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Preconditions for successful cross-border cooperation on environmental issues. Historical, theoretical and analytical starting points

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Historical, theoretical and analytical starting points

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1 Introduction and Formulation of the Question

Within the framework of the present study, there will be an attempt to identify the obstacles to cross-border cooperation on environmental issues and to formulate the preconditions for successful cooperation. The study is directed towards cross-border cooperation on a regional level. The term "region" refers to a level below the respective nation states and above the respective municipalities. "Cross-border" means across national borders. The specific investigation object is thus the overlapping of two different policy sectors: on one hand cross-border cooperation on a sub-national level and on the other hand environmental policy. Both policy fields have a number of common characteristics.

- Environmental policy and cross-border cooperation are two relatively new policy fields. Although both policy fields have been an object of discussion in politics and political science, substantially increasing significance can be seen in both fields in political practice as well as in an increase of scientific discussion. Different groups are responsible for this development. In conjunction with the emergence of the single European market and the fundamental political changes in Eastern Europe, the "impermeability" of borders is being increasingly criticized and attempts are being made to dismantle the effects of this division caused by these borders.
- An evaluation of the "success" of a policy in empirical investigations is very difficult in both policy fields, because a simple INPUT-OUTPUT comparison is often only possible to a limited extent given the complexity in both fields. The reason is that often no concrete "trigger" for a political action can be determined, and that the policy OUTPUT is composed of variously structured political actions or instruments. Consequently a valid analysis of the effects of individual action programs is only possible to a limited extent in both policy fields.
- Both environmental policy and cross-border cooperation on the sub-national level represent policy fields that are receiving increasing attention from the European Union. This can be seen on one hand in the numerous scholarly studies in this sector that the EU (co-)finances, and on the other hand in the concrete actions of the EU Commission, which is actively involved in both fields. This also applies to the sector of cross-border cooperation, where the creation of the

INTERREG community initiative provided strong incentives for further development and intensification in this area.¹

There is currently rapid progress in both policy fields, which is manifested by an increasing number of legal regulations concerning environmental standards on the European level on one hand, and on the other hand by an increasing institutionalization and intensification of cross-border cooperation. A scholarly investigation of these two policy fields is strongly influenced by this progress. Especially the use of standardized analysis tools is only possible to a limited extent in these continually changing policy fields. Consequently a need has arisen to develop a specific set of analytical tools for the investigation of cross-border cooperation in environment issues. However, it is almost impossible to develop a comprehensive set of analytical tools for the complete policy field. Therefore we have attempted to identify individual analytical tools with which the specific problems of cross-border cooperation can be analyzed in the environmental sector. This identification procedure of specific analytical tools can take place against the background of the discussion in (political) science about the analysis of environmental policy and the analysis of horizontal political cooperation. However, the concerns of this study have to be first defined more explicitly. It seems to make sense to depict the historical development and characteristics of the two policy issues "trans-national environmental policy" and "cross-border cooperation".

The objective of this study is to identify the conditions for successful cross-border cooperation in environmental protection. This will be done by analyzing previous efforts to practice regional cross-border environmental protection and by determining positive and negative factors of influence. Pinpointing this knowledge and these interests is the central topic of this study. Based on these matters, we will consider how the negative factors of influence (e.g., language barriers) can be minimized and the positive factors (e.g., a common cross-border identity) can be promoted. We will also consider how the negative characteristics of these factors of influence (e.g., inadequate organization) can be changed into positive ones.

The contextual objective and consequently the point of reference in the analysis is the successful protection of the environment in border areas. Seen from a methodological perspective, the success of environmental protection in border regions is the pivotal dependent variable. In a first step, two (indirect) variables can be distinguished in this pivotal dependent variable, upon which the latter is

¹ The extent to which actual incentives have been provided for the intensification of cross-border cooperation and to what extent this support has also been used for environmental policy actions will also be investigated within the framework of the present study. The question is especially pressing about whether the numerous activities within the framework of the INTERREG program were only "Potemkin" villages, solely serving to reap sponsorship funds.

dependent. On one hand there is cross-border cooperation, and on the other hand successful environmental protection measures (cf. Diagram 1).

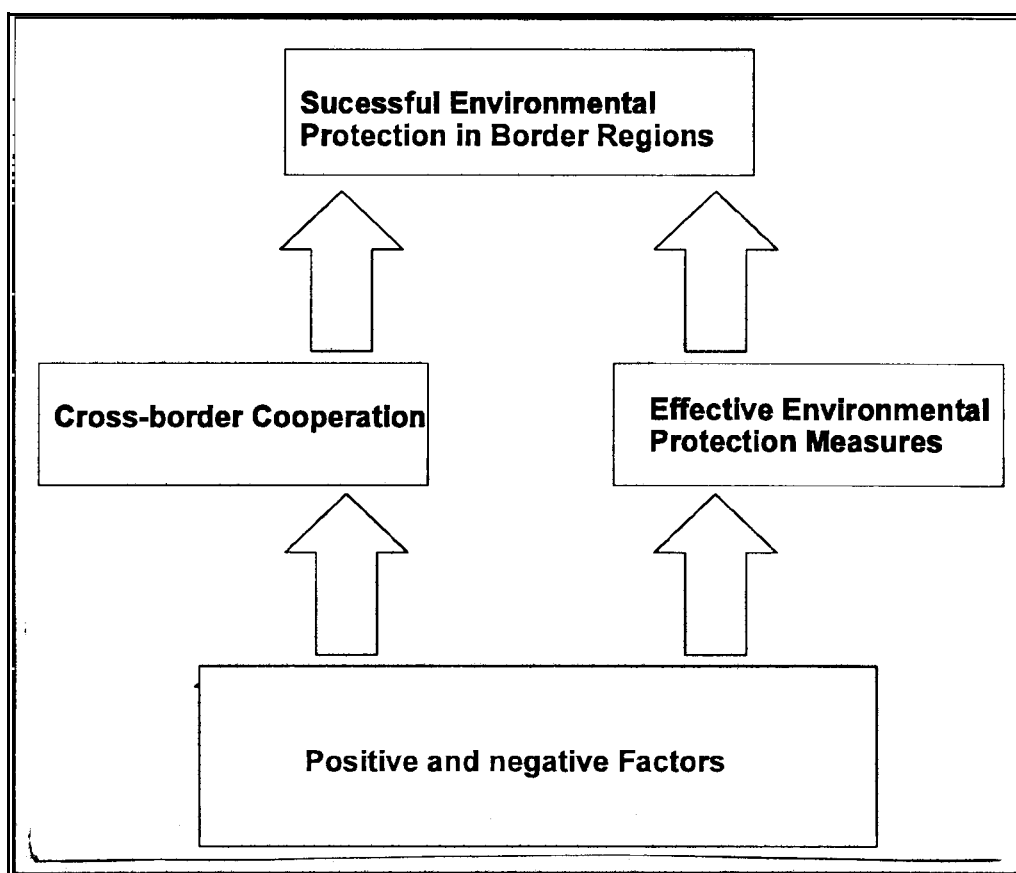


Diagram 1 Dependent and independent variables of cross-border environmental policy

Successful environmental protection in border regions requires both the coordination and the existence of successful environmental protection efforts (by the subregions). Only positive profiles of these two indirect variables can ensure attainment of the objective, because - for example - successful cooperation in ecologically questionable measures (e.g., road construction) does not produce the desired effect. The opposite applies as well. Sensible environmental measures in one region without coordination with other regions can result in regional displacement of problems (e.g., export of waste materials) and prevent more basic solutions. Consequently positive profiles for both variables are necessary, but neither is to be considered a sufficient condition alone. These indirect variables are contingent upon factors of influence, whereby there is already a great deal of knowledge about these relationships.

In the following chapters of this theoretical part of the total study, after a general introduction we will examine the determination factors for the contingent variables (what is successful cross-border environmental protection?) and for the independent variables (i.e., potential factors of influence). The approaches of the environmental policy analysis are discussed in Chapter 3. On the basis of these approaches, we were able to derive a sensible and practical category for "successful environmental protection" on one hand, and on the other hand potential factors of influence (for successful environmental protection). In Chapter 4, the approaches are presented for analyzing horizontal (and vertical) "Politikverflechtungen" (political interrelations, interdependencies and interactions). Further potential factors of influence (on successful cooperation) are then derived from this. The final chapter presents a summary of the systematization of potential factors of influence on cross-border cooperation in environmental issues.

2 The Political Fields of Action "Trans-national Environmental Policy" and "Cross-border Cooperation"

In this chapter we will sketch the historical development and possible features of the two political fields of action relevant to this study. We will also present the initial pivotal characteristics of regional cross-border cooperation in environmental protection. The possible reasons or motivation for cross-border cooperation in environmental protection will be distinguished analytically, and the typical structural patterns of this policy field will be identified. The latter is a network structure, whereby horizontal negotiating systems between public institutions compose the core of this network.

2.1 Environmental Policy as a Trans-national Responsibility

Pollution does not stop at national borders. Economic and ecological relationships are international. Problems are especially created in environmental protection efforts because the costs and utilization of the ecological effects of economic activities and environmental protection are unequally distributed across borders. In this chapter we will present the basic types of cross-border environmental problems as a first step. In a second step, there will be a rough outline of how these problems have been dealt with in the last decades.

2.1.1 Types of Cross-border Environmental Problems

Environmental policy cannot stop at national borders due to ecological reasons. But socio-economic relationships also necessitate a coordinated environmental policy. This is called "multiple interdependence" (Struebel, 1992: p. 26) in order to encompass the multifaceted relationships of international environmental policy. In principle, three types of ecological relationships are distinguished, which shall be briefly introduced below:

- One-way spill-overs
- Multiple-way spill-overs

- Protection of common natural goods

In one of the first analyses of "environmental foreign policy", Prittwitz (1984: p. 17) distinguished between a **one-way spill-over** and multiple-way spill-over with pollutants. A one-way spill-over refers to pollutant or risk export when there is no corresponding import. In the water sector, it is typically the upstream country that routes its sewage into rivers or lakes without directly suffering the consequences. In air pollution, this is the industrial site from which pollutants are exported by the wind across a border. The export of waste materials, transit traffic, the locating of nuclear power plants close to a border, and one-sided utilization demands for water reserves are other types of cross-border externalization of problems. One-way spill-overs result in asymmetric structures of interests. The pollutant importer is strongly interested in solving the problem (possibly a negotiated settlement), the pollutant exporter - *ceteris paribus* - is only slightly interested.

An agreement is easier to reach when there is a balanced cross-border pollutant exchange. The interests are symmetric where there are **mutual pollutant relationships**, because both parties cause and suffer pollution in the same measure. The application of the "causer principle" consequently results in a balanced distribution of costs. In theories of international relations, symmetrical structures of interests are considered favorable preconditions for cooperation (cf. Wolf, 1991: p. 101; Zuern, 1992; Prittwitz, 1984: p. 18).

Environmental problems that can only be solved internationally are another relationship type in the ecological field. Paradigmatic examples for this are the climate changes and the hole in the ozone. Other global goods are the oceans, the Antarctic, the variety of species, and the genetic reservoir which is indispensable to ecological stability. These are "**common goods**" or shared goods of nature for which there are no utilization demands that can be limited nationally. These goods are threatened with over-usage without international regulation of their utilization rights and limitations. If the consumption, utilization or the destruction of these global goods is not subject to limitations, anyone who would forego their utilization in spite of this would carry one-sided costs without contributing effectively to their protection (cf. Wolf, 1991; Breitmeier et al., 1993; Oberthuer, 1993).

In addition to the global or international common goods depicted here, common goods are also of great significance on a regional level. This especially applies to border regions, because sensitive eco-systems do not necessarily stop at national borders. This can be referred to as a regional cross-border "allmende" ("common land"), the utilization of which must be regulated. For example, this refers to cross-border drinking water or ground water reserves, cross-border national parks, or

sensitive eco-systems (e.g., ozone dangers posed by weather inversions, locations in valleys, etc.).

Interdependence does not only apply to ecological relationships, but also to economic ones. Different environmental standards but unrestricted mobility of people, work, goods and capital can result in undesirable evasion reactions. A good example of this is the "gasoline tourism", which is a widespread phenomenon in border areas when the national petroleum taxes differ. Additionally competitive disadvantages can arise for industries in countries with high standards, even if these are not to be overestimated. Compared to other cost factors, environmental protection plays a relatively subordinate role for most branches (cf. on this discussion Sprenger, 1991; Sprenger, 1992; Hey/ Jahns-Boehm, 1989). Consequently the danger of moving to another location due to different environmental standards may not be overestimated. There is substantial economical leeway for discrimination in environmental policy. However, these differences could in fact have a certain relevance in regions close to borders, where communication and mobility of capital and labor is less expensive than when great distances are involved.

The components of "multiple interdependence" described above require international cooperation. This need can be found especially in border regions where mutual dependence and relationships are very profound due to their regional proximity and shared eco-system.

2.1.2 Development of Trans-national Environmental Policy

From an historical viewpoint, trans-national environmental policy is a relatively recent phenomenon (cf. Prittwitz, 1984; Struebel, 1992). It was put on the international agenda at the beginning of the 70s within the framework of an international conference in Stockholm (cf. Breitmeier et al., 1993: p. 163). On one hand, this conference took place when there was the unfavorable premise of an instance of regional one-way spill-over - the British export of pollutants to the Scandinavian countries. However, on the other hand it also took place under the premise of the "limits to growth", which was the overriding aspect of the discussion in the early seventies. The first national and international environmental programs and philosophies were developed in the early seventies. The first regional cross-border protests by environmental groups against planned locations of industries that damage the environment also took place at that time. Numerous regional and international treaties dealing with the environment were concluded in the following years. Foremost among these treaties were the "international regimes" to protect the oceans and inland waters as well as systems to deal with cross-border pollution (Breitmeier et al., 1993: pp. 172 et seq.). The term "international regime"

denotes common principles, standards, rules and procedures that were negotiated internationally to solve problems.

