co-benefits of climate change policy in more detail, revealing substantial environmental and economic advantages for cities that gear their policies towards climate protection. Moreover, mainstreaming climate policy into all other local policies stimulates innovation and institutional learning processes.

Therefore, the experience of the front-runners should be replicated by all municipalities as soon as possible. The earlier effective action is taken, the less costly it will be, and the more benefits it will generate. Furthermore, early movers will have an advantage over others in the event of climate policy becoming a mandatory task for local and regional authorities,

Obstacles to local climate policies

A majority of local authorities have not yet committed to implementing climate protection policies, nor have they developed comprehensive programmes. As climate protection measures are voluntary, increasing financial burden is a major threat to local climate policy. New and additional policies considered as “non-urgent” impact upon existing budget allocations, both at national and local levels and affect ongoing and planned priorities. Unfortunately, climate policies are too often considered in this category.

In many cases, local governments abandon the control over energy supply and consumption, for example by outsourcing the management of their buildings without proper specifications and without retaining control over the management of the buildings.

The liberalisation of the energy market, and other markets relevant to climate change, has in many cases negatively affected local authorities‘ range of actions, and adversely influenced their ability to continue to deliver services of general interest.

Shortcomings of national and European climate programmes negatively affect the potential range and efficacy of local action. This is particularly the case regarding transport policy: increases in greenhouse gas emissions from the transport sector negates reductions achieved in other sectors by many local authorities.

Some areas of climate change leading to reductions in greenhouse gas emissions need to be better integrated into local climate change policies. Examples include green procurement, waste management and local authorities‘ influence on agriculture and forestry. These fields of action are often not recognised, but since they are part of the problem, they are also part of the solution.

More needs to be done to enhance the scope and quality of local climate protection efforts, to attribute to local government the powers they need, to ensure a solid financial and institutional basis for such activities, and to better coordinate action between local, regional, national, and international levels.

The vital role of local and regional authorities in implementing climate change policy needs to be acknowledged and emphasised at national and international levels, and their participation in decision making must be ensured.

Though climate change is already happening, it is not too late for action. On the contrary: every ton of greenhouse gas emissions that is avoided will contribute to limiting additional impacts.

The decisions that need to be taken if climate change is to be reversed in any meaningful way are very tough. Neither citizens nor elected members are keen to see current lifestyle choices and consumption levels questioned. However, the threat to our planet is so great that all levels of government and all individuals should acknowledge that the decisions that need to be taken and the changes that need to happen, particularly among developed nations, may impose limitations on some of the choices we have come to enjoy and consider to be our right.

5. The way forward

The scope of local and regional climate change policies

Every local authority should take climate change into consideration in its decision making and develop policies to cut greenhouse gas emissions, and take measures to adapt to potential impacts of climate change.

Energy is the most important source of greenhouse gas emissions and requires a comprehensive approach integrating demand and supply. Local authorities should tackle energy efficiency measures through improved thermal insulation of buildings, efficient end usage of energy, and the extension of climate-friendly energy supply options and use of renewable sources of energy.

Special attention needs to be given to the development of a sustainable and integrated **urban transport system** which allows for a coordinated and efficient use of all modes of transport over a given area, for example the town or conurbation. Through appropriate road/street usage and the promotion of transport modes which are less polluting and energy consuming, the transport of persons and goods can be organised so as to ensure a sustainable balance between mobility and accessibility requirements and preservation of the living environment.

Urban planning provides an essential instrument for local authorities to decisively influence long-term developments both in the energy and transport sector through optimising energy performance and the supply of new developments, counteracting urban sprawl and working towards a compact city.

Besides technological solutions, consumption patterns play a major role for climate policy, too. Authorities at all levels should, therefore, in their **procurement policies** take climate change into consideration and motivate and offer incentives to the private sector to do the same. Be it office supplies, building materials, or food in canteens, seeking for the most climate-friendly options and systematically purchasing low-carbon goods and services can make a substantial contribution at no or low extra cost.

Furthermore, **waste management** should also be included in a comprehensive approach, especially since, for many local governments, it is part of the mandatory tasks. Avoiding waste, closing down or limiting landfill sites, and utilising landfill gas if available are the main elements of the local climate policy in the waste sector.

