EUROPEAN JOURNAL OF SPATIAL DEVELOPMENT

The European Journal of Spatial Development is published by Nordregio, Nordic Centre for Spatial Development and OTB Research Institute, Delft University of Technology

ISSN 1650-9544

Publication details, including instructions for authors: www.nordregio.se/EJSD

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Online Publication Date: 29 November 2007
To cite this Article: Graute,Ulrich & Schöps, Stephan: 'Risks' as a justification for, and a challenge to, European territorial co-operation, *Refereed Articles, Nov 2007, no 26, European Journal of Spatial Development*.
URL: http:/www.nordregio.se/EJSD/refereed26.pdf

‘Risks’ as a justification for, and a challenge to, European territorial co-operation

Keywords: Risk assessment, risk management, European territorial co-operation, flood prevention, INTERREG III B CADSES

ABSTRACT
Under the new ‘European territorial Co-operation’ objective of the EU’s cohesion policy the programmes for the funding period 2007-2013 refer to ‘natural’, ’environmental’ or ‘flood’ risks. To reduce these risks, activities are funded which allow for better risk assessment, control, prevention, and management.

The subject of the paper is an analysis of whether and how environmental and natural risks were in the past addressed. Based on this, the draft programmes for the new funding period will be examined. The key questions are as follows: How do European territorial co-operation programmes approach risks of various kinds? And secondly, the structural funds provide a considerable amount of funding for dealing with risks - but do the funds also encourage appropriate actions in response to the risks identified?

The paper will analyse how programme actors and project partners react to risks and how they approach risk reduction or prevention. Examples are taken from the INTERREG III B CADSES programme (2000-2006) and from the preparation of its follow-up programmes for European Territorial Co-operation in Central Europe and South-Eastern Europe (2007-2013).

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1. Risks – challenges in dealing with uncertainty

1.1 Uncertainty in the world risk society (*Weltrisikogesellschaft*)

Modern society is faced with a large number of economic, environmental and other risks. These can be divided into two groups of risks: those the uncertainty of which can be calculated, and those of which this is impossible. An example of the first type of risk can be given in the context of flood prevention: The possible economic damage to be expected during a flood can be calculated for a given water level. In addition, the costs of measures to prevent such floods can be calculated or at least estimated. The second type of risk can also be illustrated by means of an example from flood prevention: The exact date, place and expected water level of a flood cannot be predicted. Estimations of such an occurrence moreover remain highly uncertain and do not allow for rationalist decision-making to take place.

Risks of the second type are becoming more frequent and increasingly relevant. They force us to face uncertainty without the chance of calculating the risk involved or to take actions designed to prevent such a disaster taking place (Beck 2007, 22). Uncertainty is often so high that any potential action may even bring about the opposite result of its original intention. In addition, local, national and transnational risks and opportunities are increasingly man-made and interrelated.

Ulrich Beck introduced the term world risk society (*Weltrisikogesellschaft*, Beck 2007, 28-48) to describe this situation. Risks as such are not the problem. They are often linked with opportunities. The history of humanity demonstrates that across history people have always had to deal with the concept of risk. Nonetheless, parallel to industrialization and ongoing technological development the idea that humanity can do and achieve anything – in spite of all the risks faced – became increasing dominant. Growing environmental problems and the increasing spate of natural disasters however finally questioned this optimism generating awareness of the fact that our resources on earth are *limited* and that this in turn limits the opportunities of mankind. The world risk society is not pessimistic. Beck discusses intensively the opportunities to successfully face up to risks and to master global problems but he does not share the idealistic approach that we are living in the best world possible. Uncertainties are now considered as so big that no man-made master plan can guarantee success. There is a chance to succeed but in the world risk society it is always in the shadow of potential failure.

1.2 Uncertainty in European spatial development

1.2.1 Facing up to risks in the field of spatial development

With reference to global developments and trends like those described in the report of the Brundtland Commission and the conclusions of the UN Conference in Rio de Janeiro in 1992 the European Union's Member States launched a process of better coordination of the development of the European territory in the early 1990s (Graute 1998, 1-14). This process led to the development and discussion of the European Spatial Development Perspective / ESDP (European Commission 1999; Faludi and Waterhout 2002). Although supported by numerous experts and carried out over more than a decade, the process did neither produce a clear perspective nor a targeted strategy. Its targets were only vaguely defined and the number of uncertainties

remained high. European discussions and the development of a common understanding were hampered by the lack of a common language and terminology (Graute 2002, 107-114). The need for co-operation and the interests of the actors involved were often, moreover, very heterogeneous. This prevented the emergence of a definition of clear-cut common objectives and a straightforward approach to implementation (Graute 2002, 115-139). The ESDP was only occasionally applied and after a few years the European Commission managed to substitute even the term 'spatial development' by the not much more specific term 'territorial co-operation', which became an objective of its own within the new cohesion policy of the European Union (European Commission 2004 and 2005).