A second wave of international environmental policy developed within the context of the global climate protection debate at the end of the eighties. Its provisional high point and culmination was the UNCED conference in Rio in the summer of 1992. The treaty concluded there is not so much significant due to its substantial results but rather due to the creation of a common institutionalized framework within which global issues such as climate protection and maintaining the variety of species can be dealt with in the future (cf. Oberthuer, 1993).

Bi-national and multi-national cooperation began after a slight delay, cooperation that affects border regions. In 1977 there was a German-French treaty dealing with radioactive waste, and in 1981 a more detailed treaty dealing with nuclear safety (Woehrling, 1987: p. 157). Switzerland concluded bilateral treaties with both Germany and France in 1979 and 1980 dealing with mutual information about planning for and emergencies in nuclear power plants (Wildhuber, 1987: p. 225). In 1982 and 1984, the trilateral upper Rhine conference mandated recommendations for the mutual supply of information about new projects with damaging effects to the environment (Paetzold, 1987: p. 127).

Consequently the first wave of cross-border environmental policy concentrated on rudimentary components of shared risk management of dangerous facilities with a threatening cross-border potential and on the responsibilities to inform and consult.

The European Union plays an intermediate role between international and national environmental policy. The rules for negotiating a treaty do not have to be redefined for each individual case in the EU. European environmental policy has been de facto institutionalized since 1973 as a valid type of international agreement. Since 1987 it has been even more strongly institutionalized with the Single European Act. European environmental policy received its dynamics from the necessity to harmonize different standards that could have endangered the objective of a single European market. Consequently it was the result of economic integration and not only an answer to the international endangering of the environment. Thus European environmental law is quantitatively more comprehensive than individual international agreements could be. Over 200 environmental directives have been issued, five environmental action programs, as well as numerous recommendations and resolutions.

In a qualitative sense, European environmental policy is lacking. It does not meet the requirements that are formulated in the environmental action program and in the EU treaty (cf. Reh binder/ Stewart, 1985; Struebel, 1992; Hey, 1994). This

environmental law provides incentives for cross-border cooperation insofar as it harmonizes minimum material requirements for environmental protection. Thus it creates a minimal framework for the cross-border fulfillment of these minimum requirements. European environmental law might promote cooperation that extends beyond the level of consultation.

The discussion about environmental problems in border regions leads a shadowy existence compared to the international debate. Cross-border environmental problems only play an important role on the international level. Consequently their international dimensions are mainly dealt with and not their regional ones. International environmental policy took on a cross-border, regional dimension starting with the prevention of water pollution. The treaty of Steckborn at Lake Constance was among the first international treaties in Europe concerning the protection of inland waters, concluded in 1960 (Breitmeier et al., 1993: p. 170). Cross-border programs were already started in the sixties to protect Lake Constance, for example the construction of sewage treatment plants (Struebel, 1992). These programs were continually developed in the seventies and eighties to maintain the water quality of this important drinking water reservoir. Another example is the Rhine Protection Treaty of 1963 and the subsequent treaty and proposition packages. In 1987 an international action program was concluded for the Rhine, that is to substantially improve the water quality by the year 2000 (Bern Accord). Various treaties dealing with the protection of the "inland seas" (e.g., Baltic Sea, North Sea, Mediterranean) were concluded in the seventies and eighties. These seas are used and abused by several bordering countries each.

The European emissions protection law is especially of regional and cross-border significance. The EU already decreed quality standards for surface water, drinking and ground water, and for the concentration of pollutants in the air in the seventies and eighties. The application of these standards must be done on the regional level. Safety regulations for dangerous facilities and the European conservation guidelines (especially guidelines dealing with bird and habitat preservation) also have regional and cross-border dimensions (cf. Kraemer, 1988c). The cross-border dimension was first anchored in EU law in 1982 with the Seveso guideline (Woehrling, 1987: p. 166). The Seveso guideline mandates a cross-border obligation to provide information concerning large chemical industry projects. In Art. 7 of the EIA guideline of 1985,² early notification was required and a cross-border consultation recommended. Other EU guidelines also have a cross-border dimension, especially the regulations concerning cross-border transport of dangerous waste materials, the air purity and the water protection guidelines.

² Guideline of the council of June 27, 1985 concerning the environmental compatibility text for specific public and private project (85/ 337/ EEC) in : Abl.* L 175/ 40f from July 5, 1985)

Additional incentives for environmental protection in border regions came from international organizations such as the OECD and the UN. The OECD already published its "Recommendations of the Council for Strengthening International Cooperation on Environmental Protection in Frontier Regions" in 1978 (Speiser, 1993: p. 83). In February, 1991, the UN concluded a treaty for "Cross-border Environmental Impact Assessments". This stipulates that information is to be provided to affected countries when there are projects that cause environmental damage across borders. When the neighboring country so desires, it can take part in the environmental impact assessment. The treaty guarantees the cross-border participation of the public. It stipulates close cross-border consultation of all affected parties. Thus it is more precisely formulated than the EIA guidelines of the EU, that only stipulate that officials must be provided information (Mayer-Rutz, 1992: p. 69). Another treaty was concluded in 1992 that deals with cross-border risk management when there are accidents in dangerous facilities as well as with the protection of cross-border water resources (ECE, 1992). The cross-border risk management accord defines information obligations, emergency relief measures, and recommendations for mutual aid. The elaboration of liability responsibilities is only recommended very vaguely. The treaty requirements concerning cross-border water resources are much more comprehensive with respect to their scope and profundity of effects compared to previous treaties. It is a question of the protection of common resources on the basis of the precautionary principle. The objective is to reduce pollution of ground and surface waters, as well as to clean them up insofar as it is necessary. The treaty postulates the application of the precautionary principle, polluter pays principle and reciprocity principle. It formulates material criteria for water protection, such as the use of the best available technology, the construction of sewage treatment plants, extensive agriculture and the development of ground water protection plans.

New incentives can be expected with the establishment of the single European market and the elimination of border controls at the beginning of 1993. This especially applies to border regions, that experience the contradictions between European unification and different, contradictory environmental policies and models most clearly. The Swiss border cantons are singularly affected by this, where "micro foreign policy" in the borders regions is to be the substitute for "macro integration" into the European economic sphere and the EU. Consequently cross-border cooperation on environmental protection will most probably gain considerable significance in the next few years. This revaluation is closely related to the rediscovery of the regional dimension for solving numerous problems associated with the environment (e.g., traffic, waste disposal, meadowland preservation). The increasing significance of cross-border cooperation in environmental protection corresponds to the increasing significance that cross-border

cooperation has gained in general in the past years. Consequently the development of cross-border cooperation will be described below and there will be an attempt to develop a systematic delineation of the different cooperation forms.

2.2 Cross-border Cooperation as a Political Field of Action

Regional cross-border cooperation does not have much in common with transnational environmental policy with respect to its objectives and history. Consequently the history, objectives and characteristic forms of regional cross-border cooperation have to be sketched before the overlapping sectors of the two political fields can be dealt with.

2.2.1 The Development of Cross-border Cooperation in Europe

Border regions have become more prominent than previously was the case from the viewpoint of communal and national politics in the last years and decades. This can be seen in the continually increasing number of institutionalized amalgamations in many different border regions. The original initiative for such amalgamations came from a few active border regions. However, it was also strongly promoted by international organizations, especially by the Council of Europe. Especially EUREGIO on the German-Dutch border and the Regio Basiliensis on the upper Rhine can be considered pioneers of cross-border cooperation on a sub-national level. However, a number of institutions have come into existence in West and Central Europe whose focal point is cross-border cooperation on a sub-national level. The institutions in the various border regions differ greatly in their organizational structures. Exemplary here is EUREGIO, which comprises the region Twente, Holland and Rhine-Ems, Germany and units of 104 communities in a communal association,³ and the Regio Basiliensis, a Swiss association institutionalized by private law and founded in 1963. This association has the objective of promoting the upper Rhine region to a collective European border region. As a national association, the Basiliensis region is not the institution under which all cross-border cooperation in the upper Rhine region is concentrated, but rather is the "contact" in Switzerland for the other institutions concerned with cross-border cooperation in the region.

³ For considerations on the institutional arrangements of EUREGIO, cf. Gabbe, 1987: pp. 122 et seq., for example.

Of course there are different objectives in the different groups cooperating across borders. However, in principle two main objectives can be distinguished. Firstly, cross-border cooperation serves to reduce existing border obstacles and thus promote the creation of a "European house". And secondly, cross-border cooperation can strengthen the position of the numerous border regions with respect to the respective national centers and thus strengthen the position of the regions in a "unified Europe" (cf. Borkenhagen, 1992: p. 40).

The range of topics of European regions was and is multifaceted and extends in EUREGIO, for example, from economy to traffic, social issues, agriculture, environment, technology and even to culture, education and tourism (cf. Gabbe, 1987: p. 127). The reasons that led to institutionalization of cross-border cooperation were and are also very different. However, there is also a connection to the basic objectives of cross-border cooperation. Exemplary here is the founding of EUREGIO, which was very strongly motivated by the fact that they felt neglected (especially economically) and restricted; they wanted to improve their (economic) development options through common lobbying at the center of power and through reduction of the internal barriers (cf. Friedrich-Ebert-Stiftung, 1992; von Malchus, 1975).

The development of cross-border cooperation in the various European border regions was strongly promoted by the activities of international organizations. The Council of Europe, the OECD, the CSCE and the EU have been especially active in supporting and as a platform for regional cross-border contacts since the end of the sixties (cf. Speiser, 1993: p. 72 et seq.). Consequently we will attempt to provide an overview of their activities below.

The activities of the Council of Europe are certainly in the forefront. Various committees within the Council of Europe deal with issues of cross-border cooperation. In 1987 a ministerial committee of the Council of Europe created an "Ad-hoc Committee for Cross-border Cooperation" (CAHCT), in which government representatives and observers of the European border regions investigate already existing cross-border cooperation and work out model agreements, e.g., for interregional and inter-communal cooperation in the area of spatial planning. The work of the ad-hoc committee is being continued by the steering committee for regional and communal affairs (CDLR), a committee of experts that meets regularly to discuss cross-border cooperation and in which eleven countries and representatives of various regions work together. There has been a study and documentation office for cross-border cooperation of municipal corporations in the Secretary General's office of the Council of Europe since 1982. Among its responsibilities, it provides help in working out agreements, especially in drawing up legal texts, to promote the creation of cross-border regions. Additionally, the Permanent Confe-

rence of Municipalities and Regions of Europe (CMRE) has been an advisory committee at the Council of Europe since 1957, and the Assembly of the European Regions (AER) with a study group for border areas since 1985. The objective of the AER is to have regions directly involved in European policy, especially regional policy. The European Regional Planning Ministerial Meetings and the European Conference of Interior Ministers also deal with issues of cross-border cooperation. These committees regularly send resolutions recommending matters to the Council of Europe and/ or national governments, for example the European Regional Planning Charta of 1983, which has received general acceptance as a standards catalog and European model.

The CMRE and the parliamentary assembly of the Council of Europe held the first "European Conference of Regions" in Strasbourg in 1972. Four additional such conferences were held by 1991. Within the framework of these European conferences, political, administrative and scholarly representatives of the European border areas were able to exchange information and experiences, to pinpoint problem areas, and to direct recommendations and proposals for solutions to their respective governments and to European institutions.

In 1980 the European framework agreement concerning cross-border cooperation between municipal corporations was created. The intention was to provide the regions a legal instrument to overcome obstacles grounded in national law. However, since it is subject to national sovereignty, the affected regions are still dependent on additional bilateral agreements on a national level. There is no recognition of the rights of communities to cross-border cooperation in the framework agreement. Besides the actual treaty text, the framework agreement also contains model agreements and text proposals for cross-border cooperation. On the basis of the framework agreement for cross-border cooperation between municipalities, the Benelux countries as well as Holland and the German states Lower Saxony and North Rhine-Westfalia concluded treaties in which the right of communities and regions to cross-border cooperation were guaranteed internationally. It also gave the body politics new legal options for cooperation (inter alia, cross-border joint boards) (cf. von Malchus, 1991: p. 248).

Besides the Council of Europe, The Organization for Economic Cooperation and Development (OECD) has been dealing with cross-border cooperation on a regional level since the seventies. The OECD has mainly been concerned with the problem of pollution in the border regions. As a result, the OECD council issued the "Recommendation of the Council for Strengthening International Cooperation on Environmental Protection in Frontier Regions" in 1978 (cf. Speiser, 1993: p. 83). Furthermore, various declarations were also passed within the framework of the Conference for Security and Cooperation in Europe (CSCE) in which regiona-

lism and cross-border cooperation were accredited significant importance in the protection of minorities (cf. Speiser, 1983: p. 84).

There were no decisive incentives for cross-border cooperation from the European Community for many years. The EU Commission proposed the elaboration of so-called "cross-border regional development programs" as early as the middle of the seventies (cf. Friedrich-Ebert-Stiftung, 1992: p. 13) and issued the "Recommendation concerning cross-border coordination in the sector of regional development" in 1981. The European parliament passed the "Community Charta of Regions" in 1988, in which (besides a legal definition of regions) the promotion of cross-border cooperation was postulated, especially on the regional level (cf. Speiser, 1993: p. 80). However, a set of instruments for border regions was only developed within the framework of the reorganization of European regional policy with the INTERREG program in 1990, which substantially stimulated the cooperation efforts of border regions with the allocation of substantial sponsorship money (cf. von Malchus, 1991; EU Commission, 1993).

As a common initiative for the border areas of the community, INTERREG has two objectives: the integration of the internal community is to be promoted and the isolation of the areas at the external community borders is to be reduced. The initiative applies to the border areas classified target areas No. 1 (backward areas), 2 (areas affected by declining industry), and 5b (rural areas with backward development). Additionally, supplementary measures were promoted in all border areas in the form of studies and pilot projects. In 1990 to 1993, 900 million ECU were made available to INTERREG from all three structure funds. Of this sum, 800 million were for the target areas 1, 2 and 5b. Public officials of the member states are responsible for working out the project and program proposals. However, the Commission accords a certain priority to projects that were developed in cooperation with regional and local municipal corporations. The guidelines for operational programs were structured very loosely due to the great differences between the promotion areas, so that the special requirements and features of the border regions could be accommodated. The greatest possible range of actions was to be promoted (cf. Manthey, 1993: p. 34).