As many local authorities have **forestry and agricultural** areas, they can influence whether these are managed in a sustainable and climate-friendly way. Through their example, through their purchasing policies and through incentives they can influence private owners too.

Priorities for action at local and regional level

To address climate change, local authorities should build upon and make use of existing methods and experiences of good practice.

As a first step, no-cost and low-cost policy options should be addressed, mainly to avoid unnecessary consumption, for example energy saving through better management of public buildings and facilities, and energy efficient street lighting. Other priority actions are energy conservation and waste prevention programmes in schools and motivation campaigns for sustainable mobility. Such options should be part of an immediate action programme that can be directly started without further research and considerations. Methodologies such as the Climate Alliance's "Climate Compass" offer a detailed catalogue of recommended measures and can help local authorities to identify the measures they are already implementing, but do not yet consider as part of their climate change policy, and to identify additional priority actions.

During the implementation of such a "no-regret" programme, a more systematic approach should be pursued, based on a political commitment to climate protection and a participatory process involving stakeholders such as energy and transport companies, local business, and citizens groups. Based on an analysis of current greenhouse emissions, a general strategy for greenhouse gas abatement plans and specific targets for the various sectors (energy consumption and supply, transport, procurement etc.) should be adopted.

As a next step, policies and measures to meet these targets need to be defined for the short, mid and long term. These should consider the various roles a local government can play (consumer, planning authority, supplier of services, and motivator and moderator to involve the private sector). Moreover, the various policy instruments available need to be taken into consideration:

- land use planning (working towards a compact city to avoid traffic, siting policies favouring renewable energy installations etc.);
- regulation (for example energy standards for buildings, if possible, priority areas for climate-friendly district heating systems, obligations to use solar energy in buildings);
- new financing schemes and financial instruments (performance contracting and community based financing of climate protection projects;
- incentives for energy conservation (for example to energetically upgrade installations and houses, and disincentives such as congestion charges for private cars entering the city centre);
- information, communication and motivation (for example advice offered to citizens on low-energy consumption and buildings, social marketing, campaigns).

A climate action programme should ensure that climate issues are mainstreamed into all fields of local policy.

In parallel with the definition of policies and measures, monitoring mechanisms need to be defined. In most cases, it is advisable to not only rely on monitoring greenhouse emissions, but rather to include specific indicators which make progress more visible. City networks have developed appropriate indicator systems and tools to support quantification. During the implementation of the action programme, regular monitoring and reporting is essential, as is communication of the achievements to a wider audience.

Partnerships and cooperation

Since climate protection needs to be based on the contributions of all consumers, public and private, working with the private sector, business, citizens, and NGOs, is essential. Communication of the policies planned and the progress already made, is key and a precondition to involve other actors.

To design and implement local climate policy programmes, and especially to identify and realise investments in low-carbon technologies, local and regional governments should develop private-public partnerships.

In particular, within the region, collaboration with other local authorities is all-important, for example to coordinate land use planning and avoid harmful competition, and to collaborate closely in order to be able to offer a high-quality public transport system reaching beyond the city borders.

For all their activities, design, implementation and monitoring of climate policy programmes, local governments should work with, and build upon, the experience of existing city networks and initiatives. Sharing their own experience and views within networks will improve the efficacy of the own climate policy and contribute to others joining the efforts. In many cases, such collaboration can effect cost savings, for example through the replication of successful approaches, the utilisation of tools and methods, and through practical efforts such as jointly purchasing low-carbon goods and services at a better price.

Regions should support the commitment and action of local governments. They can play an important role to provide motivation and guidance, particularly for small municipalities which lack the necessary expertise and capacity. An example of this is regional energy agencies which can offer on-site advice or implement energy management systems in small municipalities.

From local and regional commitment and action to national policies

Very strong political signals are needed to assign to climate policy the importance it warrants. National governments should, beyond firm commitments and strong policies at national level, involve regional and local governments both in the policy-making and in the implementation of climate change policy. This is an opportunity for national governments to take advantage of the commitment, capacity and experience of local and regional authorities

National governments should create favourable conditions for energy and transport policies. They should analyse the national framework conditions, in terms of whether they hinder or support local

climate protection policies, and develop proposals for improvement. In particular they should provide local authorities with the power they need to develop and implement climate policy objectives.