The reasons for this development are certainly linked to the existence of different national and European interests. In addition, it is also necessary to point to the uncertainties in spatial development which did not favour a common approach. To give an example, it is useful to return to the case of flood prevention. If a flood affects a transnational river catchment area like the Oder/Odra (1997) or Elbe/Labe (2002) it is very easy to understand that transnational co-operation is necessary. It is obvious that the water level during the flood in Dresden in 2002 depended on heavy rainfall and a corresponding water level rise in the Czech Republic. Therefore, it is self-evident that the prevention of future flooding depends on co-operation between Germany and the Czech Republic. However, it remained unclear to what extent this co-operation should be developed.

Countries along major European rivers established joint commissions to coordinate co-operation on issues related to the respective river. Such commissions exist for e.g. in respect of the Rhine, Danube, Oder and Elbe[1]. Their main activities are as follows:

- *Exchange of information and experiences*

There is no doubt that the exchange of information and experiences is of common interest. In addition, it is relatively easy to agree on common monitoring systems and, where necessary, on respective institutional arrangements.

- *Joint decision-making*

International commissions elaborate recommendations for their partners, i.e. they do not have an *own decision-making* competence. Decision-making remains a national competence. One reason why no competences are transferred is suggested by the uncertainties: The water coming down a river is a potential threat for the people living along the lower part of the same river. Does this interdependence require e.g. a veto by the people from the lower part against an investment in the upper part if this investment increases the potential risk? How likely is the case which would require a transfer of competence? What would the specific competences involved entail and who would control the use of the transferred competence?

Uncertainties make it difficult to come to an agreement and therefore European territorial co-operation is in general driven by voluntary co-operation and through the mutual agreements of the countries and institutions involved. The rules which they set up correspond to the common denominator acceptable for all partners. Their activities may be appropriate with respect to their own risk estimation but the uncertainties are often too high to tell whether an intended activity is appropriate with respect to the real challenges lying ahead.

Uncertainties with respect to ecological, environmental, urban and rural development issues are so manifold and numerous that there is no question that such risks have to be dealt with. The crucial point however is by whom, when and in what way? In addition, it is necessary to state that 'risks' are not only a technical or scientific category with respect to economic or environmental situations, but that 'risks' can also be used as a tool to influence policy and politics. The more difficult the sound calculation of a risk is the more open it is to interpretation.

1.2.2 The impact of 'risks' on European territorial co-operation

The purpose of risk assessment is to anticipate possible disasters, their consequences and impacts. The results of such an assessment provide the basis for preparing actions to prevent disasters. In the case of flood prevention risk assessment allows, for example, insurance companies to calculate in advance the possible damage which would be caused by a certain flood in a specific region. In addition, insurance companies may profit from the estimation of a high risk and possible damage because this, in turn, stimulates business on the insurance market. In general, it can be said that the higher the risk, the higher will be the willingness of clients to pay for insurance against this risk (Beck 2007, 373 and 66). In a similar way, authorities wanting to invest in disaster prevention measures must ensure that there is an awareness of this risk among decision-makers and the general public. Here, too, a high level of perceived risk helps to gain the necessary support.

The demand for European territorial co-operation is also related to risks. The programme documents for the new funding period refer, among other things, to 'natural', 'environmental', 'flood' or 'social exclusion' risks as a reason why a proposed programme was necessary.[2] This is not surprising but is indeed logical in a context which requires that cohesion funds should be used in a demand-driven way to achieve common objectives. Unfortunately, this also works *vice versa*: Where risks and the related demand for actions are not wanted, it can be assumed that related institutions are not interested in a high estimation of such risks. This is also not surprising. It would not make sense for the Member States to stress risks for which they do not then want to take action against.

In the case of INTERREG co-operation risks identified in the context of territorial co-operation and development are, on the one hand, of key relevance to the justification of funding for new programmes and projects. It is thus important here to clearly outline the relevant risks. On the other hand, actors in their day-to-day life tend to reduce complexity and to 'minimise' or 'prevent' risks. This is also true for programme planners and project applicants. Risks are welcomed as justifications for new actions, but when it comes to the definition of operational objectives and appropriate actions, actors often hesitate to take risks. As a consequence, the description of major risks, challenges or threats in programming documents is usually followed by rather unspecific descriptions of objectives and envisaged actions. There is often no concise approach here with a direct link between risks and the necessary activities to solve related problems. Instead, a moderate approach is adopted to simply contribute to, or facilitate, better development. In a process which is characterized by many uncertainties this is not the worst approach possible. Nonetheless, one has to be aware of the limitations caused by this approach: The objectives are neither precisely defined nor is it possible to evaluate the activities in accordance with

precise criteria. Consequently, the funds invested have to be considered at least partly as investments ‘at risk’.