In November 1991, the EU Commission also presented an orientation framework for regional policy, "Europe 2000", in which border regions were established as a specific sector for Community interventions (cf. Siebeck, 1993: p. 75). Furthermore, a "Committee of Regions" was decreed in the Maastricht treaty of 1992. This committee is to advise the Commission and Council and consequently increase the

presence and say of regions in Brussels.⁴ The European Community also promoted cross-border information projects by unions and chambers of commerce (cf. Manthey, 1993: p. 37).

Besides the international organizations listed here, the regions provided important incentives for cross-border cooperation through European-wide mergers and events. Above all, the following activities must be cited:

- Because the various regions were of the opinion that regional interests were not sufficiently represented in the "Permanent Conference of Municipalities and Regions of Europe" (CMRE), the "Assembly of the European Regions" (AER) was created in 1985 and the conference "Europe of Regions" in 1989. The various regions wanted to influence the development within the European Community with the help of these two institutions (cf. Mueller, 1994).
- A few European border regions (especially regions along the Rhine) combined to form the Joint Committee of European Border Regions (AEBR) in 1971. This joint committee developed into a "midwife" and driving force of regional cross-border cooperation. In recent years, it established a "Center for Consulting and Information Exchange among the European Border Regions" at the EUREGIO in Groningen. It is charged with carrying out the LACE project (Linkage, Assistance and Co-operation for the European Border Regions) (cf. von Malchus, 1991: p. 250). This pilot project has been co-financed by the European Community since 1990 as a complementary measure to the INTER-REG EC initiative and is primarily meant to provide help in the elaboration of cross-border programs and their practical application, in the development of projects, and in generating contacts. Besides this technical support of the border areas, a database was also established within the LACE project for cross-border cooperation projects. This database systematically records the rich experiences of cross-border cooperation in Europe, and makes them available to the border regions corresponding to their special needs. Among other things, networking is to be promoted among border regions with the help of this database. The AEBR also carries out public relations work in the border regions and directed at national authorities, and supports the border regions in their own public relations work.

⁴ The "Committee of Regions" thus took the place of the "Advisory Council of Regional and Local Municipal Corporations" in the EC Commission, which was created in 1976 (cf. Benz, 1993: p. 334).

It can be seen here that the necessity of cross-border cooperation on the regional level has been recognized for a number of years and has also been rendered into concrete actions and programs. A clear increase of significance of cross-border cooperation can be detected in all of Europe in recent years. It may be assumed that the INTERREG program of the European Community and the related LACE project of the AEBR provided important incentives for this. What significance these programs have for cross-border cooperation in environmental protection still has to be investigated in concrete terms. Given the numerous disparate forms of cross-border cooperation, it appears necessary to attempt to distinguish types of cross-border cooperation.

2.2.2 Types of Cross-border Cooperation

Cross-border cooperation has been the subject of various scholarly investigations for quite some time. The principle objects of investigation were especially the issues of cross-border cooperation in spatial planning as well as questions concerning the legal nature and legality of this cooperation. In more recent discussions, institutional and organization issues have been gaining in significance. Based on the insights of these discussions, various options can be determined about how cooperation can be systemized (cf., for example, Friedrich-Ebert-Stiftung, 1992; Leuenberger, 1992; Speiser, 1993):

- specific topics or policy sectors
- level of cooperation
- legal status of the participants
- legal basis of the cooperation
- organizational form of cooperation
- number of participants

These fundamental dimensions are often linked. The possible features of these dimensions will be presented briefly below and topics and the theses and insights of the scholarly discussion with respect to the "effectiveness" of various forms of cooperation will be listed.

An initial systematization of cross-border cooperation can be done according to topics or policy sectors, whereby such distinctions can be made with different degrees of complexity. In the political theory of international relations, there is a distinction between "low politics", such as trade and environmental policy, and "high politics", security and territorial policy. It is assumed that there are more

common interests or that integration can be achieved more easily in the sector of low politics than in high politics. There is also hope that spill-over effects are created from a (successful) sector of cooperation to other sectors (cf. Mueller, 1993: pp. 10-11). In political science research about the relationship between cities and their surrounding areas, it has been determined that voluntary agreements can be achieved more easily in purely technical, sectoral (infrastructure) policies than in such things as territorial or revenue sharing issues (cf. Vorholz cited in Vaeth, 1985: p. 141).

In the center of this study are cooperation carried out in a regional cross-border area. The people and actions involved in this regional sector can be found at various governmental levels. Consequently, the following forms of cooperation that can affect cross-border regions can be distinguished:

- inter-local or inter-communal
- interregional or sub-national governmental levels
- international (two or more countries)
- regional⁵ or continental (e.g., within the framework of the EU or specific associations such as the treaty concerning the protection of the Mediterranean)
- global (e.g., within the framework of the UN)⁶

The level of nation states has been mostly involved in concluding treaties dealing with regional cross-border cooperation up till now. The reason for this is that the central government has the primary rights to represent the country to external parties in all modern nation states (specifically the Ministry for Foreign Affairs). This constitutional centralization of foreign contacts is often depicted as an obstacle to adequate handling of the problems of cross-border cooperation (cf. the articles in the Basler Zeitung concerning the summit conference of the heads of state from France, Germany and Switzerland in Basel in December 1989).

Another form of systematization is possible when cross-border cooperation is classified according to the legal status of the participants. The following forms of cooperation are distinguished:

- societal actors (people, companies, associations, etc.)

⁵ In the field of international relations, the term "region" is used in the sense of a global region, such as Central America or Central Europe. Consequently it denotes a level above that of nation states. However, this study uses the term to denote a level below that of nation states but above communities.

⁶ This systematization is directed principally at public (governmental) participants and representatives of cooperation. However, it would also be possible to differentiate private cooperation initiatives according to which level is involved.

- para-governmental or semi-public bodies (universities, public transport companies, chambers of commerce, etc.)
- local authorities (communities, community associations, districts)
- governmental representatives (national or federal governments, states, cantons, counties and regions with their respective administrative sections)

There are usually cooperative relationships between all of the above in cross-border regions (cf. Leuenberger, 1992; Kopf, 1992: p. 87). However, if the individual institutions involved in the cooperation with a border region are the considered, it becomes clear that the correspondence resp. the similarity of the representatives is usually a paramount factor, i.e., there are hardly any non-governmental participants in governmental cooperation. Interconnections between the various institutions involved in cooperation usually take place via personal contacts or within the framework of expert or advisory committees. It may be assumed in the environmental protection sector that cooperation between national governments is currently of uppermost significance. The reason for this is that the centralized authority to set standards is on this level. Making laws and setting standards is currently considered the pivotal environmental policy instruments. However, the more environmental protection is not effected by regulatory instruments, the more significant can be the role of the other participants in cross-border cooperation.

More detailed distinctions appear pressing for the governmental and communal representatives of cross-border cooperation. We can distinguish between the representatives of the executive branch (government and administration) and those of the legislative branch (parliaments and councils). As a rule, cooperative structures are the responsibility of executive branches, i.e., government members or representatives of the administration usually dominate cooperation structures. In this context, political science assumes that this simplifies the chances to reach agreements in cooperation processes. However, this dominance of the executive branch has negative consequences for the transparency and openness of the political process (cf. Benz/ Scharpf/ Zintl, 1992).

Cross-border cooperation can also be systemized according to the basic legal foundation or respective organization form. According to Speiser (1993: p. 229), four theoretical legal forms can be distinguished on the regional level:

- private law
- public law
- system of laws sui generis

- international law as proper law

Private law has been the only possible legal basis for non-governmental or non-communal participants until now. Municipal corporations have also had the possibility to institutionalize cross-border cooperation on the basis of public law for the past few years. This is above all the case when communities are especially allocated the authority to found joint boards in bilateral treaties (e.g., between the Benelux countries or between Holland and Germany). The two last mentioned legal forms are being increasingly discussed in legal literature, but are still controversial and not "mature" contextually.

The organization form can also be employed as a systematization criterium, which is closely related to the respective legal form of the cross-border cooperation. The following can be distinguished:

- informal or legally non-binding (meetings for information, consultation and cooperation)
- contractual (binding cooperation for individual concrete factual issues and projects)
- institutional (for complex and long-term cooperation)

Another method of systematization would be feasible using the number of participants, whereby there must be a distinction between bilateral and multilateral cooperation. The extent to which further distinctions are useful (e.g., trilateral: small number versus large number) remains open to discussion. Such systematization is based on the insights gained in psychological research in groups, which demonstrates that a difference between small and large groups can be detected with respect to common activities. The extent to which this is significant for institutions of cross-border cooperation should be the object of further study. However, it is obvious that complexity increases given an increasing number of participants, and consequently the preconditions required for common actions increase. Minimizing the number of required participants thus can be considered a successful rule of thumb, whereby attracting more participants or repositioning a discussion into an arena with more participants can certainly make sense as a strategy for overcoming bogged-down situations (cf. Fuerst et al., 1990).

This list of types are taken from publications about cross-border cooperation and are principally outlined in this study to describe regional cross-border cooperation. However, the basic dimension of the classification into types can also be considered as the first attempt to generate variables influencing successful cross-border cooperation.

2.3 Motives for Cross-Border Cooperation in Environmental Protection

The reasons or motives for environmental cooperation in border regions will be analyzed in this chapter. Cross-border cooperation in sectors relevant to the environment springs from different motivation factors, whereby there can be several reasons in each case:

- **Cooperation due to ecological interrelations**

Common ground water reserves or cross-border air pollution are classical situations in which there is ecological interdependence between subregions. All types of cross-border environmental problems as listed in Chapter 2.1.1 belong to this category of causes for cross-border cooperation. From an ecological viewpoint, this is the "actual" reason to cooperate across national borders.

- **Cooperation due to economic interrelations**

Different ecological regulations and standards could hinder a more intensive economic exchanged. Subregional environmental policy efforts can be termed "non-tariff trade obstacles" and consequently be blocked. Environmental policy cooperation and coordination (in the form of making standards "analogous" or "mutual recognition" of them) is especially important for border regions, even when such coordination of environmental policies is not under their jurisdiction.

- **Cooperation due to social interrelations**

Completely different evaluations of environmental problems in various countries often result in absurdly unequal treatment in border regions. The best example for this is the reaction to the accident at the Chernobyl nuclear power plant, when the vegetables on the German island of Reichenau in Lake Constance were ordered destroyed but those in Switzerland one kilometer away were not. The radioactive fallout apparently stopped at France's border (i.e., it was not discussed as a problem there). In border regions where there is social contact and mutual awareness of one another, extreme differences in treating

environmental problems can lead to insecurity and problems of legitimacy. The result is a desire to make environmental policy similar in the different countries.

- **Cooperation to increase the effectiveness and efficiency of measures**

Technically complicated and expensive facilities are often required for environmental measures that can be classified as end-of-pipe strategies (e.g., sewage treatment plants or waste disposal treatment facilities). Due to the geographical situation, cooperation often provides better results or allows sharing the costs. Other factors in this sector are the "line-shaped" infrastructure facilities (e.g., traffic routes, power lines) that cross borders. Cooperation and coordination can increase both ecological and economic effectiveness (degree of achieving objective) and efficiency (cost-benefits relationship).

- **Cooperation due to similar problems**

There are often similar but not common (in the sense of ecological interrelationships) problems in subregions, such as traffic spill-overs in city centers and environmental damage due to intensive farming. Environmental policy innovations can be spread through exchange of conceptions (which seems to present itself in border regions due to their spatial proximity to one another) to solve problems. An especially impressive example is the environmental protection ticket for public transportation, that was introduced in northwestern Switzerland, copied by Freiburg, Germany, and has since found resonance in all of Germany.

2.4 Structural Pattern of Cross-Border Cooperation

It can be concluded that cross-border cooperation in environmental protection can take on multifaceted forms and usually involves a high degree of complexity. The high degree of complexity is a result of the great number of (potential) participants and the variety of possible types of motivation, constellation, and interaction.

The spheres of action of cross-border cooperation in environmental protection are at the interface of the still "young" policy spheres of "environmental protection" and a "Europe of regions". Consequently these spheres of action are still structured in a rather loose fashion and the participants only have relatively loose contacts (e.g., in comparison with the policy sphere of "tariff policy").

Consequently regional cross-border cooperation in environmental protection) can be described as a network. Kenis and Schneider (1991: p. 25) define the term "network" as "the new paradigm for the architecture of complexity". Networks are structural formations of social systems, that have been established in the ideal concepts of hierarchy and market. Mayntz (1993: p. 44) terms the extent of linkage between network components as the criterium for making distinctions. He characterizes networks as having loose linkages, while markets are characterized by the non-existence of structural linkages and hierarchies by fixed linkages. According to Mayntz, networks stand out due to their great number of autonomous actions and their ability to pursue selected objectives through coordinated action.

According to Benz (1993: p. 169), formal rules and resource dependency play a smaller role for the development of networks than do the intensity of the communication, information exchange and mutual trust. He points out that "networks are neither a specific form of structure (e.g., non-hierarchical) nor can they be defined by a specific mode of governance (e.g., negotiation), but are rather relatively stable patterns of interactive actors, which combine different combine different coordination mechanisms and different structural features" (Benz, 1993: p. 172).

Although the network approach in political science was primarily developed with respect to the interaction between nation and economy (cf. Pappi, 1993: p. 90), it also seems suited to describing and analyzing the structural and procedural aspects of cross-border cooperation. This is because the listed indicators for a network all seem to be present here: a number of institutionalized participants (organizations) work together (i.e., not necessarily cooperative) with respect to the solution of an environmental problem. These participants are only loosely linked to one another, but this linkage has multifaceted aspects. While cross-border efforts at coordination are characterized as non-hierarchical systems of action, the political field of networks also contains hierarchical relationships (e.g., between national government and communities, legal decisions) and even market constellations (e.g., the competition between environmentally relevant companies and

the competition of subregions to attract companies). Governmental commissions are mainly the focal point in the analysis of cross-border cooperation in environmental protection, so that the knowledge gained supplies central reference points about horizontal political interrelationships. However, at the same time it must be taken into account that other participants are also involved and consequently the structural pattern of the political field must be termed a network.