Governments should explore options for multi-level arrangements with national and regional governments on climate change, for example contracts and agreements, based on approaches such as the Dutch Klimaatconvenant and the Flemish agreement with local authorities. Based on a common methodology, within these schemes, local governments receive funding if they are implementing climate protection programmes which meet certain quality standards.

The should facilitate the expansion of local commitment and support local efforts through climate change awareness raising programmes addressed at local authorities. These programmes should reach every city and town to motivate them to enter into a climate protection commitment.

Moreover, advice and capacity-building for local authorities should be offered, for example by training experts who can offer on-site advice to assist local government in setting up immediate action programmes and systematic climate plans. To this end, governments can rely on existing experience with advice schemes offered by some national and regional governments and city networks.

Efforts should be made to evaluate and further develop methodologies, practical tools, monitoring, and quality control schemes. Best practices should be ranked according to their transferability and measures should be disseminated that can be implemented and have an impact all over Europe.

Governments should provide financial and political support to important climate change activities run by local authorities and their networks, for example public awareness raising campaigns on climate change, sustainable energy and mobility pilot projects, and the expansion and improvement of public transport systems. They should facilitate the utilisation and broader application of performance contracting and other financing schemes and redirect existing funding programmes to climate policy initiatives.

National city networks and the national branches of international networks should participate in all the above-mentioned activities in order to strengthen collaboration and the networks and provide support for them to share approaches and good practice and to offer capacity-building for local authorities.

International process

Most notably, the role and importance of local and regional contributions to climate change policy, including mitigation and adaptation, needs to be recognised in the international climate policy debate and negotiation. Local authorities and their networks constitute their own observer group within the UNFCCC framework, however, they are considered as NGOs (non-governmental organisations). Their formal role should be enhanced to properly reflect their democratic legitimacy as governments at sub-national level.

Furthermore, local and regional policy-makers and their experts should also be involved in UNFCCC workshops on mitigation and adaptation on a regular basis and local efforts and achievements should be included in the national communications prepared by the UNFCCC.

Multi-level governance issues, namely how to improve the coordination and collaboration among the various policy levels, need to be addressed in the international process, in particular in the negotiations about future commitments.

Stronger involvement of these spheres of government into the international debate would improve the process and its outcomes since it would support more ambitious commitments and would help to put more emphasis on the practical aspects of implementing climate policy on the ground. It would also contribute to ensuring that sustainability, including the social and equity aspects, are taken into consideration since their connection to climate policy is more obvious at local level. In this way climate policy will be better linked to other international endeavours such as the Rio process and the Millennium Goals.

Appendix 1 Programme of the hearing

Hearing on Climate change: Innovative approaches at local and regional level
19 October 2006 (1:45 pm – 6:30 pm)
Ani Plaza Hotel, Yerevan (Armenia)

Programme

1:45-2:30 p.m. Opening speech by Vardan AIVAZYAN, Minister of Ecology of Armenia

INTRODUCTION
Gaye DOGANOGLU, Chair of the Committee on Sustainable Development of the Congress of the Council of Europe

- Climate change: the perspectives for the next 100 years and policies at the international level
  Gotelind ALBER, Expert/Consultant on Climate Policy, Rapporteur/Moderator

2:30- 3:30 p.m. **A VARIETY OF STAKE-HOLDERS RESPONDING TO THE CHALLENGES OF CLIMATE CHANGE**

- Reversing the trends, the integrated action of a city
  Peter N. MYHRE, Commissioner for Environment and Transport, City of Oslo (Norway)
- The region as a driving force
  Peter OBRICHT, Head of the Environment and Planning Department, Lower Austria Region (Austria)
- Public policies at State level: the Armenian example
  Aram GABRIELYAN, Head of the Environment Protection Department, Ministry of Nature Protection, UNFCCC National Focal Point (Armenia)
- The impetus given by networks to local and regional authorities in setting up initiatives for the climate
  Gotelind ALBER, Expert/Consultant

