



No. 73

European strategies of adaptation to climate change

The spatial planning and spatial development
policy perspective



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European strategies of adaptation to climate change – the spatial planning and spatial development policy perspective

Climate change is a major environmental challenge – and increasingly also an economic and social one – both for politics and for society at large. The international community must adapt to it: continental-scale political units, nation states and regions, local authorities as well as each and every individual citizen. With its Green Paper entitled “Adapting to climate change in Europe – options for EU action”, the European Community has launched the political debate on adaptation to the impacts of climate change on the European continent. The Academy for Spatial Research and Planning (ARL) in Hanover, Germany, welcomes this initiative as a matter of urgent necessity and is submitting the following statement in response to it.

1. Adaptation policy – why now?

Hitherto climate policy has focused principally on climate protection, i.e. on striving as far as possible to mitigate climate change. Increasingly, however, the processes associated with climate change are being recognised as irreversible: the world population must adapt to the impacts of these changes. Climate protection and adaptation to climate change are mutually conditional. The policy of climate protection must be complemented by a policy of adaptation.

Although climate change is a matter which affects the entire world, it does not affect all regions and social groups in equal measure. Adaptation to climate change should not be understood solely in terms of coping with adverse effects, but also as a matter of recognising opportunities. Accordingly, a policy of adaptation to climate change needs to take account of a number of different aspects:

- It must be proactive in order to cushion any negative impacts from the outset.
- It must prepare the population for the consequences that will necessarily follow from the impacts of climate change.
- It must frame long-term strategies and take decisions, even against a backdrop of varying scenarios marked by high degrees of uncertainty.
- It must explore whatever opportunities for development may arise from climate change.

It is precisely because a policy of adaptation to climate change will inevitably be highly complex in nature, because long lead times are unavoidable (not least because of the need for further research), and equally because neither politicians nor the general public have yet become sufficiently sensitive to the problems and challenges associated with climate change, that it is essential to address it immediately. For what is evident today is that climate change is already in process, and that over the coming decades its impacts will become ever more severe – even with an effective climate-protection policy in place. Early action, on the one hand, can reduce possible hazards, reduce the damage potential and limit economic costs; on the other hand, early action can bolster the opportunities which climate change may also present. A wait-and-see mentality would without question significantly heighten the risks posed by climate change. This assumption

also forms the departure point for the EU's Territorial Agenda, which was adopted at the informal conference of ministers held in Leipzig in May 2007; it is the first step towards making towns, cities and regions more resistant to climate change. The Green Paper goes one step further by focusing discussion on the economic, societal and political implications of climate change.

2. The position of the European Union within a worldwide policy of adaptation

Climate change is a political challenge facing the entire world as a community of solidarity. Effective adaptation to the impacts of climate change in the form of a patchwork of unco-ordinated, piecemeal measures is inconceivable. No state and no continent can shirk its responsibilities to adapt to climate change, since failure to implement adaptation measures may have incalculable indirect repercussions which other members of the world community would have to bear (e.g. the problem of environmentally-forced migration).

Over the medium term, if it is to provide uniform minimum standards for all states, the United Nations will have to broaden its framework agreement on climate protection by adding aspects of climate-adaptation policy. The European Community can and should play a leading role in this process, just as it already has done in respect of climate protection with its 2°C objective. At the up-coming World Climate Summit in Bali in December 2007, it should strongly advocate an integrated climate policy incorporating strategies both for protection and for adaptation.

Accordingly, in implementing adaptation measures European policy should not restrict itself solely to the continent of Europe. As a major emitter of greenhouse gases, Europe must, rather, and at the same time, face up to its global responsibilities by offering effective support to those developing countries which are at special risk from climate change in the shape of technological and economic co-operation to assist them in adapting to the impacts of climate change.