This in turn generates another risk: the risk of ‘losing’ funds. The General Regulation of the Structural Funds requires that only eligible expenditures can be refunded. The objectives and activities of a particular programme or project may or may not be well defined – but for each Euro spent certification is needed that it was spent in line with the rules of eligibility. In order to ensure this relatively demanding monitoring and control process functions adequately, mechanisms need to be established. Programmes and projects which do not pass these checks have to recover funds they have spent already. This risk is without doubt a more immediate threat than the risks related to territorial development. Therefore, projects are encouraged to do as much as possible to prevent the risk of non-eligible expenditures. In the long run, this kind of ‘risk prevention’ in territorial co-operation may however actually reduce the level of resources available for the prevention of real risks.

The analysis carried out thus far does not allow for a calculation about the extent to which the relationship between inconsistent projects and the risk that activities are declared as being ‘ineligible’ reduces the efforts made to prevent risks in a respective territory. Further analysis is certainly needed.

1.2.3 EU Community Initiative programmes as a governance tool to approach risks

Complex systems need corresponding governance tools (Benz 2004). Considering the risks and uncertainties it is reasonable that the European Union does not try to face this global challenge with one master plan. Instead the Union makes use of different tools and among them is the INTERREG funding instrument – a Community Initiative financed out of the European Regional Development Fund (ERDF). Between 2000 and 2006 13 INTERREG programmes were dedicated to transnational co-operation in the field of spatial development. One of these was the INTERREG III B CADSES programme in Central and South-Eastern Europe. The 18 partner countries of this area agreed on objectives and priorities for their programme. Instead of defining activities for the entire programme they simply published the programme with its objectives and priorities in the framework of calls for proposals. The calls where open for the submission of project proposals by public and private institutions from across the programme area. These proposals were assessed by the Joint Technical Secretariat in accordance with a transparent procedure before the partner states as members of a Steering Committee decided upon approval or non-approval (Joint Technical Secretariat 2007b).

The many public and public equivalent actors in the programme (618 and 446) used the programme and its 133 projects to develop and test new governance tools. The participatory governance approach herein is demonstrated by the high number of private partners (534) involved and by the fact that projects were selected in the framework of open calls for proposal in all 18 partner countries (Joint Technical Secretariat 2007a). The partners of a project developed the project idea, defined actions and activities and described intended outputs and results. By means of this approach to the programme the European Commission and the Member States stimulated new ideas and approaches. The programme itself represents one such governance tool but in the end each project had the chance to become a governance tool of its own.

2. How risks were addressed by the projects of the CADSES Programme[3]

2.1 Transnational cooperation as an essential element of risk prevention in Central and South Eastern Europe

'In advanced modernity the social production of wealth is systematically accompanied by the social production of risks', the Sociologist Ulrich Beck wrote in his much-acclaimed book *Risk Society* in 1986. He referred to the growing awareness of increasing environmental and technological risks which have characterised the late 20th century. Risks connected to the use of nuclear energy and climate change are two types of risks which have become new global threats. Moreover the damage potential of some risks, like flooding, has increased as more people and assets are exposed to these dangers. With respect to Central and South East Europe experts around Kempe (2003) and van Meurs (2003) analysed prospects and risks in general. The CADSES programme has a focus on risks directly linked to the territory and its development.

Between 1998 and 2004 more than 100 flood events occurred causing tremendous damage along small and large rivers alike across Europe. More than 700 people died and half a million people lost their homes in these floods. The insured economic loss exceeded some 25 billion *Euros*. The flood disasters along the Elbe and Danube during 2002 in particular remain in the memory of the residents living close to these rivers. In Italy a series of earthquakes killed 13 people and left more than 40,000 people homeless in 1997. In addition the cultural heritage of the area was also damaged – a prominent example here being the roof of the Basilica of St Francis in Assisi which was destroyed while its world famous frescoes were damaged.

These are only two of the many potential examples of hazards affecting regions in Central and South Eastern Europe. The exposure to risks depends on a bundle of different factors such as local climate, geology and geomorphology, population density as well as other human factors such as local industries, building regulations and land use patterns.

Several types of risks are widely spread across the CADSES programme area. Hydrological risks like flooding and droughts are an issue to be addressed throughout CADSES. In Southern Europe in particular earthquakes remain a major threat challenging building regulations as well as civil protection units. Industrial activities can also be connected with risks. Along rivers and in coastal areas technological hazards, such as accidental chemical spills, threaten human health and the environment.