Discussion

3:45-6:00 p.m. **DIVERSIFYING STRATEGIES: FOR A NEW ENERGY CULTURE, A MOBILITY SOCIETY AND SUSTAINABLE URBAN PLANNING**
Rapporteur/Moderator: Gotelind ALBER, Expert/consultant

Presentation of case studies:

- The City of Pamplona (Spain): Yolanda BARCINA ANGULO, Mayor, Member of Congress
- The City of Oslo: Peter N. MYHRE, Commissioner for Environment and Transport
- The City of Paris (France): Myriam CONSTANTIN, Deputy Mayor, Member of the Congress
- The City of Miskolc (Hungary): János CSIZMADIA, Head of the Architecture and Environment Department
- The Lower Austria Region (Austria): Peter OBRICHT, Head of the Environment and Planning Department

Discussion

6:00-6:30 p.m. **CONCLUSIONS**
by the Rapporteur and the Chair

Appendix 2 Background information

Climate change and its current and future impacts

Although there is still uncertainty about many of the effects of climate change in detail, our understanding of future trends is improving substantially, and provides clear indications of the severity of the problem. Even if all emissions were stopped, due to inertia in the climate system, some climate change would nevertheless happen. It is likely that, only as a result of past emissions, the rise in global average temperatures will continue over the next 30 – 50 years.

Key effects of climate change (cited after IPCC TAR 2001 8)

- More heat-waves in continental areas. For example, the temperatures experienced during the European heat-wave of 2003 could be commonplace by the middle of the century and unusually cool by the end of the century.
- Less snow and reduced glacial in many northern latitudes and areas that rely on snowmelt for summer water supply (for example China, India, Peru). For example, millions more people could be suffering water shortage in Peru, China and India, and unreliable snowfall could make ski resorts less attractive tourist destinations.
- Sea level rise and increased risk of coastal flooding in many low-lying areas, including small island states, Western Africa, parts of South East Asia (for example Bangladesh). A one meter sea level rise could potentially affect 6 million people in Egypt, 13 million in Bangladesh, and 72 million in China.
- More intense precipitation events in northern latitudes, leading to greater incidence of flooding with increasing weather damage to people, property and their possessions.
- Drier summers and increasing risk of severe droughts in many mid-latitude continental areas, for example Mediterranean, Central America, Australia, Southern Africa. For example, the proportion of years where run-off drops to drought levels could increase by 30% by 2050 in Southern Africa.
- Widespread impacts of marine ecosystems and biodiversity, with knock-on effects for local communities dependent on fishing.
- Whereas some of these impacts develop slowly and might allow for adaptation to a certain degree, climate change may also cause some large-scale irreversible, often abrupt future effects, called "tipping points“. The most severe tipping point are:
- Drop in rainfall in the Amazon forest, leading to a collapse of this enormously rich ecosystem, and, finally, to the release of huge quantities of additional carbon dioxide from dying trees.
- The Sahara desert could shrink with global warming, leading to positive local effects, but to far-reaching negative global impacts due to a reduced flux of dust to the ocean and other parts of the world.
- The ozone hole may be drastically increased by global warming, causing a hole also over parts of Europe.
- If temperatures rise by more than about 3 C, melting of the Greenland ice sheet could result in a sea level rise of up to 7 meters, causing flooding with a devastating impact on people living on shorelines around the globe.
- In a warmer world, the white of the Tibetan plateau will slowly turn to brown and grey as the snow retreats to reveal the ground beneath. With changing temperature the ground warms, and melting will accelerate.

[8] The IPCC (Intergovernmental Panel on Climate Change) is an intergovernmental body who compiles reports summarising all relevant research on climate change, its causes, impacts and possible response measures which are reviewed by governments and experts. Their Third Assessment Report (TAR) was published in 2001. The IPCC 4th Assessment Report (AR4) will become available in 2007. See http://www.ipcc.ch

- El Niño, a general warming of the central and Asian Pacific, causes a major shift in weather patterns and in particular responds sensitively to changes at the western boundary of the Pacific. Global warming could make El Niños more severe and more frequent with serious impacts on agriculture and food production.
- With a global temperature increase of 2 – 5C relative to 2000, predictions suggest that the melting of the Antarctic ice sheet could be triggered. By 2100, this may lead to a sea level rise of 75cm, and should the entire sheet melt, estimated sea level rise would be 5 - 6m.
- If the vast deposits of gas-filled ice (methane clathrates) in Siberian permafrost and ocean floor sediments are released due to climate change, global warming would be massively accelerated as methane is a strong greenhouse gas.
- Global warming is expected to produce more rainfall over the poles, which could slow the rise of nutrients for dispersal by the Atlantic circumpolar current.