Within its own territory, the European Community is in any case obliged to take political action. By their very nature, the problems of adaptation necessarily transcend the boundaries of individual states and regions; they call for a supra-regional approach and for political consensus conceived with the continent as the frame of reference. This is a task for the European Union. Under the relevant European treaties, it possesses the competences and is indeed obliged to act: under its duty to implement environmental protection, and to forge territorial cohesion (cohesion policy), in the field of agricultural policy, in respect of transregional/transnational infrastructure (transnational networks, energy), as well as in the complementary and supporting role it plays in respect of many other policy fields. As far as possible, the European Community must strive to include the entire continent within its adaptation policy (e.g. also Switzerland, Norway and those Balkan states which do not belong to the EU).

The EU must understand this task of adaptation as a matter of joint responsibility with the Member States and regions. In adapting to climate change, the European Community, the Member States, regions, local authorities, the private sector and NGOs are called upon to act in a consistent fashion, as also provided in the EU's Territorial Agenda under the process of territorial governance.

3. Many people and many policy areas are affected

An adaptation policy must involve citizens. Every single person must be able to play their part in responding to the various needs for adaptation affecting their own lives and areas of action. Changes in behaviour in society will be unavoidable (e.g. with regard to indirect impacts of climate change such as new risks to health).

An adaptation policy also needs to be cross-sectoral and involve all the relevant policy areas. It calls for a multiplicity of adaptation measures in different fields: technical measures (e.g. building dykes, avalanche defences), design-engineering measures (e.g. new building materials and new approaches to design in urban development), administrative measures (e.g. disaster-protection management), and, not least, it calls for new decisions to be taken over land use. The consequences of climate change will place a question mark over previous land uses of many parts of the Earth's surface: water bodies and ground-water reserves will dry up; previously fertile growing areas will turn into steppe; the diversity of species and the coping capacity of ecosystems will be affected; extreme-weather events will give rise to new and greater threats to areas of settlement and to other land uses; sea-level rise will pose a risk to low-lying coastal areas and some islands. In all of these cases, structural changes will take place with regard to land use, which – given the multitude of interests affected – have the potential to unleash serious conflict over land uses. Moreover, a policy of adaptation to climate change must answer the question as to just what shape these modified land-use structures will take on and how the potential or ensuing conflicts can be resolved. Spatial planning and land-use planning therefore constitute an integral component of adaptation policy, as is rightly stated in the Green Paper.

Within an adaptation policy, the tasks of spatial planning as an integration-oriented and supra-local tier of planning – again as set out clearly in the Green Paper – are in particular to undertake assessments of vulnerabilities and risks facing the areas under threat, as well as to link these assessments to the capacities for adaptation on hand in the respective areas, and to develop adaptation measures. A further concern is to reduce vulnerability and risk by means of spatial planning. Spatial planning therefore performs a strategic and cross-cutting function located upstream of the individual decisions within specific sectors, which means therefore that it bears the responsibility for the overarching co-ordination of planning. Moreover, spatial planning also has to decide on the ensuing redistribution of land uses, to make land available for the purposes of replacement or mitigation as required, as well as to consider any new claims to land use as they arise. Altogether spatial planning has the task of developing integrated frameworks for the future use of land and space. Spatial planning is by no means the only policy area called upon to address the issues of adaptation; however, without the involvement of spatial planning, effective strategies for adapting to climate change would be unthinkable.

4. The scope and need for action at the European level

The EU should therefore develop a consistent, long-term and targeted adaptation strategy within which the spatial dimension of adaptation should be a key component. In order to ensure that this comes about, the appropriate way forward would be to adopt a co-ordinated approach with its orientation in the same fundamental objectives as are contained in national, regional and local adaptation policies. Mention has already been made of the fact that the EU possesses the critical competences for action in this area, and that it is even obliged within the spirit of European treaties to take action. What remains questionable, however, is the extent to which it is permitted to take action within the remit of spatial planning. Under Article 175, para. 2, letter (b) of the Treaty estab-

lishing the European Community, the EU is permitted within the framework of environmental policy to take “measures affecting town and country planning”, but its role is merely peripheral. The general view is that the Community does not per se possess legislative competence in the area of spatial development.