It is clear then that most environmental and technological risks cannot be completely prevented. However, the effects on the population, infrastructure, property and the environment can be mitigated by appropriate measures. Risk assessment and risk management, as well as concrete measures in the field of disaster prevention, are crucial to achieving this aim. Land use management and spatial planning connected with risk communication measures, moreover, play a significant role in this process.

In 1985 the EU Member States agreed at a ministerial meeting in Rome that the coordination of civil protection strategies, risk assessment and disaster prevention

should be addressed in the Community's policy. In the past, disaster prevention had largely been focused on a national level. However, environmental and technical hazards do not stop at national borders and often exceed national territories. They affect regions located in several countries making cooperation beneficial for areas with a similar risk potential. Flooding, for example, usually affects whole river catchment areas, most of which belong to several countries. Therefore spatial planning has to take into account the management of whole functional areas. Transnational cooperation as well as fast and reliable information flows between regions and countries in disaster cases are indispensable and display significant potential to mitigate the effects of natural and man-made hazards.

2.2 CADSES measures and projects with a focus on risk management and disaster prevention

Two measures of the CADSES programme cover projects dealing with natural and technological risks (Measure 4.2: 'Promoting risk management and prevention of disasters' and 'Measure 4.3: Promoting integrated water management and prevention of floods'). A major focus of the CADSES programme is on projects dealing with flood prevention. Of the 21 projects included in the two measures about 15 cover risks related to flooding and water management.[4] The other projects address risk management in general, as well as different types of natural and man-made risks, like earthquakes or accidental river pollution. The following project examples from the INTERREG III B CADSES programme illustrate different approaches to, and categories of, projects dealing with risks. They illustrate how risk management and disaster prevention have become both the subject of, and a justification for, territorial cooperation.

2.2.1 General approaches to disaster prevention and risk management

The CADSES project MONITOR deals with general aspects of risk management and addresses land-use activities particularly in areas threatened by natural hazards. The project considers and involves the viewpoints of all relevant stakeholders like politicians, administrative officials, experts, the directly affected population, and the media. A central target here is to improve the methodology of risk-analysis and risk communication. Transparency should be increased and participatory approaches should result in transnationally comparable standards and optimised information flows. A comparative study of risk perception and an analysis of the state of risk management in the partner regions serve as a basis for the project. This means that risk monitoring methods are examined which are differentiated by risk quality and risk quantity as well as by differing legislative and organisational environments. The project generates regional hazard matrixes which illustrate the relationship between hazard potential and actual land use activities. Remote sensing is employed to elaborate risk monitoring tools while temporal measures are improved to ensure better risk management – also in respect of evacuation. The project also includes a thesaurus with risk related terms, compiled to guarantee a common approach in risk appreciation in the involved countries.

2.2.2 Flood prevention – A major focus of the CADSES Programme

Reducing the risk potential of flooding is a central topic of several CADSES projects. One factor responsible for rising risk of flooding is the growing prevalence of extreme weather events. According to the recently published reports of the Intergovernmental Panel on Climate Change (IPCC), extreme weather events as a result of climate change can be expected to occur more often in the future and their intensity

will probably increase in the years to come. It is predicted that storm-water and heavy precipitation events will affect most regions of Central and South Eastern Europe more often. A further reason for increasing flood risks is that more and more people have recently settled in the historic flood plains. In 1999, the EU Ministers responsible for spatial planning and the European Commission addressed the potential role of spatial planning in flood prevention in the ESDP. Several CADSES projects focus on the increasing importance of flood protection and spatial planning while others concentrate on the monitoring of meteorological and hydrological data, which is essential in flood risk assessment.

The ELLA project dealt with preventive flood protection measures for the Elbe River and involved partners from all countries sharing the river basin. ELLA compiled a river atlas illustrating potential flood risks and the damage potential in the entire Elbe catchment area while also developing an interactive flood map for municipal flood protection. Raising awareness of flood risks along the river was an integral part of the project. For the population living in the Elbe valley a touring exhibition was created which displayed flood risks and flood protection measures. Moreover, a joint spatial planning strategy for the river basin was developed. As such then the legal basis for flood protection was analysed and nine pilot measures were carried out in the project regions. Some of the project's actions focused on the protection of existing and the restoration of former retention areas. A methodology was developed to detect areas where floods originate and proposals for rainwater retention and land use in the main precipitation areas were worked out. This involved in particular the drawing up of measures in respect of agricultural and forest management. ELLA provided recommendations that flood risks should be acknowledged in building development plans while also proposing technical flood protection measures. At the project's conclusion a joint declaration was signed by policy and decision makers to implement the recommendations made by ELLA and to continue with the cooperation effort. A major challenge after project completion was to include the recommendations for preventive flood protection measures in spatial planning and in the related decision-making process.