Most of the impacts of climate change may hit developing countries in the South of the planet more strongly than Europe, given their vulnerability and very limited capacity to adapt. However, Europe too will experience severe impacts as indicated by a study published by the European Environmental Agency in 2005[9].

For industrialised countries, this means a reduction of 60 to 80 per cent by 2050 compared to 1990 is needed. Moreover, it means that large newly industrialising countries need to start to take part in these efforts very soon. Looking at the historic responsibility of industrialised nations, this might seem to be unjust. However, even if they took severe measures to tackle climate change, they would not be able by themselves to ensure the temperature rise to stay below 2C."

(United Nations Framework Convention on Climate Change (UNFCCC), Kyoto Protocol and future commitments

A Timetable

1979 The First World Climate Conference in Geneva. For the first time, the problem of global warming is discussed at UN level.

1988 The IPCC (Intergovernmental Panel on Climate Change) is installed by the UN as an international body of leading scientists to study causes and impacts of climate change, and possible strategies to mitigate global warming. The IPCC's "First Assessment Report" published in 1990 shows clearly that international agreements are required to reduce greenhouse gas emissions.

1990 The Second World Climate Conference in Geneva. Subsequently, the UN General Assembly sets up an International Negotiating Committee (INC) in order to prepare an international convention on climate change.

1992 The Framework Convention on Climate Change (FCCC) is discussed and signed by more than 150 governments during the Rio Summit. By the end of 1993, 50 governments have ratified the Convention which enters into force by spring 1994.

1995 The Conference of the Parties to the FCCC holds its first session in Berlin (COP1). The review of the commitments under the FCCC leads to a broad agreement that more far-reaching binding commitments are required. However, no agreement is reached on the proposal for a protocol to the FCCC by the Association of Small Island States (AOSIS), supported by many NGOs calling for a 20% reduction of industrialised countries' greenhouse gas emissions by 2005. Instead, the "Berlin Mandate" is adopted to start a new process to strengthening commitments. During the next two years, the "Ad-hoc group on the Berlin Mandate" (AGBM) meets several times, but the negotiations are getting more difficult each time.

1996 COP2 in Geneva. The IPCC's "Second Assessment Report" is adopted by the Parties.

[9] EEA: Impacts of Europe's changing climate. An indicator-based assessment. Summary version: http://reports.eea.europa.eu/climate_report_2_2004/en/summary_of_europes_changing_climate.pdf

1997 After the eighth session of the AGBM, COP3 meets in December in Kyoto. Not before the last night, the parties agree on a protocol containing binding targets for industrialised countries, but leaving many important questions unresolved.

1998 – 2000 The annual COPs (COP4 in Buenos Aires, COP5 in Bonn, COP6 in 2000 in Den Haag) and the intermediate sessions of the subsidiary bodies cannot solve the problems revolving around the rules and guidelines for the flexible mechanisms, and the inclusion of carbon sinks.

2001 Finally, at COP6b in 2001 in Bonn, a provisional agreement is achieved on the main issues, but the US abandon the Protocol. COP7 in Marrakech is needed to translate the 12 pages Bonn agreements into a 200 pages legal document, with additional concessions on the inclusion on carbon sinks. This compromise, the so-called Marrakech Accords prepare the ground for the ratification of the Kyoto Protocol.

2002 At COP8 in New Delhi, similar to the World Summit on Sustainable Development (WSSD), the climate for negotiations is even cooler, and most efforts go into defending prior achievements, though the conference was supposed to work on further details of implementation, and on future longer-term commitments.