In view of the differentiated approach called for in the present context, there is in fact no need to lay claim to legislative competence of this kind. Indeed, it would appear to be more expedient if the EU were not to adopt its conceptual baseline in the form of a uniform and formal legal act, as long as this baseline can still be combined with political mechanisms which hold some promise of being successful and which allow for appropriate implementation and appraisal of their efficacy. This approach would ensure the flexibility required at the European level for an effective policy of adaptation, as well as emphasising the responsibility at national level for adaptation policies. This is indeed already required under the subsidiarity principle. With regard to spatial planning, it is also important to note that very different planning cultures and planning systems exist in the Community’s various Member States; the most effective course, therefore, as far as spatial issues are concerned, is for the Member States to shape their own national adaptation strategies to correspond to the specific conditions found in each country. In those areas where there might nonetheless be a demonstrable need for legally binding regulations at the European level, it is still within the scope of the Community’s competences for it to adopt a differentiated approach and issue the corresponding legal instruments.

From an operational perspective, the European conception of an integrated adaptation policy should be dressed in the form of an (informal) “European guideline on adaptation to climate change” and should define the most important areas for action. These include:

- creating and pushing through a uniform framework for co-ordinated action at European level (as a prerequisite for co-ordination to create an effective EU adaptation policy);
- putting forward a standard for a co-ordinated approach in which national adaptation policies are committed to the same fundamental aims; here it will be especially crucial to stress the importance of cross-cutting, integration-led approaches;
- statements on how climate change and adaptation to climate change should be taken into account within the framework of funding programmes (e.g. regional structure policy, agricultural policy) and EU directives (e.g. on Strategic Environmental Assessment, Environmental Impact Assessment, the Habitats Directive and the Water Framework Directive);
- statements on the further development of other important EU policy fields, e.g. the EU’s Territorial Agenda, integrated urban development, maritime policy, integrated coastal-zone management;
- providing an impetus and incentives for the framing of national adaptation policies, as required;
- acting as a catalyst in finding solutions to adaptation problems which transcend the borders of Member States;
- underpinning national and regional adaptation strategies by supplying information and research findings of relevance beyond any one particular region;
- promoting an exchange of experience throughout Europe, e.g. by creating or supporting the relevant networks;

- raising awareness at all political levels of the need for adaptation to climate change and for a range of strategies tailored to meet different spatial conditions;
- raising awareness among the general public for the actions required in adapting to climate change, in order to create the necessary level of acceptance in the face of what may be quite far-reaching interventions affecting current land use (here, however, the EU only has a supporting role to play; the main responsibility rests with national, regional and local authorities).

5. Fundamentals of a European strategy of adaptation to climate change

Before a long-term adaptation policy can be developed and subsequently firmed up by means of a “European guideline on adaptation to climate change”, a number of conditions will first need to be met.

5.1 Improved state of research

Knowledge of the likely impacts of climate change is still relatively limited. This is due not least to the very nature of the matter (high degree of uncertainty in identifying local development trends, non-linear effects of climate change, multi-hazard situations arising in the wake of climate change). Moreover, questions concerning the need for adaptation, and equally the efficacy of adaptation measures, have to be considered in a way which is specific to the region in question; there are consequently no universal solutions valid for all areas.

As far as the EU is concerned, the following research tasks can be identified:

- a regionalised depiction of potential climatic developments;
- analysis of the secondary effects of adaptation strategies;
- development of comparative standards for regionalised models of climate development (problem: scenarios, extent and reference area);
- studies into the “vulnerability” of the various parts of the EU territory (with a more detailed definition and systematisation of the term “vulnerability”);
- identification and assessment of the threats and opportunities posed by climate change based on vulnerability criteria;
- compilation of a European Atlas of the possible impacts of climate change;
- studies into correlations between the different life-cycles of land uses (e.g. residential areas, industrial areas, different types of infrastructure), on the one hand, and adaptation periods and adaptation measures;
- examination and strategic appraisal of the indirect spatial effects resulting from adaptation measures (e.g. when a port location is abandoned, what happens to the socio-economic structures of the hinterland which have developed to serve it?);
- analysis of the synergies and conflicts which may arise between climate protection and adaptation to climate change, and identification of suitable strategies for resolving such conflicts.