Not far from the Elbe valley the Oder River flows from close to the Czech industrial city of Ostrava through Poland before it forms the Polish-German border. In 1997 one of the worst floods ever affected the Oder. In the years that followed, flood management became an important issue discussed among municipalities along the river. This event once again illustrated the necessity for transnational preventive flood protection. The aim of the CADSES project *ODERRegio* has been to include flood prevention measures within the spatial planning measures of the countries that share the Oder River basin, namely, in the Czech Republic, Poland and Germany. Among the measures and action plans developed, the adjustment of land-use patterns took a prominent position. The transnational cooperation effort identified retention areas, provided ideas for the common planning of the main infrastructure and integrated infrastructure endowments (railways, roads, bridges) into these concepts to mitigate flood risks. Threatened areas were classified and proposals for adjustments to land-use and building regulations were made in cooperation with the land-owners. Various stakeholders from the three countries along the Oder were involved in the project and a network of municipalities along the Oder was established to concretise the cross border spatial planning measures adopted.

To achieve a balance between economic interests, nature protection and the management of flood risks is the central aim of the *SUMAD* project. Contrasting interests frequently dominate land use issues in the alluvial plains of rivers. For example, water management agencies and landowners who clear floodplains of bushes and trees come into conflict with nature protection regulations. Detailed analyses of river stream flows help to answer the question of which changes in land use increase flood protection in alluvial plains. Improvements in the 'retention capacity' of an area aim to mitigate flood risks, while plans to connect rivers and backwaters have been established.

Forecasting systems help to predict flood events and ease their management while also helping in the assessment of the hazard potential of extreme weather events. The CADSES project *Risk Aware* developed a system for advanced weather forecasting to enable timely warnings. For this purpose, the relationship between weather conditions and their effects on the ground is examined. The project will enable the provision of short-range meteorological data (0-24 hours) to be made available. The project *Hydrocare* is concerned with the development of a model for the hydrological cycle of the CADSES region. It links the analysis of water resources with hydro-meteorological events. Water levels after rain events and storm-water runoff are measured and fed into the system. Moreover, methods and transnational tools are developed allowing for the rational exploitation of water resources.

In densely populated areas with a high degree of soil sealing, storm-water runoff caused by heavy precipitation is a problem. It is a major reason for flooding and for surface water pollution. If basic principles of storm-water management are applied the effect might however be mitigated. Thus far, however, few guidelines exist in respect of storm-water management and its implementation in urban drainage master plans. The project *RainDROP* compares the storm-water policies of the different CADSES countries and develops management and planning guidelines. Five partner cities from the Czech Republic, Germany, Greece and Slovakia also implement innovative technical solutions and measures as pilot projects, such as porous pavements, infiltration swales, through-trench-systems, cisterns, and retention ponds. Further large-scale investments beyond the project timeframe and budget are also being prepared.

2.2.3 Preventing and mitigating the effects of technological hazards

Despite improvements in water quality in nearly all European rivers, accidental spills of chemicals remain a threat endangering both the environment and human health. Riverbanks are often characterized by industrial landscapes leading to a high exposure to risks from accidental pollution potentially affecting all countries and regions downstream. The CADSES project *River Shield* aims to protect rivers from accidental pollution. If accidents happen, early warning and information systems involving all countries and regions along a river should detect the accidental pollution and alert the members of the emergency response regional networks.

Particularly along rivers such as the Danube or the Nestos, which flow through several countries, transnational emergency response measures and guidelines can help to minimise the impacts of accidents caused by industry.. Furthermore, the integration of risk management into land-use plans might result in guidelines in respect of

the fact that some activities connected with a high risk of spillages be no longer permitted in flood plains.

2.2.4 Projects fostering cooperation in respect of civil protection units

Southern Europe, particularly regions in Italy and Greece are endangered by earthquakes. Several recent disasters, and the inadequate response to them, prove that civil protection plans and building regulations still need to be improved. The *S.I.S.M.A* project aims at the reduction of the vulnerability of historic city centres in case of earthquakes, particularly in respect of to safeguarding important items of cultural heritage. Citizens and civil protection units are trained enabling them to act as first rescuers in case of emergency. As a first step, the 'know-how' regarding seismic risks and their mitigation in the project regions has been collected and analysed. As with *S.I.S.M.A* the project *Red Code* also involves civil protection units. Its aim is to establish common proceedings and guidelines to make transnational civil protection measures more efficient.