2003 COP9 in Milan again is not a breakthrough. Russia's ratification of the Protocol, which is required to fulfil the preconditions for the Protocol to enter into force[10], takes a long time, Saudi Arabia wants to receive compensation for economic losses due to climate policy; debates revolve around financing instruments for developing countries to support the transfer of technologies, emission reduction, and adaptation to the impacts of climate change, as well as the rules for the inclusion of carbon sinks into the Kyoto Mechanisms.

2004 At COP10 in Buenos Aires, the ratification of Russia is still unclear. However, numerous other questions need to be resolved, including the need for, and the practical approaches to, adaptation to the impacts of climate change.

2005 18 February: After Russia has finally ratified, the Kyoto Protocol enters into force.

2005 COP11 in Montreal serves also as MOP1 (Meeting of the Parties to the Kyoto Protocol). The rules for the implementation of the Kyoto Protocol are finally adopted, including a compliance system. An "Ad-hoc open-ended working group" is set up to start negotiating future commitments since the Kyoto Protocol's commitment period will end in 2012. In parallel, based on the Convention, it is agreed to start a dialogue on future commitments involving the US and the developing countries. Moreover, a 5 year adaptation programme is adopted.

2006 In November, COP12/MOP2 takes place in Nairobi. For the first time, Africa, and in particular the least developed countries, are in the focus of the discussion. Several decisions on a work programme on impacts, vulnerability and adaptation, and on an agreement on the management of funding for adaptation measures, technology transfer and climate protection in developing countries can be concluded. Moreover, considerations how to provide incentives for forest conservation in developing countries are taken up. The two different processes on future commitments, under the Kyoto Protocol and under the Convention, are initiated, however, worries are that these negotiations will be lengthy.

2007 COP13/MOP3 will take place in December in Bali, Indonesia, to continue the negotiations on future commitments and to work on the numerous technical details of inventorisation and reporting, implementation of the Kyoto mechanisms, technology transfer, capacity building and education and outreach, and financial mechanisms.

[10] At least 55 governments needed to ratify representing more than 55% of all greenhouse gas emissions. Therefore, without the US, the world's largest emitter, entering into force was not possible without Russia's ratification who, at that time, was the second largest emitter among industrialised nations.

UNFCCC in brief

The UN Framework Convention on Climate Change[11] created a basis for international co-operation with the aim of protecting the earth's atmosphere. Its ultimate objective is the "stabilisation of greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system. Such a level should be achieved within a time-frame sufficient to allow ecosystems to adapt naturally to climate change, to ensure that food production is not threatened and to enable economic development to proceed in a sustainable manner." This far-reaching objective however is not complemented by adequate commitments, since the industrialised countries were only expected to return their emissions to 1990 levels by the year 2000.

Guiding principles of the Convention are based upon the precautionary principle, and the principle of equity and "common but differentiated responsibilities" as regards industrialised and developing countries, and their different vulnerability and contributions to the problem.

Kyoto Protocol in brief

The Kyoto Protocol[12] supplements the FCCC in defining legally binding quantified emission limitation and reduction objectives for the industrialised countries, defining differentiated targets that add up to an overall 5.2% reduction to be achieved in the "commitment period" 2008 to 2012, based on 1990 levels.

The targets are listed in Annex B of the Protocol:

- minus 8% jointly for the EU members, Switzerland and the majority of the Central and Eastern European countries;
- minus 7% for the U.S., minus 6% for Japan, Canada, Poland, and Hungary;
- 0% for Russia, Ukraine, and New Zealand;
- plus 1% for Norway, plus 8% for Australia, and plus 10% for Iceland.

These targets refer to a "basket" of carbon dioxide (CO2), methane (CH4), nitrous oxide (N2O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs) and sulphur hexafluoride (SF6), addressing the most important gases that contribute to global warming. These are listed in Annex A of the Protocol, together with the categories of sectors and sources to be included in inventories.

In addition to emission sources, changes in greenhouse gas sinks due to certain forestry activities (afforestation, reforestation and deforestation) can be taken into account.

The Kyoto Protocol gives a non-binding list of policies and measures including, for example, enhancement of energy efficiency, increased use of renewable energy, reduction or phasing out of market imperfections including subsidies that run counter to the objective of the Convention, promotion of sustainable forest management practices, afforestation and reforestation and reduction of methane through recovery and its use in waste.