The linkages in this network are very weak in a legal sense and often only informal. The extent to which the pivotal factors cited by Benz are present for a functioning network (communication, trust) must be investigated empirically in the individual regions and in case studies. Perhaps it would be better to speak of networks that are being formed in the sector of regional cross-border cooperation, whereby existing networks make new linkages in the subregions through cross-border cooperation and thus create new "nodes" (coalitions, incentive suppliers and decision centers). Overall the question is posed as to what extent the present structural and procedural features of cross-border networks promote successful environmental protection.

3 Approaches to Analyzing Environmental Policy

There have been political science investigations into environmental policy for about two decades. They produced a few solid "approaches to the theory of environmental policy" (Prittwitz, 1990) at the beginning of the nineties, that can be used in the analysis of regional cross-border cooperation in environmental protection. Especially the *criteria* developed by Prittwitz (1990) for the profoundness and extent of effects of environmental protection measures seem extremely meaningful for evaluating the quality and consequently the success of environmental policy. The *stage model of environmental policy* can be used in this study as the pivotal evaluation criterium for the "success" of cross-border cooperation in environmental protection, and consequently is the first item in the next section. This is followed by another aspect that can be used to describe environmental policy, the *types of instruments* used in environmental protection. Section 3.1.3 describes the *participants* with their interests, and in section 3.1.4 the "problem solving capacities" and "openness of the political system" will be dealt with (considered pivotal in environmental policy analysis). The *stage model of the political process* discussed in section 3.1.5 also has several functions in this study. Besides the structured illustration of the facts, it serves to evaluate environmental policy success ("how far has the environmental policy cooperation progressed?") and also to generate potential factors of influence (in connection with the participating groups).

In addition to these categories of environmental policy analysis, this chapter briefly discusses the insights concerning the horizontal and vertical dimensions of environmental policy. Cross-border cooperation has been a focal point of investigations with respect to theories of international environmental policy for a number of years. Starting from these theoretical approaches of international environmental policy, potential factors of influence and their effects can also be applied to regional cross-border environmental policy. At the end of this chapter, the "correct" level for successful environmental policy is "touched upon" to derive theoretical criteria for determining which levels of the political-administrative system are to be delegated the responsibility to solve problems concerning environmentally relevant activities in border regions.

3.1 Categories of Environmental Policy Analysis

3.1.1 Stage Model of Environmental Policy

Environmental policy can be differentiated according to the profoundness and extent of its effects. The term *profoundness of effects* refers to the dimension of penetration of environmental policy and provides a degree of measurement for the profoundness of intervention in existing economic or societal structures and events. Environmental policy can do without intervention for the most part, e.g., as compensatory environmental policy, on one hand, but on the other hand it can also affect end-of-pipe production processes or even touch the basis of the economic and societal system. Using the term *extent of effects*, it can be determined how many (problem) sectors are affected by the instruments of an environmental policy measure. There is a distinction here between instruments with a very large extent of effects involving many sectors (e.g., an energy tax) and those that only have a slight extent of effects (e.g., a regulation concerning the use of reusable dishes at food stands). The essential realization is that measures and strategies with slight profundity and extent of effects have a tendency to result in shifting the problem but not in solving it (e.g., catalytic muffler, by-pass roads, sewage treatment facilities).

Political science has developed various stage models for the analyses of environmental policy in recent years, that differ with respect to their degrees of differentiation (cf. Weale, 1992; OECD, 1992; Prittwitz, 1990; Jaenicke, 1986; Jaenicke et al., 1992). For the objectives of this study, it is sufficient to distinguish between the following six dimensions of profundity, that correspond to different environmental policy models. Profundity and extent of effects increase from step to step.

- **Symptom Confrontation**

This starts with symptoms of damages and attempts to compensate for or clean up environmental damage that has already occurred. The proclaiming of compensation areas, cleaning up contaminated sites, and the spreading of lime on forest floors to fight their dying ("Waldsterben") are examples of this type. Environmental policy is additive and does not require any behavior changes at the source of pollution.

- **Distribution of Spill-overs**

This type attempts to limit local or regional environmental problems by distributing them over space or time. The policies of high smokestacks or by-pass roads belong to the distribution type of environmental policy. The water and air quality policy of the seventies can also be considered a large-area shifting of problems (cf. Haigh, 1984; Prittwitz, 1984). Relatively good local quality values can often only be attained because the prevailing wind direction or water flows exported a large part of the pollutants to other regions. The concentration of environmentally-damaging and high risk industries along national borders is another form of distribution-oriented environmental policy (cf. Zellentin, 1987). Environmental policy is also additive, but at least it attempts to avoid local or regional hot spots of environmental damage.

- **End-of-Pipe Technology**

This type of technical disposal (also termed "end-of-pipe environmental protection") conforms to the traditional understanding of environmental protection. Pollutants are filtered out of stationary or mobile facilities. The filtering of sulphur from chimneys, sewage treatment facilities and the catalytic muffler are examples of end-of-pipe environmental protection. This can result in new types of problems, especially the increase of hazardous waste.

- **Integrated Environmental Protection**

This type combines rationalization investments with environmental protection. The use of energy and raw materials is decreased by the minimizing of conversion losses. This simultaneously reduces the waste resulting from conversion losses (f. Georgescu-Roegen, 1971). Integrated agriculture that optimizes pesticide and fertilizer use, energy-saving investments, technologies employing low levels of consumption, and company-internal recycling systems for solvents all belong to this type. This integrated environmental protection requires operational reorganization measures and consequently cannot be taken care of simply by adding them on.

- **Ecological Structural Policy**

This type requires an inter- and intra-sectoral structural change in the direction of technical systems that are relatively compatible with the environment (cf. Jaenicke, 1993; p. 19). Forms of inter-sectorial structural change include the demise of branches using large amounts of raw material (such as heavy industry) and the growth of the service sector. Infra-sectoral change refers to alternatives that are more environmentally compatible than existing technological systems, often termed ecological restructuring. The promotion of environmentally-compatible transport, the retreat from nuclear power and promotion of regenerative energy sources, ecological agriculture, and the avoidance of the production of waste materials belong to this development and policy type.

- **Ecological Prosperity Model**

This type of environmental policy extends beyond the previously cited approaches. It contains profound cultural dimensions, a change of lifestyles and cultural forms, a general reduction in the consumption of consumer goods, the "avoidance" of the occurrence of activities damaging to the environment, and extends all the way to growth-reducing activities. The prosperity, consumption and growth criticism was and is a pivotal topic for parts of the ecological movement (cf. Brand, 1982, 1985; Rolke, 1987; Guggenberger, 1980; Roth/ Rucht, 1987).

This stages of environmental policy listed here correspond closely to different stages in environmental policy history. The fifties and sixties were mostly marked by symptom confrontation. In the seventies, we can see a transition from primarily distribution-oriented environmental policy to end-of-pipe policy. The eighties are the high point of end-of-pipe environmental policy. Since the end of the eighties, components of integrated environmental protection and ecological structural policy can be increasingly seen (cf. Weale, 1992; OECD, 1992). It is assumed that the nineties will be characterized by the debate about ecologically-oriented structural policy (cf. Hey, 1994). The EU environmental action programs delineate this development very clearly. The first two environmental action programs emphasize environmental policy directed at limits for damage and quality, the third environmental action program emphasizes end-of-pipe environmental protection, the fourth integrated protection, and the fifth (passed in 1992) features the first components of an ecologically-oriented structural policy (cf. Kraemer, 1992; Bongaerts, 1989; EU Commission, 1992k; Hey, 1994).

The classification of the planned, passed and applied measures in this stage model will have pivotal significance in evaluating the success of regional cross-border cooperation.

3.1.2 Environmental Policy Instruments

The political success of various forms of environmental policy is achieved by the use of various instruments, that can be classified according to different criteria.

The differentiation of environmental policy instruments according to the means of control (laws, money, work, knowledge) comes from research into implementation, that referred especially to the environmental sector (cf. Mayntz, 1978). Today it has found widespread use in political science (cf. Koenig/ Dose, 1993; Maeding, 1991: p. 196) and in environmental policy consulting (cf. Blatter, 1991). This distinction seems especially meaningful for the analysis of cross-border environmental policy when it can be assumed that specific political levels have special authority with respect to an environmental policy instrument. For example, legal jurisdiction is mainly located on the national or European level, whereas work is done on the lower levels. With respect to cross-border cooperation, this means that action programs of communally-oriented cooperation tend to put the means of work and knowledge in the foreground, while nationally-oriented cooperation tends to emphasize the abstract control means of laws and money.

Classifying environmental policy instruments according to their means produces the following:

- **Work Performed by the Public Authorities Themselves**

This instrument does not control the behavior of others using specific means, but rather the desired work is done by the public authorities themselves, whereby this work creates specific incentives for others in turn. Examples include important infrastructure facilities made available by public authorities, especially in the sectors of traffic, waste disposal, energy and water.

- **Legal Instruments**

Legal regulations include rules and prohibitions, requirements and maximum values. Legal regulations attempt to force environmentally-compatible behavior using direct governmental dictation of standards. On a regional and communal level, this also includes building codes, zoning ordinances and spatial planning. The legal instruments could also include those that serve to improve self-regulation of societal sub-systems or a "decentralized contextual control" (Wilke, 1987). Procedural regulations are normally included here, which comprise components such as the right to have access to files, environmental impact assessments for projects, plans and programs, and class-action suits. Private law regulations also play a role here (e.g., liability law).

- **Economic Instruments**

This especially denotes fiscal incentives and subventions. Such fiscal incentives attempt to mobilize the personal interests of participants. There can be a distinction between environmental surcharges, environmental taxes, fees, tax-exemptions for environmentally desirable behavior and direct subventions.

- **Knowledge-based Instruments (information, research, public relations work)**

Numerous different activities can be combined here, that range from general information and public supplications (e.g., dangerous levels of ozone, waste disposal schedules), public relations work and campaigns, all the way to the financing of research projects.

Recent study results emphasize that the coordinated application of all instruments is significant for successful environmental policy (Jaenicke/ Weidner, 1994). In the discussion about modernization, a hierarchy of these instruments regarding their "modernity" has been detected (in order presented above; cf. the articles in Zillesen, 1993, but also Etzioni as early as 1975). There is also a call for shifting emphasis to economic, communicative and knowledge-based instruments in communal environmental policy (cf. Wollman, 1990: p. 103; Blatter, 1993: p. 122). The complementing and replacing of work done by public authorities themselves and legal instruments by "modern" instruments can also be considered an evaluation criterium for progressive and successful environmental policy in cross-border environmental protection.

The various instrument can be used respectively for the strategies outlined above with different profundity of effects of the environmental policy action. A matrix can be created by linking these two evaluation dimensions, with which the degree of effectiveness of cross-border cooperation can be evaluated in environmental protection (cf. Table 1). Based on this, an evaluation profile for environmental policy (cross-border) measures can be developed with the dimensions "profundity of effects of the strategies employed" and "progressiveness of the instruments used".

Instruments 6	Task	Legal Means	Finances	Knowledge
Policy model 9				
Symptom confrontation				
Distribution policy				
End-of-pipe technology				
Integrated environmental protection				
Structural ecological instruments				
Ecological prosperity model				

Table 1 Evaluation profile for cross-border measures with the dimensions "profundity of effects of the strategies employed" and "progressiveness of the instruments used"

The profile of cross-border environmental policy for individual regions can then be developed using this matrix, that will make it possible to establish the basis for a comparison of the integration of environmental policy in different regions. Cross-border cooperation with only a slight ecological effect is limited to the upper right

corner, and far-reaching ecological cooperation covers the complete lower half of the table. It may be assumed that with passing time cross-border cooperation will spread from the upper right corner to the other table fields. It can also be assumed that cross-border cooperation in the environmental sector is developing according to a stage model, that gradually progresses from simple measures to measures with an extensive profundity of effects. Which instruments are employed depends decisively on the capacities of the participants in the respective cooperation relationship.

3.1.3 Participants and their Interests in Environmental Policy

As it has already been demonstrated, cross-border cooperation is usually characterized by a multifaceted network of participants, in which public and private participants from different political levels are involved. This situation applies especially to cooperation in the environmental sector. Consequently it seems necessary to develop a basic systematization for the environmental sector of these different participants. The sphere of interests sets the pivotal significance for the endeavors of political participants.⁷

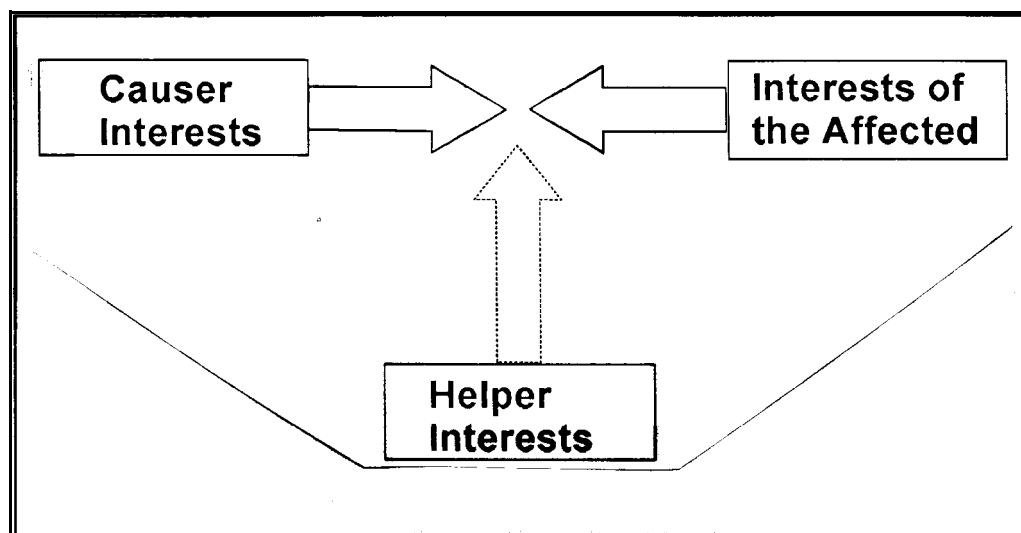


Diagram 2 The environmental policy triangle of interests (source: Prittwitz, 1990: p. 118)

The starting point for making the distinctions according to the sphere of interests is the basic assumption that the environmental foreign policy of a country or region is characterized by the relative importance of three types of interests represented by causers, those affected, and helpers (Prittwitz, 1990: p. 118). Causer interests

⁷ The term "participant" refers to both organizations and individuals in this study.

refer to those participants that profit from environmentally-damaging activities, while those affected feel the blunt of these activities. Helper interests refers to those who develop their own economic or political interest in solving an environmental problem. Economic sectors dependent on a clean environment, such as tourism, or that earn money from environmental protection measures, such as disposal technology, develop strong helper interests. Environmental protection organizations can also have helper interests when it is not only a question of protecting the environment in a campaign, but also a question of their own growth or increased donations.