Research tasks undertaken at the European level must in many cases take their orientation from specific features of the terrain (be these of a natural-landscape, socio-economic or socio-demographic nature). This calls for an effective means of organising the division of labour between the EU, the Member States, the regions, and the relevant civil-society bodies. Such co-operation can best be achieved by means of networks.

From the perspective of spatial planning, there are good grounds for linking up research tasks concerned with adaptation to climate change with existing European networks created to observe spatial development, in particular ESPON (European Spatial Planning Observation Network).

Climate research, as the very basis of adaptation strategies, is first and foremost applied research. Consequently, particular importance must be attached to connecting theory and practice. This means both incorporating questions of a practical nature into research work, and, equally, facilitating the effective transfer of research findings to practitioners at the operational level. It is precisely in this area that the relevant civil-society organisations are well placed to assist the process of dissemination. To think and act in networks is appropriate in this context as well.

5.2 Adequate knowledge of operational options, sharing examples of best practice

One further prerequisite of an effective adaptation strategy is thorough knowledge of the instruments available for deployment. This knowledge cannot be acquired in the abstract, but rather only through what might be termed experimental projects. Thankfully, the first pilot projects have already been launched as cross-border projects with support from the Commission. This approach should be strengthened. What is important here is that the individual projects should take account of all land uses and contribute to one coherent, holistic strategy for adaptation to climate change.

The findings and results of the pilot projects must also be made available to inform strategic instruments and any frameworks that are set. Moreover, the lessons learnt and the experience acquired within the pilot projects must not flow solely – in concentrated form – into the development of the European adaptation strategy: they should also be exchanged on a Europe-wide basis so that they can serve as examples of best practice. The EU's programmes for territorial co-operation (INTERREG IV) lend themselves particularly well to this purpose.

5.3 Raising awareness in politics at all levels

Even though questions of adaptation to climate change are now increasingly coming into focus in political circles, there is still nowhere near enough clarity when it comes to awareness of the difficulties which adaptation processes will have to tackle, of the presumably quite radical interventions into land-use structures which will be required in certain regions, or of the political responsibility which this entails for anticipatory action. It therefore also falls to the EU to do everything within its powers to assist in raising awareness in political circles. Adaptation to climate change calls for a politics with staying power – a quality which is by no means easy to sustain over the long haul. It is, after all, important to allow also for worst-case scenarios and – where this is appropriate – to consider retreat strategies (e.g. abandoning or imposing restrictions on areas which have already been settled). This calls for constant encouragement.

Particular attention in this context should be paid to the regional and local levels as many forms of adaptation to climate change can only be mapped at the regional level, and, in political terms, their course can only be steered by actions taken on a local scale. In institutional terms, the EU has essentially two ways of supporting regionalisation processes: firstly, by assigning a more significant role to its Committee of the Regions already at the stage of preparing adaptation strategies; secondly, by increasing the involvement of regional entities even at the stages of concept development and implementing adaptation strategies, as well as giving them responsibility for framing operational programmes

5.4 Raising awareness among the general public

In a democracy, raising awareness among political decision-makers goes hand-in-hand with raising awareness among the general public. Involving the general public from the beginning in adaptation policy is essential in view of the high degree of uncertainty surrounding the decisions which have to be taken on matters of adaptation. Adaptation to the consequences of climate change is a completely new challenge for the entire human race: there are no precedents, nor are there any socially sanctioned routines to follow. Consequently, fundamental political decisions on how to adapt to climate change cannot be left solely to the established decision-making structures of our representative systems, but must enjoy general consensus within society.

A second reason for involving the general public is rooted in the presumably severe magnitude of the types of intervention which those people affected by changes in land use required under adaptation measures will have to tolerate. The types of conflict which may be unleashed will only be tolerable if they have been preceded by a process of creating a solid basis of general acceptance throughout society. This process of apprising the general public of the need for adaptation measures can be supported by “risk discourses” and through the involvement of civil-society groups in decision-making processes. Here the EU should take on a supporting role. This is in line with the logic of “territorial cohesion”, which imposes on the EU a responsibility for “its” territory.