The targets are to be met individually or jointly (with other Annex B Parties). Emission reductions can be transferred from one country to the other according to certain rules laid out in Article 6 (joint implementation), Article12 (Clean Development Mechanism), and Article 17 (emissions trading).
Emission trading can take place among industrialised countries and allows for the buying and selling of excess emissions credits. These have to be "supplemental to domestic actions".

The two other flexible mechanisms are project based, i.e. countries will receive credits for emission reduction measures achieved in other countries. This possibility called "joint implementation" (JI) was discussed very controversially at the 1995 UN Climate Conference in Berlin, leading to an agreement on a pilot phase ("activities implemented jointly").

[11] http://unfccc.int/essential_background/convention/background/items/2853.php
[12] http://unfccc.int/essential_background/kyoto_protocol/background/items/1351.php

In the language of the Kyoto Protocol, joint implementation is restricted to projects carried out in other Annex I / Annex B countries, i.e. industrialised countries that have adopted a target. Projects under JI can include reductions at source, or an enhancement of removals by sinks. They must be approved by all Parties involved and must be additional to any that would otherwise occur.

Joint implementation projects in developing countries, called "Clean Development Mechanisms" (CDM), are subject to additional provisions. The CDM is supervised by an executive board. Individual CDM projects have to undergo a certification procedure, and a share of the proceeds from certified projects are used to cover administrative expenses and to assist developing countries that are particularly vulnerable to the adverse effects of climate change to meet the costs of adaptation. Carbon credits under the CDM can be generated since 2000. The Protocol left open whether carbon sequestration projects (preserving, enhancing or creating CO2 sinks by forest conservation, reforestation or afforestation) are eligible under the CDM. However, the agreements in Bonn and Marrakech allow for certain limited amounts generated by afforestation and reforestation. It should be noted that costs for such credits are estimated to be much lower than reduction costs from efficiency and renewable projects.

While the JI mechanism is not very successful in terms of the number of projects, the CDM has received a lot of attention. Currently, there are about 1600 projects in the pipeline, some 630 of them have already been registered which will presumably generate credits (CERs – certified emission reductions) of about 870,000,000 t CO_2eq. The bulk of these projects are located in India, Brazil, Mexico, and China, whereas very little investments are going into the least developed countries. As for the technologies these projects are based upon, the majority are technologies to reduce emissions from industrial production, biomass use, and land fill gas projects. Even though they are crucial for a sustainable energy system, only a tiny share are energy efficiency projects, as transaction costs are relatively high for such activities.

The rules adopted during COP11/MOP1 include a compliance regime. Since EU members states have a common Kyoto target and have internally agreed on a burden sharing scheme, they are subject to two compliance systems, the Kyoto and the EU rules. For the old EU member states (EU-15), under the Kyoto Protocol the joint target of 8% is valid. However, in the case of non-compliance with the EU burden sharing agreement, the European Commission can put sanctions on the member state. For the new member states, the individual commitments agreed in Kyoto are still binding. Moreover, they are also subject to the EU rules in case of non-compliance.

Participants and stakeholders

The Conference of the Parties to the UNFCCC (COP) is the supreme body of the UNFCCC. Its main functions are to keep the implementation under regular review and to promote effective future implementation. The Climate Secretariat in Bonn is responsible for the co-ordination of the process, evaluation and preparation of documents, information, and co-operation with other relevant international secretariats. All official documents and other relevant information and data are available on their web site (www.unfccc.int).

The international climate process is different from the Commission on Sustainable Development (CSD "Rio") process insofar as there is no "major groups" concept. In the climate negotiations, there is a very clear distinction between the Parties (governments) and observers. Observers are grouped into several constituencies: environmental NGOs (ENGO), business NGOs (BINGO), local government and municipal authorities (LGMA), and recently also IPOs (indigenous peoples organisations) and the research community. The Local Governments' Group is led by ICLEI and the Climate Alliance who seek to bring local policy-makers to the negotiations, prepare opinions, give interventions, and organise side events and exhibitions.