Interests are not to be equated with participants. The analysis of interests developed in this context has little to do with the assumption of "monistic preferences", because it is largely based on the economic theory of policy. The individual participants (subregions) usually have different and sometimes contradictory interests. In a way, they are in a force field with different distributions of power. When governmental participants are considered (e.g., a canton government), the relationship between the interests of causers, participants affected and helpers can differ from one policy field to another (in Switzerland, for example, causer interests tend to dominate in the water sector, while the interests of those affected tend to dominate in the traffic sector). In international negotiation processes, it may be assumed that there are different interest profiles of the participating countries, that must be coordinated if there is to be cooperation (cf. Prittwitz, 1984, 1988 and 1990).

3.1.4 Problem-solving Capacities and Openness of the Political Process

The term "capacities" is not defined very clearly in environmental policy theory (cf. Jaenicke, 1990; Prittwitz, 1990; Jaenicke, 1993). However, it is considered a key term for explaining environment policy progress. The most radical thesis was drawn up by Prittwitz (1990) in connection with the "catastrophe paradox".⁸ According to him, environmental policy is less a reaction to the objective pressures of problems than the result of increasing capacities to solve problems. Based on Jaenicke (1990), the following factors can be classified as central determinants for the capacity of a society to solve environmental problems:

⁸ It can be observed that it is not the intensity of an environmental problem that explains environmental policy actions and environmental policy consciousness, but rather the existing technical, economic, institutional and financial capacity. The catastrophe paradox denotes the fact that environmental measures are not carried out in reaction to catastrophes, but rather only as a result of existing technical possibilities. In extreme cases, a creeping catastrophe is only included officially in environmental policy when the problem is already being defused thanks to these technical possibilities.

- **economic performance** as the central determinant for ability to make economic innovations and as the basis for governmental income (to institute financial controls)
- **the innovation, strategy and consensus ability** of the political-administrative system. As an important controlling authority of a society, the political-administrative system (PAS) must have both openness regarding new (environmental) problems and stable structures for controls capable of strategy. Delegation of authority to various levels of government is central for the openness of the PAS. Control directed to an environmental policy objective requires fully developed administrative (personnel) and scientific (knowledge) mechanisms as well as progressive environmental law (authority). However, a consensus-oriented political style with corporatistic integration of the most important participants has pivotal importance for putting innovations into practice in a modern society with strong political parties and lobbies.
- **the institutionalizing of environmental interests.** The direct interests of those affected does not suffice for a more profound environmental policy, because only a shifting of problems can be expected due to the so-called "NIMBY syndrome" (not in my back-yard). Institutionalized and professional "environmental protection agents" must also be involved.

In the subregions, the capacity of available facilities should co-determine whether cross-border cooperation can take place at all and to what extent. When the term "capacity" is used to refer individual participants instead of society as a whole, the participants' capacity to solve (environmental) problems is determined especially by the following factors:

- economic and personal resources
- legal and specialist competence
- orientation to environmental goals

If this capacity hypothesis is correct, then it should be expected that cross-border cooperation would be most intensive between participants that have the most capacity. Whether these participants are orientated to environmental issues, however, is open and rather improbable for the institutions of the European regions (cf. the part about motivation and genesis in Chapter 2.2.1).

The necessity of an open political process for ecological innovations is repeatedly pointed out in environmental policy analyses (Jaenicke, 1990 and 1993: p. 26; Weidner, 1989c; Prittwitz, 1990 and 1993: p. 48). An important aspect is access for

environmentally-oriented participants to the political arena. Political realms provide specific structures of opportunities for specific participants. There can be a distinction here between open institutions, in which the mobilization threshold is low for participants, and closed institutions, where it is very high (cf. Kitschelt, 1983: p. 71). The "openness" of political institutions also encompasses other dimensions. These range from participation rights, a system of elections and a political parties (which prevents the ignoring of a topic), rights to raise issues, obtain information and file suits, all the way to a media system capable of responding to topical issues.

These aspects of the openness of a political system are clearly limited in the operative field of "cross-border cooperation". The media have been very oriented to domestic issues, there is no cross-border system of elections and political parties, participation rights only exist incompletely, and cross-border cooperation in environmental protection mainly takes place in the form of administrative networks. Networks are characterized above all by the equal rights of participants and provide structural possibilities to integrate many different participants (cf. Leuenberger, 1992: p. 77). However, the social reality of networks is characterized by the selectivity of the participants.⁹ The central network characteristics of "intensive communication" and "mutual trust" necessitate limiting the number of participants (cf. Scharpf, 1993: p. 66) and require relatively unity. Consequently in the theory of networks advanced by political science, "de-politicized" (i.e., not overlaid with the interests of organizations or with the desire to create a distinctive political image) cooperation in circles of technical experts is considered a pivotal precondition for common actions to solve problems (e.g., Mayntz, 1993: p. 53).

On the whole, there is a striking contradiction between the demands that can be derived from the environmental policy analysis and the demands derived from the network analysis or analysis of horizontal political cooperation (cf. Chapter 4). Consequently special attention will be paid to this aspect in evaluating the empirical examples.

3.1.5 The Political Process of Environmental Policy

It is necessary for the purpose of this study to also investigate environmental policy with respect to its procedural dimension. This necessity is derived from the fact that environmental policy - irrespective of which type of action it corresponds to - can only be effective when it is put into practice. Various implementation

⁹ And it is the proclaimed objective and strength of network analysis to emphasize the selectivity or "interruptions of relationships" in social structures (cf. Pappi, 1993: p. 87).

stages of environmental policy can be distinguished (cf. Prittwitz, 1990: p. 93). In political and administrative science, the model of the policy cycle was developed on the basis of Easton's input-output model. Using this, a procedural differentiation of the individual policy stages can be achieved. The focal point of Easton's input-output model is the (ideal type) assumption that the political-administrative system converts societal demands (inputs) into political actions (outputs) (cf. Prittwitz, 1990: p. 93). Based on this fundamental assumption, the policy cycle was divided into the following stages by Brewer/ de Leon (1983): initiation, estimation, selection, implementation, evaluation, and termination.

Similar types of procedural distinctions have been employed in German research into administration since the beginning of the eighties, because a reduction of the (very often) extremely complicated political process can be achieved using this (especially for empirical purposes) (cf. Mayntz, 1978; Hesse, 1985; Nassmacher, 1991). This also applies especially to the analysis of environmental policy. Based on this reduction of complexity, it seems possible to identify the respective participants with their special interests (such as implementation restrictions and deficits) in the individual implementation stages of environmental policy. Consequently the political fields of action of cross-border cooperation in environmental protection are looked at in general in their various implementation stages below.

The starting point of the policy cycle is the **initiation** stage, in which the necessity to solve a problem is recognized. In the solution of cross-border environmental problems, the initiation stage can be equated with the growth of common awareness in the subregions of the different countries. Becoming aware of an environmental problem can occur with varying intensity and great differences in the subregions. The different viewpoints concerning the necessity to solve an environmental problem can be influenced by different determinants. The different levels of environmental consciousness in different countries seems to be responsible for the specific situation of border regions. On the other hand, the different perceptions of problems can also be strongly linked to the spatial development ideas of the respective regions. This means that when there are strong differences between the spatial utilization goals of individual subregions, there are also great differences in the evaluation of the necessity to solve environmental problems.

This stage of becoming conscious of problems can be distinguished further and a individual groups of participants can be pinpointed. According to Luhmann (1970: p. 14-15) a political process can be generally divided into a kind of "life cycle" with respect to the participants and the temporal development. It is roughly composed of the following (modal) stages:

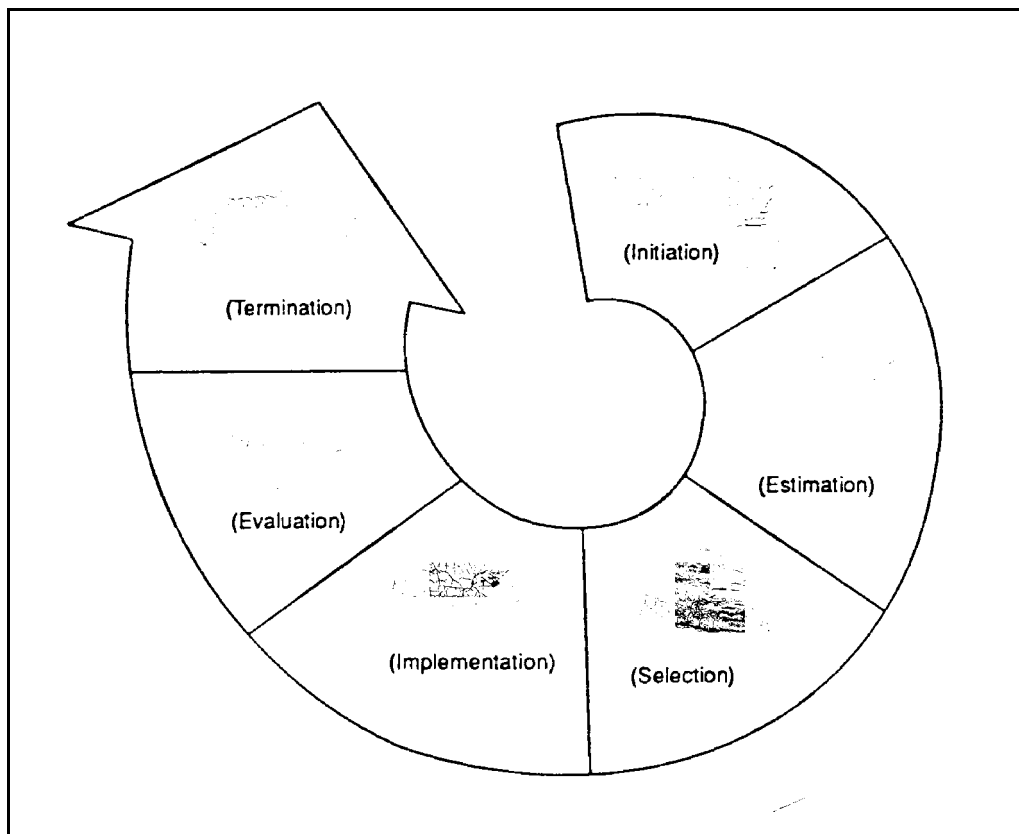


Diagram 3 The Policy Cycle (source: Prittwitz, 1990: p. 95)

- Only a few especially initiated or interested people are aware of a political topic in a first, latent stage, and the catchword is missing to make the topic well-known. With respect to the perception of cross-border environmental problems, various participating groups can be identified in this stage. On one hand there are participants directly affected by an environmental problem, and on the other hand there are participants from the scientific or scholarly field, who can be considered a kind of "early warning system" for recognizing environmental problems due to their research.
- A few of these topics achieve a political breakthrough in a second stage. This occurs when there are participants who focus on the topic, devote much time and energy to it, and thus spread awareness of it. These participants have special interests in doing this, that can be termed helper interests in the sector of environmental policy. This means concretely that a participant who promotes an environmental problem as his political topic does not do it simply because he is personally affected rather for other reasons (e.g., power or financial interests).

- In a third stage, the topic is taken on by politicians, who make politics with changing topics. A topic can very easily be suppressed by politicians or switched to a "side track" of public debate in this stage. The topic requires further support of the participants from the second stage to prevent this. In the sector of cross-border cooperation in environmental policy, this means that the dominating participants of this cooperation pursue helper interests. The interests of those affected as well as the causer interests are limited at this point.

Overall the process of perceiving a cross-border environmental problem can be considered as a process of increasing consciousness and putting the environmental problem into concrete terms, and involving different participants with different areas of interests. It can be assumed that some of these participants also pursue other interests than the solution of a cross-border environmental problem.

If a cross-border environmental problem is seen as requiring a solution in the respective subregions of the nation states, participants in the political field make preliminary appraisals of the various alternatives for solving it in a second stage. This second stage of the policy cycle is termed **estimation** by Brewer/ de Leon. The focal point of this stage is the cataloging of various alternatives for actions that could contribute to solving the environmental problem. At the same time, the cost-benefit ratio of these alternatives for actions are evaluated by various participants. This evaluation can be done in very different ways both by the different subregions and by the different participants within a subregion. It can be very strongly influenced by the degree of environmental consciousness of the respective participants and the spatial utilization requirements.

The public administration is a decisive participant in the preliminary selection of alternatives for action (it also generally has a dominating role in interrelated negotiation systems) Alternatives for solving environmental problems are often first formulated and their cost-benefits ratio evaluated within the public administration. Given the complexity of environmental problems, the administrative systems subcontract part of the work for formulating and evaluation action programs to public and private research institutes to supply reports and make investigations. This opening of the administrative system to knowledge systems seems necessary, because the public administration simply does not have the required specialist knowledge to deal with the complex problems in the environmental sector and usually does not have the capacity to do it either. The special role of the administrative system in making preliminary evaluations of alternatives for action in cross-border cooperation lies in the fact that this system usually encompasses the institutions where cross-border consensus-oriented negotiating systems can take place.