2.3 Risk Prevention in the CADSES follow-up programmes in the New Programming Period 2007 - 2013

Projects dealing with risk prevention and management continue to have a prominent position in the CADSES follow-up programmes 2007 – 2013. In the SOUTH EAST EUROPE Programme area of intervention 2.1 covers the topic 'Improve integrated water management and flood risk prevention' while 2.2 addresses the issue 'Improve prevention of environmental risks.' The main purpose of these areas of intervention is the development of transnational structures, systems and tools for risk protection (SOUTH EAST EUROPE Programme 2007, 95 ff.). According to the Operational Programme, 'transnational action is considered to be necessary since even single environmental "hot spots" can have a clear impact on a huge area and population' (SOUTH EAST EUROPE Programme 2007, 97).

The CENTRAL Programme deals with risks in the area of intervention 3.2 'Reducing risks and impacts of natural and man-made hazards.' In the operational programme of the CENTRAL Programme the need to include risk prevention and management is regarded as necessary in so far as concepts for the management of risks and civil protection are still regarded as 'end-of-pipe' approaches focused on the national level (CENTRAL Programme 2007, 31). Integrated approaches to risk management, the coordination of measures to reduce risks and the harmonisation of standards are the major targets of both new programmes.

3. Conclusions

3.1 Territorial co-operation projects successfully reduce uncertainty, improve risk management and help to prevent disasters

As the project examples from the CADSES Programme show, different aspects of risks are used as justification for transnational co-operation. First, we have knowledge development and knowledge transfer in respect of risks. The desire to overcome different standards of risk prevention and risk-related knowledge are the major goals of many projects dealing with risk. That the process of knowledge transfer can be successful is shown by the project results where less advanced regions have profited from knowledge from more experienced partners. Furthermore, project partners

from regions exposed to the same risks experienced, in many cases, a joint process of knowledge development, e.g. forecasting models reduced uncertainty and extended pre-warning times in cases of disaster occurrence in the regions involved.

Besides knowledge transfer and development, joint planning measures to mitigate and prevent risks led in many cases to 'win-win' situations for project regions regarding spatial planning measures and risks. However, future weaknesses and challenges can be identified as related to the fact that these institutions and commissions usually do not have the power to take decisions. Only recommendations can be made, their implementation however remains a matter that has yet to be solved on the national level.

A further problem which poses a potent future challenge is the degree of public awareness in respect of certain risks and how they are included in programmes and project proposals. Blaikie (1994, 65) argued when addressing preventive strategies to cope with risks, that '[Preventive actions] require successful political mobilisation […]. This is often easier in the immediate aftermath of a disaster, when public awareness is high and the political payoff of government action is significant.' This illustrates the problem that some risk categories which dominate the risk discourse might be emphasised in programmes and projects, whereas other risks are not addressed.

3.2 Territorial co-operation programmes need to further refine their approach to the need for better coordination between individual projects

One reason for this is that the way in which risks are addressed on a programme level clearly lacks sufficient coordination. An individual project might be excellent – however it remains unclear whether the case-by-case approval and implementation of projects really contributes to sustainable and balanced development and whether it does so in the most effective and efficient way. Trial and error often seem to be the guiding principles here. Considering the high risks related to territorial development, this approach is not satisfactory. Instead a broader approach to economic reasoning here is necessary. In the context of uncertainties economic reasoning does not mean that projects must be approved only on the basis of a financial cost-benefit analysis. What needs to be done and what indeed is possible, is to refine the process of programme development, project generation, selection and approval. Each programme has a limited amount of financial, intellectual and other resources. The professional process management of programme development and implementation is necessary to ensure that projects and programmes achieve maximum success with respect to the risks and objectives addressed.

Improved coordination does not necessarily require 'more bureaucracy' but instead merely a little fine-tuning. CADSES project experience shows that the origin of many bureaucratic and de-motivating management procedures often goes back to ill-prepared project ideas. Where partners took more time at the beginning of a project to identify their common objectives and interests, their common understanding, approach and implementation of work plans ultimately ran much more smoothly. At the same time others took it easier and delegated the clarification of open issues to the project's implementation period. In so doing they undoubtedly increased the risk of co-operation problems during implementation. In these cases painful procedures

to improve the running of specific projects often became necessary. It should therefore be made very clear however that major territorial risks simply cannot be successfully addressed in this *ad hoc* manner.

3.3 Risk management is management in the shadow of uncertainty

In general, risk management as subject of projects and programmes focuses on the analysis and research of technical solutions to technical challenges. In reality, the situation is actually rather more complex: Risks are social constructs and, as such, they depend on the given institutional framework (Beck 2007, 66). It should therefore always be considered who defines what is, and what is not, a risk, and for whom. In addition, it has to be openly admitted that not all risks can be calculated and that this limits the expertise available to decision-makers. Therefore, the management of non-estimable risks is a process of management in the shadow of uncertainty. Policies, science and technology have to be aware of this reality and to take it into consideration in a more comprehensive manner.