5.5 Optimising political processes at the EU

To aid preparation of a common adaptation strategy for the Community, the Green Paper floats the idea of establishing a European Advisory Group. This notion is a direct consequence of the need – already referred to – to mobilise expert knowledge and raise awareness in society; setting up such an advisory group would therefore be a welcome development. This group should comprise scientists, representatives of regional and local planning authorities, as well as representatives of the relevant civil-society bodies. It should be subdivided into special-interest working groups; from a spatial planning perspective, the special interests to be considered for dedicated working groups would include, in particular, spatial planning at national and subnational scale, and urban planning at local scale.

From a spatial planning perspective, an effective adaptation policy would have to adopt an integrated approach. A prerequisite for this is that significantly more attention would need to be paid to co-ordination and consistency within the Union in respect of any policies with spatial impacts than has previously been the case. The obligation on the part of EU institutions to co-ordinate spatial-development policy is in turn a logical consequence of the concept of territorial cohesion and the responsibility for the entire territory which flows from this. There may well be good organisational grounds for establishing a co-ordination committee to act between the relevant Directorates-General.

6. European guideline on adaptation to climate change

The EU should develop a guideline on adaptation to climate change which should promote coherence among the various adaptation strategies adopted by Member States and their regions, and guarantee that spatial development processes in Europe recognise the challenges of adapting to climate change.

6.1 Climate-policy content

The guideline

- should, in particular, develop standards for regional climate scenarios based on the impacts of climate change, and formulate recommendations for the scenarios on which political decisions should be based (standards for regions);
- additionally, it should propose and demand systematic criteria for vulnerability and risk analysis;
- it should outline a number of different options for adaptation for the multiplicity of impacts resulting from the consequences of climate change, and provide initial recommendations for action towards sustainable adaptation to climate change;
- it should promote co-operation among key actors (e.g. between sectoral policy and cross-sectoral spatial planning authorities). It should also address the problem of how to deal with possible conflicts arising between the various sectoral planning authorities;
- it should show how key EU directives – and their implementation at national level – take account of climate change and can promote sustainable adaptation to climate change;
- finally, it should include monitoring and methods for assessing the efficacy of adaptation strategies and measures, and it should evaluate their success at the EU level.

6.2 Appraisal of implementation and efficacy

Even if the European guideline on adaptation to climate change has no legally binding force, this should in no way imply that application of the guideline ought to be left at the discretion of Member States, and that European institutions and the citizenry throughout Europe should be left in the dark regarding the efficacy of adaptation policy. Lessons should be learnt from the failings of the European Spatial Development Perspective (ESDP) adopted in 1999 in Leipzig. The ESDP provided no mechanisms whatsoever for appraisals of implementation and efficacy; consequently, whether and how it was implemented was left at the discretion of individual Member States.

At the latest with the Lisbon process, launched in 2000, which includes the method of “open co-ordination”, an informal procedure has emerged within the Community which provides for feedback between the application of guidelines by Member States and the European level of decision-making. Accordingly, the European guideline on adaptation to climate change should adopt the following mechanisms for appraisals of implementation and efficacy:

- periodic progress reports from Member States to the Community;
- evaluation of these reports by the Commission on the basis of evaluation criteria agreed in advance jointly with the Member States;
- compilation of the results of evaluation in a progress report to be submitted by the Commission to the Council, the European Parliament and to the Committee of the Regions;
- the progress report should also be made available for public discussion; the Community could set up the appropriate discussion forums (e.g. roundtables on climate change).

6.3 Procedural rules and up-dating

European adaptation policy is a continuous task. It needs to be revised constantly as new insights and information become available, and equally to reflect changing conditions. Accordingly, the guideline must be up-dated periodically. Such revision must also take account of the results of implementation and efficacy appraisals.

Among the procedural aspects, particular attention should be paid to maintaining awareness both among politicians and among the general public of the need for a policy of adaptation to climate change. The dialogue within society which has been advocated must be enshrined in the guideline and must not be allowed to peter out in the future. To this end, it may be helpful to establish suitable dialogue forums at the European level which would be convened periodically and would accompany the process of adaptation as set out in a European adaptation policy. An appropriate mechanism would need to be found for aligning the work of these dialogue forums with the rhythm for periodic revision of the guideline.