The results of these preliminary evaluations of alternatives for action are the basis for the stage of creating programs, which is termed the **selection** stage in the policy cycle. Binding decisions about the concrete execution of action programs for solving cross-border environmental problems are made. This presupposes that the individual participants who are involved in the cross-border cooperation have the authority to make decisions and the necessary capacity to implement action programs. This situation results in expanding the circle of participants in cross-border cooperation. Besides the public administration, the political system is involved here because it usually has the necessary authority to make decisions. The same applies to the participation of the (national) state level, because the regional levels usually do not have the necessary authority or capacity. It can be assumed that the individual participants in this state are primarily helper interests, and that participants concretely affected or with causer interests are only involved in creating programs in a limited way.

The formulation of the environmental policy objectives and especially the making available of various control instruments is strongly influenced by the respective governmental framework conditions of environmental policy. The respective national environmental law can be of decisive importance, whereby the compatibility of the individual environmental standards between the individual nation states is in the foreground. The issue is posed here of to what extent the concrete cross-border cooperation in the environmental sector is made easier by the harmonization of the standards by the European Union. With respect to environmental standards, it is important which governmental level has the legal authority for individual environmental standards and whether there is incompatibility here between the subregions in the different countries. The question is also posed here whether possible incompatibilities of legal authority have negative effects on the cross-border cooperation in the environmental sector. It is also important to consider the possibilities of participants in a subregion to influence decision processes in other subregions, which can possibly result in cross-border environmental damage, and to what extent these are legally standardized. Overall these legal framework conditions can play an important role in the formulation of political action programs for solving cross-border environmental problems.

The decision process in creating programs for cross-border cooperation is influenced by numerous different determinants, that will be examined in detail in Chapter 4. Due to the strong presence of negotiation systems in cross-border cooperation, it can already be assumed that decision processes in creating programs are structured with a strong consensus orientation, and tend to avoid conflicts through minimizing consensus needs, postponing the conflict, or by not attempting to solve controversial problems.

In a fourth stage, there is concrete implementation of action programs to help solve cross-border environmental problems. This stage of the policy cycle is termed **implementation** and should be the practical application of political decisions. However, it usually does not proceed clearly and simply in such a way that political decisions generate a clearly formulated job which is executed semi-automatically and faithfully by participants delegated to do it (cf. Windoff-Heritiér, 1987: p. 212). Rather the implementation stage must be seen in a close relationship with the formulation stage. The reason is that the program formulation also sets which instruments for carrying out the political objective are to be made available to the action program. At the same time, the implementation of the program is also contingent on how concrete the objectives of the action program are and to what extent these objectives can be achieved in concrete operations.

It can be assumed that besides the national state framework conditions of environmental policy, implementation is strongly influenced by the resources available. Which resources are available for an environmental program is in turn dependent on political decisions about the action program as well as on the capacity existing in the respective subregions and nation states. However, the necessity of having capacity for solving environmental problems is not a specific feature of cross-border environmental policy. Very different capacity in the individual nation states can result in the lack of or unsuitable implementation of environmental programs. Consequently the capacity of subregions is also important for the interpretation of cross-border cooperation in the environmental sector.

It is also important here to consider on which political level the action programs have been passed and on which political level the individual action programs are to be implemented concretely. It can be determined for the environmental policy sector in general that numerous political programs are passed by a higher level, that then must be implemented on communal and regional levels. This divergence between the decision and implementation has resulted in decision processes in the environmental sector being generally termed "multi-level interrelationships". Consequently they are characterized by specific negotiating processes.

When a cross-border environmental program is implemented, it can be assumed that the public administration is strongly involved. Contrary to the program formulation stage, in which the administrative system of the (national) state levels have a dominating role, the administrative systems of the regional and communal levels increase in importance. However, the availability of capacity is limited on these lower levels, because the delegation of the implementation of central governmental action programs to these levels does not only take place in the environmental sector. At the same time, the capacity to implement environmental programs is also limited by the specific individual interests of the communal and regional levels. The

limited capacity on these practical operative levels can also result in a lack of or unsuitable implementation of action programs. As a consequence, this can result in operative or control deficits in solving cross-border environmental problems.

With help of the distinctions made here about cross-border cooperation in the environmental sector in the individual stages of the policy cycle, it now seems possible to reduce the high degree of complexity of this cooperation process. At the same time, the participants in this process can be classified according to their initial involvement in the political arena and can be identified according to their basic interests. Against the background of the theoretical consideration of the individual stages of the policy cycle, a few factors can be identified that can result in problem-solving deficits in cross-border cooperation in the environmental sector. This theoretical consideration especially pointed out the significance of the capacity facilities and the respective national state framework conditions for successful cross-border cooperation in the environmental sector.

3.2 Dimensions of Environmental Policy

Cross-border environmental policy is a political field of action in which there are many participants from different subregions and different political levels. Thus horizontal and vertical political coordination is required for successful environmental protection in border regions. The interests of the participants are primarily important in the analysis of the preconditions for successful political cooperation. There are already analytical models and insights concerning this in the research of international environmental policy. These will be described below. At the same time, there is also cross-border cooperation in the area of conflict between different vertical levels: communities and joint boards compete for authority and resources with federal states or cantons, and these compete in turn with central governments or the EU. Consequently, in addition to the horizontal interest constellations, the vertical ones must be investigated too. In the vertical dimension of environmental policy, the "correct" level of environmental policy should be discussed in addition to the development of analytical categories, because another evaluation instrument for environmental policy efforts and results in border regions can be deduced from it.

Because the insights of investigations into international environmental policy describe the interface between Chapter 3 (environmental policy) and Chapter 4

(horizontal political cooperation), this section appears at the end and the problem of levels is discussed next.

3.2.1 The Discussion of appropriate administrative Levels in Environmental Policy

The question concerning the suitable level for acting in environmental policy has become a key issue of European integration. The "subsidiarity principle" has been evaluated very differently in political debates over the last few years (cf. Hey, 1994; Mueller-Brandeck-Bocquet, 1991). The operative level "suitable to the problems" can be deduce from general principles on one hand, and on the other hand it can be also derived "inductively" and thus "situation-specific" from the concrete constellations of interests of the participants. Although the attempt to employ a deductive method provides many interesting results, it does not allow a general determination of the operative levels suitable to the problems. Consequently it seems necessary to deduce the suitable operative level from concrete constellations of problems and interests. The suitable operative level is the level on which there is a combination of strong mutual interest in solving a problem and capacities to act. When the interest in solving the problem is on the lower political levels but the capacity to act on the upper ones, this favors a decentralization of authority and capacity. When the interest in solving the problem is on the upper level or causer interests dominate on the lower levels, then maintaining centralized structures can make sense for environmental policy.

The difficulty to deduce the operative level suitable for solving problems from general principles can be made clear using the example of the debate about the subsidiarity principle. This is mentioned twice in the Maastricht Treaty: Art. 3b and Art. 130s. Art 3b emphasizes that the community can only be active within the framework of the authority delegated it. It may only become active in policy sectors with competing responsibility "insofar as the objectives considered cannot be achieved sufficiently on the level of the member countries, and consequently can be better achieved on the community level due to their scope or effect." Consequently community policy must be put to a comparative effectiveness and efficiency test. But the formulation assumes a harmony of objectives between the different levels, whereby there only seems to be a technical question of what measures and what levels are best employed to achieve this target. If "subsidiarity" were only a technical question, it would not have achieved such a position of importance in political discussions of recent years (cf. Jachtenfuchs, 1992). The technical term "subsidiarity" actually veils the basic differences in the objectives and priorities of the member states, for the solution of which there is no definable operative level.

The formula based in the EU treaty is often considered a license for further centralization, because it sets rather low hurdles for it. The German federal states have especially repeatedly called for an essentially restrictive interpretation of the community's authority (cf. Mueller-Brandeck-Bocquet, 1991: p. 20). In the Declaration of Munich (1987) about the political union, the hurdle for centralization was set even higher: "The EU is only to take on new responsibilities when their fulfillment on the European level ... is indispensable..." (cited in Knemeyer, 1990: p. 450). A formulation using almost exactly the same words was passed at the Conference of Europe of Regions two years later. For a long time there was fear that the "subsidiarity principle" would be used as a loophole for transferring an increasing amount of authority to Brussels. On the other hand, the term has become more of a synonym for the re-nationalization of environmental policy since 1992 (cf. Hey, 1994). The EU was confronted with substantial pressure to justify European-wide measures in environmental policy.

These introductory observations make it clear that the "subsidiarity" formula, that seems so convincing at first, is difficult to define in a way that all would agree to.

There are few generally accepted arguments for centralization or decentralization of authority. A few attempts to account for this will be considered below, including:

- the requirements of a single market
- the spatial dimension of the environmental problem
- the allocation of suitable operative levels to the environmental model
- the type of environmental policy instrument
- a distribution of authority according to the stages of the political process and theoretical criteria of control (cf. Hey, 1992)

1. The opinion held by the EU Commission in the 4th Environmental Action Program (Abl C 70 of 18 March 1987) concerning the necessity of a wide-reaching harmonization of environmental standards for reasons of **completion of the single market** is questioned in published materials (cf. Task Force, 1989; Schneider/ Sprenger, 1990; Sprenger, 1991; Weinstock, 1983; Siebert, 1989). The widespread argument for a European harmonization of environmental standards is the prevention of non-tariff trade barriers and competitive disadvantages caused by different costs related to environmental protection. Schneider/ Sprenger (1990; p. 31) argue correctly that environmentally-related costs will differ even if there is total harmonization, because individual companies have different cost functions. Consequently, there is a certain tolerance level from an economic viewpoint, within which different environmental standards result in neither relocating companies nor competitive disadvantages worth mentioning. If we shift from a static perspective

to a dynamic one, different environmental protection standards cause short-term disadvantages but become technology and rationalization advantages in the mid-term (cf. Hey/ Jahns-Boehm, 1989: p. 159-160; Sprenger, 1992; Schneider/ Sprenger, 1990: p. 31-32). With respect to product-related environmental protection, although the harmonization of standards is necessary to prevent trade barriers, the priority of environmental protection over the single market is increasingly being recognized from an ecological viewpoint.¹⁰ Centralization of environmental authority on a European level cannot be based on the perspective of a single market. At most it can be the basis for a minimum framework, that moves up the tolerance levels of national or regional environmental measures. Consequently Sprenger (1991: p. 21) urges a "regionalization of the instrument selection". However, this must not be understood in the sense of a "complete decentralization" of environmental policy under the rule of a free and open market (cf. Siebert; 1989). The decentralization of environmental standards is based on the "competition of standards" or the setting of standards. This would not necessarily result in a reduction of standards in the pace-setting countries, because it can be assumed that the willingness to pay for more environmental protection is greater in the pace-setting countries than in the latecomers. However, a decentralization of environmental standards can very easily result in the so-called prisoners' dilemma situation: pointing out the competitors, a country neglects the further development of its environmental policy, although it would correspond to the wishes of the majority of the population. Other countries with the same preferences do the same. Consequently there are good arguments for cooperation in international and European environmental policy to prevent low environmental standards caused by a competition of standards. But there are only bad arguments for centralization attempts that take away maneuvering room from lower levels. Similar considerations must be raised for environmental policy between units within a country, i.e, between regions and central government and finally between communities and regions. But as Mueller-Brandeck-Bocquet (1993) proves, a unifying tendency can be seen even in German federalism. The German states allow the unifying of environmental policy provided they receive increased rights in making decisions (cf. Scharpf, 1991: p. 418). Over the last few years German states have repeatedly attempted to use the niches remaining to them for making environmental policy standards to make environmental policy dynamic, especially with the strengthening of Social Democratic-Green Party coalitions. (cf. Mueller-Brandeck-Bocquet, 1993: p. 111-112).

¹⁰ Cf. especially the so-called bottle-deposit decision of the European Court; also summarized in: European Parliament, 1992; also the Task Force, 1990, although with restrictions.

2. The second attempt to find a suitable operative level for environmental policy is based on the **type of environmental problem**. If it is a global environmental problem, international negotiations and European minimum requirements can be justified. Cross-border environmental problems are best dealt with by the affected countries or regions. If it is a local and regional problem, it should be dealt with there (cf. Schneider/ Sprenger, 1990). But such limitations for operative levels suitable to solving problems only seems plausible at first. The prevention of a climate catastrophe requires not only an international climate protection regulation, because no viable solution will be found without regional concepts for shifting transport to other modes and preventing it and without a revolution in energy efficiency implemented on a local/ regional level. There is now an international association of climate protection cities, from which more practical and implemented incentives are coming for preventing the greenhouse effect than from the international level. On the other hand, local problems are sometimes only manifested at higher levels, for example, the communal waste-disposal crisis. The communal options for preventing waste (e.g., employing an active product and chemical policy) are limited. Consequently it can be seen that the type of environmental problem does not justify a clear distinction of authority, but that cooperative solutions between the levels are also need more here too (cf. Mueller-Brandeck-Bocquet, 1991 about the difference between cooperation and separation principles). However, there is a lot in favor of strongly decentralized possibilities to act from the viewpoint of the appropriate way of dealing with ecological problems. Winstock (1983) already emphasized that the variety of geography and economic structures in Europe also necessitates a variety of regional political structures. Consolidated quality standards are not appropriate to the problem (not even on a national level). They can lead to an increase of environmental damage in areas not yet endangered and consequently contradict the precautionary principle. On the international level, the philosophy of quality limits has resulted in exporting pollutants to other countries (cf. Prittitz, 1984). For these reasons, Sprenger/ Schneider (1990) also propose setting minimum limits for emissions on a European level that can be raised nationally and locally. We must agree in principle with this opinion, but it is formulated too much within the framework of instruments for end-of-pipe environmental policy, and consequently cannot do justice to the complexity of the control responsibilities for ecological-structural policy.