To do this in the framework of programmes like INTERREG III B CADSES is certainly innovative. Programmes such as CADSES are based on an open approach which allows for a lot of creativity. The disadvantage of this approach is that the financial incentive does not guarantee high quality. Given the fact that applicants define their projects on their own, the programme offers an excellent chance for applicants with outstanding ideas to be successful. What is very difficult in this situation is the need to ensure coherence between the projects. Priority is given to the generation of new ideas and approaches. No coherent and targeted strategy was fixed in advance (intended strategy) but it is possible that a strategy will be developed and refined during the process of co-operation (emergent strategy) (Wiechmann 2007). For the time being it remains uncertain as to whether all the various INTERREG projects and programmes will generate a common strategy and thus provide a relevant contribution in the face such risks in a useful fashion. According to Beck's *world risk society* theory this uncertainty is in any case inevitable. Nonetheless, related governance tools should be constantly evaluated and further developed to attain an increasing measure of certainty wherever possible.

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Notes

[1] Compare www.ikse.de a website of the International Commission for the Protection of the Elbe River. The website also provides links to Commissions responsible for other rivers.

[2] For the quoted examples from the programmes CENTRAL EUROPE and SOUTH EAST EUROPE, please, refer to http://www.cadses.net/New_Programmes_2007_2013.html

[3] For detailed information on all CADSES projects discussed in chapter 2, please, refer to Joint Technical Secretariat (2007b) and http://www.cadses.net/en/projects/apprpro.html

[4] See table 1: 'INTERREG III B CADSES Projects under priority 4'

Table 1: INTERREG III B CADSES projects under priority 4: Environmental protection, resource management and risk prevention

Measure	Acronym	Project Name
4.1	**BETTER**	Biofuel chain Enhancement for Territorial developmenT of European Regions
4.1	**C2ENET**	Central Europe Environmental Net
4.1	**CARBON-PRO**	CARBON balance drafting and new resources management tools according to Kyoto PROtocol
4.1	**CER²**	Central European Regions Cluster for Energy from Renewables.NETwork
4.1	**DRBP**	Environmental Infrastructure Measures in the River Drava Basin
4.1	**ISOTEIA**	Integrated System for the promotion Of Territorial / Environmental Impact Assessment in the framework of spatial planning
4.1	**KATER II**	KArst waTER research programme
4.1	**MAGIC**	Management of Groundwater at Industrially Contaminated Areas
4.1	**SAWWTACA**	Sewerage And Waste Water Treatment in the Adriatic Coastal Area: development of an adequate tool on project develom.
4.1	**SMS VOSLESS**	Implementation of Solvent Management Systems as Transnational approach to Reducing VOC's Pollution
4.1	**TAQI**	Transnational Air Quality Improvement: A Management Tool for Regional Planning
4.2	**ACCRETe**	Agriculture and Climate Changes: how to Reduce human Effects and Threats
4.2	**MONITOR**	Hazard Monitoring for Risk Assessment and Risk Communication
4.2	**Red Code**	Regional Disaster Common Defence
4.2	**RIMADIMA**	Risk-, Disaster-Management & Prevention of Natural Hazards in Mountainous and / or Forested Regions
4.2	**RISK AWARE**	RISK-Advanced Weather forecasting system to Advice on Risk Events and management
4.2	**RIVER SHIELD**	Protecting Rivers from Accidental Industrial Pollution
4.2	**S.I.S.M.A.**	System Integrated for Security Management Activities to safeguard and protect historic centres from risks
4.2	**STRiM**	Remotely Accessed Decision Support System for Transnational Environmental Risk Management
4.3	**CADSEALAND**	Land-Sea Interaction: Coastal State and Evolution in CADSES
4.3	**Educate!**	Building the Future of Transnational Cooperation in Water Resources in South-Eastern Europe
4.3	**ELLA**	ELbe – LAbe Flood Management Measures by Transnational Spatial Planning
4.3	**ENHYGMA**	ENvironmental, HYdrologic and Ground MAnagement: Innovative Solutions for the CADSES Areas
4.3	**FLOODMED**	Monitoring, Forecasting and Best Practices for Flood Mitigation and Prevention in the CADSES Region
4.3	**HYDROCARE**	Hydrological Cycle of the CADSES Regions
4.3	**ILUP**	Integrated Land Use Planning and River Basin Management
4.3	**MOSES**	Improvement of Flood Management System
4.3	**NETWET 2**	Networking Perspectives of Transnational Cooperation and Participatory Planning for Integrated Water Resources Management through the Promotion of New Forms of Spatial Governance
4.3	**ODERREGIO**	Transnational Action Programme - Spatial Planning for Preventive Flood Protection in the Oder Catchment Area
4.3	**RainDROP**	Development of stoRmwater Operational Practices guideline
4.3	**SUMAD**	Sustainable Use and Management of Alluvial plains in Diked river areas
4.3	**WAREMA**	WAter REsources MAnagement in protected areas