7. Funding options

It has long been a key aim of the European Community to establish equal opportunities for development in all parts of Community territory (“territorial cohesion”). Success in achieving this aim may be jeopardised by processes of adaptation to climate change since the need to adapt manifests itself in radically different ways in different parts of the territory; consequently, adaptation may indeed heighten existing disparities. Therefore, the instruments of cohesion policy should also be employed to support adaptation strategies and to cushion any unacceptable burdens which may result from implementation of adaptation measures.

Community funding is justified here in particular in respect of

- research projects and the transfer of research findings;
- cross-border networks to share experience;
- concrete adaptation measures in regions in special need of assistance – in which cases attention must be paid to linking investment decisions and adaptation requirements;
- concrete adaptation measures where these transcend national borders;
- organisational and operating costs incurred in cross-border networks.

EU research (Seventh Research Framework Programme), as far as it has been strongly discipline-based in its orientation, should be broadened by the addition of interdisciplinary and integration-oriented research projects on the subject of adaptation to climate change for specific area types and macroregions in Europe. Special focus should be placed in this context on an orientation to application and on research transfer.

Although the European Regional Development Fund, as constituted in the version of Council Regulation (EC) No. 1080/2006, contains what are without doubt pertinent criteria for the “regional competitiveness and employment” and “European territorial co-operation” objectives, these remain very closely bound up with individual measures under environmental policy. It is questionable whether these objectives are capable of satisfying the integration-oriented requirements which must be key elements of a strategy of adaptation to climate change with its orientation in complex changes in land use.

In addition to the use of the now broadly familiar instruments of funding, it would be advisable to examine whether, and to what extent, the European Union Solidarity Fund,

established in 2002, might be remodelled within the framework of the adaptation strategy as an instrument of funding and financial support. The Solidarity Fund could thus quite conceivably provide a means of sharing burdens – at least to some extent – between those regions which might be seen as “climate winners” and those that rank among the “climate losers”. One way of achieving this might be by graduating contributions to the fund according to the degree to which the contributor has undertaken precautionary measures in respect of the impacts of climate change. This would reward a precautionary adaptation policy.

8. Reappraisal of the existing corpus of EU legislation

It is self-evident that all legal provisions which the EU may introduce in the future in the relevant fields must be guided by the European guideline on adaptation to climate change. However, attention should also be given to those existing legal provisions which may have a bearing on effective adaptation to climate change. To this extent, it is appropriate to reappraise the existing corpus of EU legislation. This includes, for example:

- The Directive on the assessment of the effects of certain public and private projects on the environment (85/337/EEC), which includes “climate” as an asset warranting protection; however, the focus is still placed to a great extent solely on the impacts of the project on the environment (e.g. CO₂ emissions). By contrast, climate change will lead to major changes in environmental conditions, which these projects will also have to be adapted to take account of. Whereas the emphasis has been placed hitherto on the effects of a project on the environment, in future the converse will also have to be considered, i.e. the impacts of climate-related environmental changes on the project.
- The same comments can be applied to the Directive on the assessment of the effects of certain plans and programmes on the environment (2001/42/EC). It would also appear expedient to elevate what has previously been “monitoring” into fully-fledged “controlling” of a type capable of guaranteeing the necessary assessment of efficacy.
- The Directive establishing a framework for Community action in the field of water policy (2000/60/EC) currently makes no reference to climate change. In the absence of any consideration for climate change as early as at the stage of characterising river areas, there is every risk of the aims of the guideline not being achieved. In principle, the integration-oriented approach adopted in the guideline is well suited to capturing the various aspects of climate change as they impact on all relevant sectoral policies and land uses. This potential for integration should be enhanced.
- Although the Directive on the assessment and management of floods (2007/60/EC) does address climate change in the preamble, and even though the Directive is quite correct to identify related types of risk and hazard, much stronger emphasis should be given to the responsibility to consider the totality of all land uses from a more integrated perspective and to forge co-operation among all of the relevant sectoral policy fields.

More generally, it is also important to re-examine the EU budget in terms of how it might be possible to reinforce adaptation policies within the framework of the EU’s various competences.

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