3. This points out a complex procedure, the deduction of adequate operative levels from the type of **environmental policy model**, or - to put it more precisely - the stage or profundity of effects described above. This can be called a cyclical development of the significance of the different operative levels. The lower level usually suffices for compensating or distributing activities. The framework conditions for end-of-pipe and integrated environmental protection must be on the level

of the market. This means that its minimum framework should at least be European. Within the framework of the structure of ecological policy, the relevant operative levels must be differentiated. The European and international level is gaining in importance, especially in formulating ecological framework conditions that influence the behavior of decentralized participants. Besides an ecological correction of the price system and ecological standards for products, the procedural laws that aid the interests of those affected in confronting the government and the market are especially important (cf. Weidner, 1990; Jaenicke, 1993). False incentive structures for environmental policy and economic participants would be created without such general framework conditions, i.e., ecological behavior would be discouraged. The European level also provides important and necessary impulses to countries where environmental protection still plays a minor role. This can be called a "trickle-down" effect of environmental policy from the countries with a dynamic policy to countries with a less developed one (cf. Rehbinder, 1987; Ruiz-Perez, 1990; Haigh, 1984). These countries import the European environmental policy. This would not occur without strong European institutions.

However, a strengthening of local and regional capacity to act is also imperative to developed concepts adapted to local conditions (cf. Loske, 1990; Hey, 1992). An ecologically-sound solution to transport and commuter problems, the forging of an efficient energy supply, a structural policy for agriculture in tune with the ecology, environmentally compatible utilization and further processing of regional raw materials (in agriculture, forestry and elsewhere), and commercial and residential policies that preserve areas instead of destroying them are only a few examples that make clear the relevance of strong regional and local legal and financial capacity.

Operative levels 6	Community	Region	Nation	Europe
Policy model 9				
Symptom confrontation				
Distribution policy				
End-of-pipe technology				
Integrated environmental protection				
Structural ecological instruments				
Ecological prosperity model				

Table 2 Matrix: adequate political levels for different environmental policy models

The increasing of local and regional capacity is necessary to increase their adaptability to the new market frameworks on one hand, and on the other hand to allow variety and innovation. Especially a structural policy for ecology requires experimental fields prone to error in order to develop new strategies, strategies that are structurally not possible on a national and European level. Many energy and traffic policy innovations in the last few years originated in the communities and not in the upper level. Reasons for this also include the fact that the pressure of problems is greater on a communal level, there are fewer organization problems of those affected and thus the probability is greater that individual and far-reaching ecological concepts are implemented than on a national or international level. There are numerous examples of this in traffic and energy policy.

In **Table 2**, the operative levels adequate for dealing with problems are shaded for the individual levels of the profundity of effects in environmental policy.

4. Another attempt to limit authority is being made using **environmental policy instruments**. There are supposed to be instruments better suited to the European level and others to the lower level. However, as Table 3 makes clear, no clear division of authority can be made here. Most instruments can be used meaningfully on several levels. In no case is the delegation of exclusive authority to the EU justified. Overlapping authority can be observed in most cases.

5. The following division of labor can be imagined for the **intensity of control** and the political process: Standards set by the European level are necessarily general (cf. Kraemer, 1992). They formulate principles, targets, and procedures, but they take concrete form on the lower levels. This also corresponds to the legal status of the guidelines; they have to be first included into national law. This means that it must be sufficiently general to permit further specification on the lower levels. Thus the EU Commission accentuated the term "intensity" of community actions in a communication about the subsidiarity principle (Europe No. 1804 of 30 Oct. 1992) to emphasize that general regulations and targets are to be preferred over detailed regulations. Legal terms such as "best available technology" in the European policy to prevent air pollution correspond to these general standards. Consequently general standards are set on the higher levels and they are made concrete and implemented on the lower ones.

Table 3 Attempt to create a matrix for the operative levels adequate to the problems

Operative level 6	EU		Nation		Communi- ty/ Region
	exclusi- vely	minimum re- quirement	exclusively	minimum re- quirement	
Instrument 9					
Product stan- dard norms/ bans		X	X		
Quality stan- dards for wa- ter, air, etc.		X		X	X
Emission stan- dards		X		X	X
Environmental taxes		X	X		
Environmental levies		X		X	X
Fees				X	X
Compensation solutions				X	X

Operative level 6	EU		Nation		Communi- ty/ Region
Instrument 9	exclusi- vely	minimum re- quirement	exclusively	minimum re- quirement	
Infrastructure measures:					
- of interna- tional signifi- cance		X		X	X
- of national significance				X	X
- of regional significance					X
Spatial plan- ning				X	X
Direct interven- tions in beha- vior (night-dri- ving bans, clo- sing roads)		X		X	X
Environmental liability law		X	X		
Licensing law		X	X		
Access to files		X	X		

Operative level 6	EU		Nation		Communi- ty/ Region
Instrument 9	exclusi- vely	minimum re- quirement	exclusively	minimum re- quirement	
Procedural step					
- Framework conditions		X	X		
- Legally bin- ding implemen- tation				X	X
- Financing		X		X	X
- Practical im- plementation				X	X

The suitable division of labor between the levels can be deduced inductively from specific negotiation constellations between the levels. Whether actions can lead to solutions adequate to problems depends less on abstract criteria than on the institutional, financial and legal capacity and authority that the individual levels bring to the negotiation process and on the interests that they have in the concrete situation. There are constellations in which the lower level tends to represent causer interests (e.g., lax zoning policies for commercial areas, non-selective attempts to attract industries) while the interests of helpers or those affected are represented on higher levels (e.g., extension of the European railway connections or protecting the drinking water supply for population centers). But there are also constellations with the reverse characteristics in which the lower levels are interested in environmental policy measures but to not have any capacity, and the upper levels are not interested. Binswanger/ Wepler (1993: p. 18) stated this conditions as follows:

"In the first case of local benefits and spread damages, the decisions should be shifted to a higher level, in our context to the European level. This provides the opportunity to link the diffuse and spread-out interests for protecting the environment and to make their implementation possible. In the second case of local damages but distributed benefits, it is a question of giving places or regions in danger of suffe-

ring environmental damages a say in making decisions within the framework of national regulations or maintaining those rights if they already exist."

Consequently there is no operative level adequate for dealing with problems that can be defined abstractly. This can only be derived from the analysis of the constellations of interests in a specific problem area and the dynamics of a decision-making process between the different political levels. Stated generally, interests in solving problems and the capacity to act must correspond on one political level. When this congruency does not exist, then the levels with slight resources but strong interests will attempt to integrate the political levels with great capacity into the attempt to solve the problem. When this is unsuccessful, the solution of a cross-border environmental problem is improbable.

3.2.2 Cross-Border Environmental Protection and Theories of International Relations

Theories of international relations investigate the conditions for successful cooperation among other things. They make important statements about interests and motives of national participants and constellations and institutions that favor cooperation.

In the political analysis of international relations, the "realistic school" dominated for a long time. This school analyzed the international relations in a model of an anarchic interaction of strategically acting nation states. Issues such as national security and power dominate the relationship between countries. Cooperation appears improbable, because implementation of agreements is considered dubious, there is a competitive relationship between the individual participants, and agreements are made ineffective by "free-rider" behavior. Cooperation seems improbable given such conditions. The result of this lack of cooperation is an overuse of common goods, and a "tragedy of the commons" becomes probable (cf. Haas, 1990: p. 35-36; Wolf, 1991: p. 29; Zuern, 1992: p. 6-7).

This "realistic pessimism" has been put into question since the beginning of the eighties and the debate about international regimes. This regime theory considers it possible that rational and strategically acting states are capable of creating institutionalized forms of international cooperation due to their own interests. International regimes are topic-related international agreements where common principles are formulated, standards and rules made which the national participants comply with, and in which specific procedures for solving conflicts and further development of cooperation are developed. In the environmental sector, there are such international agreements to protect the oceans, the Antarctic, the

ozone layer and the earth's climate. The analysis of the conditions for cooperation between countries when there is no central authority is an important contribution to the regime theory (cf. Breitmeier et al., 1993: p. 164). Using the regime theory, the development of cooperation, the process of creating regimes, the design of regimes, the control elements of international regimes and consequently their effects on the behavior of national participants can be analyzed and explained (cf. Breitmeier et al., 1993: p.179 et seq.). In the context of the present study, the contributions of the regime theory to the analysis of the conditions for the creation and success of (international) cooperation is above all important.

International regimes are required where there is neither harmony between the participants nor optimal allocation guaranteed through market mechanisms. In the case of harmonic relationships, no formal active coordination is necessary because coordination arises almost on its own. Neither are regimes necessary when market mechanisms function. However, it becomes relevant in those cases where it can be assumed that the market will not produce the desired results (Keohane, 1984: p. 50).¹¹ Such cases are usually depicted as models in situation structures formulated as theoretical games (cf. Zuern, 1992). Numerous reasons can be given for such cooperation oriented to self-interest:

- Preventing international "prisoners' dilemma situations" such as economic uni-laterality, which - when practiced by all - result in loss of income for all
- Failures of markets, that require internationally coordinated cooperation (cf. Keohane, 1984: p. 82)
- Political market failures in the sense of an insufficient allocation of utilization and ownership rights
- Cooperation in obtaining goods that could not be attained without cooperation, for example, information or to reduce transaction costs (cf. Haas, 1990: p. 44)
- Protection of global common goods, whose utilization must be regulated internationally

The most well-know game theory presents the prisoners' dilemma. This denotes a typical situation in which individual and collective rationality collapse and in

¹¹ Examples for "market failures" and the necessity of political interference to correct the market mechanism are:
- external costs
- monopolistic price-setting, dangers of ruinous competition
- failure of the exclusion principle (e.g., for common goods)

which individual calculation results in a worse result than cooperation. The situation can be demonstrated in the following example:

Two criminals are given the alternative of either confessing to their crime or to betray one another. Each one has a better chance when he denies committing the crime and betrays the other. However, if they both do it, they can both expect a severe punishment. The second best solution for both is thus to deny committing the crime. If they could agree on this and trust one another, they would choose this solution. However, without any coordination they will probably choose the first solution and consequently harm one another.

Such prisoners' dilemma situations are widespread in international economic policy. For example, the race to devalue during the first global economic crisis can be seen as a typical prisoners' dilemma situation. The same can be said for the harmonization of European environmental standards: without a minimal harmonization, individual countries do not raise their environmental standards because they fear suffering competitive disadvantages with respect to other countries. Only a successful cooperation process makes all countries free to do that which corresponds to their preferences (cf. Jachtenfuchs et al., 1993: p. 142).

Other typical constellations that are reflected in international relations for self-oriented interests are the war of the sexes, the coward game and the RAMBO game. The "war of the sexes" is a coordination game with a distribution conflict (cf. Zuern, 1992: p. 184-185). The situation can be demonstrated in the following example:

A couple want to do something together one evening, but the man wants to do something different than the woman. Consequently the two have a mixed motivation structure. If they do something together, one of them will not be able to do what he/ she wanted to originally.

Cooperation leads in this constellation to an unequal distribution of benefits. If the two are together longer, the dilemma can be solved by letting the man get what he wants one time and the woman what she wants the other time. Consequently rules and institutions are made that reconcile the unequal distribution of cooperation that takes place only once. Zuern (1992: p. 185) points out correctly that the system of a rotating EU Minister Council President, who sets the central issues of the council meetings, represents a solution made in this kind of distribution dilemma. The country that sets the central issues of the council meetings has the privilege of dealing with its priorities first. Regular repetition of the coordination game is important for the success of such institutionalized solutions. It is a precondition that is often paraphrased as "shadows of the future". The "shadows of the future"

ensure that the participants accept an unfavorable distribution of benefits in the present, because they can assume that they will be compensated for this by a favorable distribution of benefits in the future.

The coward game (cf. Zuern, 1992: p. 332) can also be illustrated using an example.

Young people play a game of courage that entails driving cars directly into one another. Whoever swerves to avoid the crash, loses the game. The coward game is also one with a mixed motivation structure. If neither of the two players gives in and swerves to avoid the crash, they both die. The first one to swerve to avoid the crash is the coward, but he saved both of their lives. Another aspect of the coward game is that whoever gives in once is considered a coward forever.

Contrary to the war of the sexes, the "shadows of the future" have the opposite effect: cooperation is made easier in the war of the sexes and more difficult in the coward game. Coward games entail especially great risks in situations dealing with power and prestige. Coward games are generally considered typical conflict situations in the "realistic" school of international policy. This school considers that whoever cooperates or makes prior concessions is in the weaker position and will have to pay the costs of cooperative behavior alone.

There are basically other structures of interests in RAMBO or BASF games (Zuern, 1992: p. 33). In Rambo games, one participant is interested in cooperation and the other not. Consequently they can be termed games with asymmetrical preference structures. These asymmetrical structures of interest can be illustrated by the often used following example:

BASF is located upriver, a farmer with large holdings downriver. Both pollute the river with their sewage. The one upriver is not interested in treating the sewage before it enters the river, but the one downriver is. Consequently an agreement based on the interests of the two does not seem probable.

Negotiated settlements are not to be excluded for asymmetrical structures of interests either. Such negotiated settlements were already discussed in the framework of the COASE theorem in 1960 (cf. Coase, 1960). Coase and later Scharpf (1992) argued that negotiated settlements are possible here, especially in the sense of compensatory solutions. But such a negotiated settlement would be characterized by the following components, as they can be seen in general in consensus-oriented negotiation systems (cf. Chapter 2.1.4). When a solution to a problem is more efficient than the status quo, then the party that has to pay for the measures can be convinced to cooperate through compensation or bartering. This

condition is called "Kaldor Efficiency". When the benefits for the winner of a measure are greater than the costs for the loser, then the winner can offer the loser a sufficient compensation and still reap advantages from the negotiated settlement. The participation of those situated downriver on the Rhine in preventive measures with respect to salt emissions from French potassium mines in Alsace can be considered a current example of such solutions.¹²

According to Zuern (1992: p. 17-18), a stage model of four basic coordination games can be outlined for asymmetric constellations of interests:

- coordination games without distribution conflicts (e.g., nuclear deterrence)
- coordination games with distribution conflicts (e.g., different distribution of benefits of the cooperation - the war of the sexes)
- dilemma games, such as the prisoners' dilemma or the coward game
- Rambo games, where only one partner is interested in cooperating

Numerous examples for these four different coordination games can be found in cross-border cooperation. For example, a coordination game without distribution conflicts could be the improvement of disaster prevention through networking of existing notification and alarm systems in a border region. The networking improves the disaster prevention with a relatively balanced distribution of costs. A typical example of a coordination game with distribution conflicts is the creation of a cross-border institution involving the construction of infrastructure facilities financed across borders. The distribution conflict arises when all agree in principle about the necessity to establish the institution or infrastructure facility. For example, if an environmental research institute is to be created, then the subregion where the institute is located reaps special advantages. Concrete action projects can also fail because of such distribution conflicts, such as the locating of Basel, Switzerland's "Mustermesse" in the German city of Weil am Rhein.