Table 1: INTERREG III B CADSES projects under priority 4: Environmental protection, resource management and risk prevention

Acronym	Lead Partner (LP)	Town	LP Country	Budget in EUR
BETTER	Province of Forli' - Cesena, Agro-Food Policy Department	Forli'	ITALY	1.088.029,00
C2ENET	Town of Vsetín, City Manager	Vsetín	CZECH REP	826.144,00
CARBON-PRO	Autonomous Region Friuli Venezia Giulia, Forestry and Forest Fire Department	Udine	ITALY	1.890.641,06
CER²	Österreichisches Forschungs- u. Prüfzentrum Arsenal GmbH, Business Area Renewable Energy	Vienna	AUSTRIA	2.628.650,36
DRBP	ARGE DRBP (Arbeitsgemeinschaft Drava River Basin Project)	Klagenfurt	AUSTRIA	2.283.834,00
ISOTEIA	CIHEAM - Mediterranean Agronomic Institute of Chania	Chania	GREECE	1.194.136,00
KATER II	Municipality of the City of Vienna, MA31 Waterworks	Vienna	AUSTRIA	3.328.336,00
MAGIC	Central Mining Institute (GIG), Department of Geology and Geophysics	Katowice	POLAND	2.355.000,00
SAWWTACA	Municipality of Rimini, Public Works Sector	Rimini	ITALY	908.850,00
SMS VOSLESS	Province of Forli'-Cesena	Forlì	ITALY	1.087.966,00
TAQI	Austrian Environmental Expert Group (AEEG)	Vienna	AUSTRIA	1.525.375,00
ACCRETe	Province of Parma, Agriculture Department	Parma	ITALY	750.000,00
MONITOR	Austrian Federal Ministry of Agriculture, Forestry, Environment and Water Resources	Vienna	AUSTRIA	1.552.700,00
Red Code	Basilicata Region-Infrastructures and Mobility Department	Potenza	ITALY	1.310.000,00
RIMADIMA	Community Mountain Appennino Forlivese, Civil Protection - International Projects	Predappio	ITALY	959.000,00
RISK AWARE	ARPA ER - Regional Environmental Agency in Emilia-Romagna, Hydrometeorological Service	Bologna	ITALY	2.801.425,00
RIVER SHIELD	Region of East Macedonia Thrace, Water Resource Management	Komotini	GREECE	1.280.000,00
S.I.S.M.A.	Umbria Region, Dept of Territorial Policy, Environment and Infr.	Perugia	ITALY	2.155.142,00
STRiM	Mediterranean Agronomic Institute of Chania, Environmental Management	Chania	GREECE	1.234.241,20
CADSEALAND	CINFAI - Consorzio Interuniversitario Naz. per la Fisica, UNICAM	Camerino	ITALY	2.529.996,00
Educate!	National Technical University of Athens, School of Civil Engineering, Water Resources	Athens	GREECE	950.000,00
ELLA	Saxon State Ministry of the Interior, Div. 45	Dresden	GERMANY	2.560.000,00
ENHYGMA	UVB - Unione Veneta Bonifiche	Venice	ITALY	1.163.325,00
FLOODMED	National Technical University of Athens, Civil Engineering	Zografou	GREECE	2.250.000,00
HYDROCARE	National Consortium of Universities for the Physics of Atmospheres and Hydrospheres	Camerino	ITALY	2.466.200,00
ILUP	Federal Ministry of Agriculture, Forestry, Environment and Water Economics, Forest Division	Vienna	AUSTRIA	7.068.000,00
MOSES	Slovak Hydrometeorological Institute, Hydrology	Bratislava	SLOVAKIA	2.050.000,00
NETWET 2	Center of Euro-Mediterranean Regions for the Environment	Athens	GREECE	2.716.600,00
ODERREGIO	Gemeinsame Landesplanungsabteilung Berlin-Brandenburg (Joint State Planning Department)	Potsdam	GERMANY	2.997.000,00
RainDROP	City of Karviná, Department of Local Economy	Karviná	CZECH REP	2.502.200,00
SUMAD	Bavarian State Ministry of the Environment, Public Health and Consumer Protection	Munich	GERMANY	2.769.000,00
WAREMA	Region of Friuli Venezia Giulia, Mountain Areas	Udine	ITALY	1.099.440,00