Most cross-border environmental problems are dilemma games, especially with common-good problems. Non-cooperation here results in overuse of the common natural resources and hurts all involved more than cooperation. But of course there are also great incentives to not cooperate in the context of these problems, especially when a neighboring country undertakes unilateral measures that give one country a "free ride". A similar situation can be seen in cross-border multiple-way spill-overs, because the coordination structures can often be termed dilemma

¹² "Alsatian potassium mines: less salt in the Rhine": BZ, 15 Jan. 1994: p. 9.

games. Rambo games can be especially detected in cross-border one-way spill-overs involving those located upriver and downriver.

In the stage model presented above, the cooperation probability decreases from above to below. Cooperation is most likely in games without distribution conflicts and least likely in Rambo games. On the other hand, the significance of the normative power of institutions increases from above to below as a precondition to cooperation. Zuern (1992) developed a complex model of interaction between situation structure and secondary factors of influence, such as the frequency of specific games, the transaction density of the participants, the power relationships between the participants and their number. His general thesis is that secondary factors of influence become more important the lower they are in the type of conflict (cf. Zuern, 1992: p. 203-204).

Wolf (1991: p. 100-101) and Breitmeier (1993) reached similar conclusions. They believe that an international regime is most easily created when the problem structures of the participants are symmetrical, in other words when the costs and benefits of the regime are equally distributed. It is also probable when distribution conflicts are kept within limits. For example, this is the case when no existing ownership rights are disturbed, but when it is a question of primary distribution of global goods. The Antarctic Treaty is such a case. Furthermore distribution conflicts are also relatively slight when growth is to be distributed. This means that a regime is more probable in periods of economic boom than in recessions.

International regimes are always embedded in the total relationship of international relations. Consequently other factors can simplify the creation of an international regime. The role of a hegemonical power must be cited above all. In the context of the debate about the loss of hegemony by the USA, it has been ascertained that the threatened loss of hegemony has increased the interest of various partners to distribute costs to achieve a stable world order. They also thrive in the shadow of other strongly developed institutions. The normative power of existing institutions can be detected, that acts like a type of "spill-over effect" of existing cooperation relationships to new fields. This especially applies to often contested procedural elements, i.e., the game rules for creating and further developing international regimes, and checking their success and dealing with their conflicts.

The significance of "epistemic communities" for creating regimes have been "discovered" in recent years (cf. Haas, 1990; Simonis, 1992). Cross-border networks of experts are termed epistemic communities, that share similar philosophies, similar analyses of problems, convictions and strategies. The cohesion is not created by strategic calculations of interest or external pressures, but rather by common convictions and philosophies. These cross-border networks of experts

produce knowledge capable of consensus, that gradually finds its way from scholarly contexts into political practice. It has been demonstrated that dependence on the knowledge of experts is especially important in the discussion about the environment, because many problems cannot be detected directly and ecological programs must be increasingly oriented to the future. Consequently the topic of the environment has to be communicated symbolically (cf. Prittwitz, 1992 and other published materials concerning this). Facts alone do not create a sufficient basis for political action; they have to be interpreted. In general it can be assumed that networks of experts have especially good chances of exerting influence in times of crisis, because the need of decision-makers for new solutions and interpretation strategies is especially great in such situations. However, the strategy using "epistemic communities" is overestimated for its explanation powers, because it is over-stylized to a "victory of the 'expert-crazy' over fundamental interests (cf. Haas, 1992: p. 24). As the representatives of this strategy admit, epistemic communities succeed most when their solution proposals are capable of creating consensus (cf. Haas, 1990: p. 228).

As has been shown here, international environmental policy analysis has developed a differentiated set of instruments to detect structures and constellations that are beneficial to international cooperation and those that are rather unfavorable. There can be a distinction between primary and secondary factors. The primary factors affect the structures of interests and problems. If there is a certain symmetry, cooperation solutions are more probable than when there is asymmetry. The secondary factors affect the context of institutions and power politics in which the environmental conflict takes place. If the institutional context is strongly characterized, a spill-over effect is probable that is able to compensate for the negative effects of asymmetrical structures of interests to a certain extent. These insights of the analysis of international policy can be used for this study insofar as they cite relevant factors of influence, that are also probably important in regional cross-border cooperation in environmental protection. Additionally, these insights provide hypotheses about the promoting or deterring features of these factors of influence, that must be examined in a case study.

4 Strategies for Analyzing Cross-Border Cooperation Processes

As has been shown, the distinguishing factor of environmental protection in border areas is the necessity of coordination and cooperation between the subregions. Cooperation can be structured very differently here and range from loose contacts to common planning and execution. Consequently these different possibilities of cooperation should be systemized according to the criterium of their intensity or degree of progress, whereby the question remains open concerning whether a more intensive cooperation structure always implies improved cross-border environmental protection. Horizontal cooperation in politics is not specific to border regions and to the sector of environmental protection. Consequently the insights of political science into horizontal cooperation in politics can be used to theoretically develop a system of factors influencing cross-border cooperation in environmental protection. As a supplement to the statements in Chapter 3.2.2 about international cooperation in environmental policy, insights from investigations about cooperation between German federal states and about regional cooperation between communities will be explored here. These investigations disclose basic facts about cooperation problems and cooperation structures and thus permit comprehensive access to the factors of influence, that are relevant to regional cross-border cooperation with respect to the environment. The insights concerning the obstacles to cross-border cooperation in European regions compose a narrower and more focussed supplement to the positive aspects.

4.1 Stage Model of Regional Integration

Types of cross-border cooperation (in the environmental sector) can be systemized according to the intensity of the cooperation or the degree of integration.

Starting from the tasks and functions of regional cross-border cooperation (as formulated by von Malchus, 1975 or Leuenberger, 1992: p. 41), a systematization of cross-border cooperation can be outlined on both the operative and the structural level. This is illustrated in Table 4. The intensity of the cooperation and the profundity of the integration of a total region decrease from the top down.

The first step for cross-border cooperation is getting to know one another. This can be effected by a high degree of socio-economic interrelationships on a societal level, by exchange programs on a political-administrative level (e.g., for school children, but also for employees of the public administration), and by conferences. Given the many conflicts associated with the creation of nation states in Europe (especially for Germany's neighbors), measures creating trust are an important intermediate step toward more far-reaching cooperation, such as information exchanges that can be loosely structured (e.g., through common seminars) or institutionalized (for example, compare the recommendations about providing information about new projects on the Upper Rhine). Consultations go a step further than (one-sided) information exchanges, i.e., getting the opinions of the other side about one's own projects (cf. Hermann, 1992: p. 86). If these consultations are established as institutions and extended to the citizens, the stage of equal rights of domestic and foreign institutions and citizens is achieved for licensing procedures (veto rights) and control procedures (legal rights to bring suits). This responsibility to award equal treatment is anchored in international law and numerous recommendations of international organizations (cf. Speiser, 1993: p. 156). If there is an attempt to reach a mutual decision, a distinction must be made between whether the decision is to be independent of an agreement (negotiations that can be halted), or whether the agreement is to be obligatory (voted), so that special procedures and institutions (arbitration boards) can be created for it. In general there must be a decision as to whether these consultations, negotiation and agreements are to take place ad hoc for a special problem or are to be made in firmly established institutions that work continuously. Then the commissions to be established not only serve to solve problems, but also to develop common plans and standards so that the threshold is crossed to a (sectoral) international type of regime. On this level of integration, agreements are only slightly binding and the implementation not sanctioned due to lack of supra-ordinate authority. The agreements are negotiated by representatives of the executive and must be ratified by the respective legislatures. But because cross-border cooperation does not only serve to solve and internal conflicts and to make agreements, other structures also develop parallel to these levels. These structures see themselves mainly as representatives of interests to the outside or as providers of incentives to the inside (e.g., as lobbies, foundations or associations).

A further step toward integration is presented by mutual planning committees, where spatial planning or infrastructure planning is made concrete and binding agreements are reached. This decision-making authority of the regional committee touches upon communal autonomy in the sector of spatial planning, something that also limits this integration level in internal regions of nation states (cf. Fuerst et al., 1990). If the mutual organizational activities affect not only planning tasks, but also

public corporations (e.g., water supplies or public transport), the organization form of joint boards can be used between countries. This option must first be made possible in the cross-border sector for the communities through treaties.¹³ Although it is still a long way away for cross-border regions (although implicitly demanded in the call for "regional parliaments"), the next integration step seems to be in the direction of regional body politics with a separate regional parliament that has decision-making authority extending beyond pure framework planning and single topics.

¹³ The mutual responsibility of infrastructure facilities can also be agreed upon on a substantially lower integration level, as this often occurs on the level of cross-border communal cooperation, for example (often using private law contracts) (cf. Schloegel, 1982). However, organization structures with a decision-making and control committee are necessary for larger and "political" projects (e.g., waste disposal facility or regional transport organization).

Actions/ Measures	Structures/ Organizations
Getting to know one another	Exchange programs
Trust-building measures	Conferences
Information exchange	Seminars
Mutual recognition of other's systems	Participation and procedural rights
Mutual representation of interests to external parties	Associations of related interests
Ideas and incentives directed internally	Organizations, foundations
Ad-hoc negotiations	Project groups
Project-specific agreements	Arbitration boards
Institutionalized negotiations	Sectoral (topic-specific) regime/ commission
Shared infrastructure and spatial planning	Planning boards
Mutual sponsorships	Joint boards
Common binding decrees/ laws	Regional councils/ parliaments
Mutual implementation/ control	Body-politic structures

Table 4 Measures and Organization Forms of Cross-border Cooperation

In cross-border cooperation practiced until now, all forms of acting and all structures including joint boards can be identified.¹⁴ More far-reaching ideas of body politics have failed until now due to legal complications or demands for national sovereignty exercised by nation states. Efforts of the European Parliament to create a (public) legal framework for cross-border regions has been block by the European Commission (cf. von Malchus, 1991: p. 248). However, the history of the area reforms and the regional associations and associations for the area surrounding cities within nation states make it clear that this is not the only reason (cf. for Germany; Fuerst et al., 1990). The principle of communal self-government has largely been able to prevail there against a stronger "regionalization".

4.2 Insights into Factors of Influence in Horizontal Political Cooperation

Against the background of the debate about "international regimes", various game theory constellations were presented in Chapter 3.2.2. Using their structures of interests, international environmental problems were illustrated. Comparable constellations of interests are also used in the German debate about consensus-oriented negotiating systems, that are currently being above all applied to the problems of cities and their surroundings and to the cooperation between the individual German states. There are similar interaction problems in these cooperation sectors as there are in cross-border cooperation between various subregions of countries. However, it can be assumed that the effects of separation created by the borders of the individual regions are not as strong in such internal country types of cooperation as they are in international ones.

The studies of community and international cooperation provide specific analytical and normative starting points for the consideration of cross-border cooperation with their focus on institutional aspects.

4.2.1 Insights from Investigations into Inter-communal Cooperation

Fuerst et al. (1990) investigated the potential and restrictions of different organizational forms of regional associations and associations for cities and their surrounding areas with respect to their accomplishments in inter-communal planning

¹⁴ Based on a treaty between Germany and Holland as well as the regions involved in the two countries, it is now possible (and has been done) to create cross-border joint boards.

tasks. They paid special attention to the innovative capability in the ecological sector of the associations.

Fuerst et al. (1990) systemized the field of investigation as follows:

- participants
- topics
- complementary framework conditions
- institutional frameworks

They differentiated between the interests/ values, capability and thought patterns of the participants. The topics included categories such as "political type in the sense of Lowi, security/ insecurity of the information basis, innovative and routine character of the solution frame for problems, time pressure" (Fuerst et al., 1990: p. 15). The framework conditions were separated into legal-institutional regulations, social environmental factors (e.g., political culture), and objective environmental factors.

The institutional frameworks were analyzed with respect to the following aspects:

- responsibility, decision-making and resource structure
- institutional potential and restrictions of conflict management
- innovation behavior
- procedural problem solving patterns

It was found for the responsibilities that regional organizations have almost exclusively planning tasks and no implementation ones. In the decision-making structure, there are clear differences with respect to direct or indirect election of regional councils and the participation of communities. Whether organizations are only financed by their members (from below) or with public funds is significant for resource structures.

These structural factors have substantial influence on conflict management and innovation behavior. The basic fact of the existence of organizations alone made a continual dialog possible, a professional (i.e., objective) debate and the ability to think in terms of shared regionalism. The created forum of institutionalized conflict management also create incentives at the same time to articulate conflicts more quickly and precisely. Greater independence of the regional level (especially through direct election of regional parliaments) increased institutional conflicts. On the other hand, the restriction to planning tasks and non-involvement in controversial sponsorship functions made a moderating role possible for the regional

planning organizations, that could have also resulted in an (ecological) innovative role given the right personnel.

Seen from a procedural viewpoint, the greatest strength of the actually institutionally weak organizations lies in their power to define new problem areas, that can be used strategically within the framework of the planning functions and through the creation of contact networks. The primary resource to solve conflicts is of persuasive nature, because political bartering is only possible to a limited extent and compulsory measures are not available or not used. There are special possibilities when the organization has an initiation right and several arenas in which to act, so that the decision-making process can be separated into an increasing number of conclusions.

The integration level of national agglomeration regions is clearly more advanced than that of cross-border regions. However, the functions delegated to the "region" are very limited and not very different. The study conducted by Fuerst et al. makes it clear that there can also be potential for innovation in institutional weakness.

4.2.2 Insights from Investigations into Federal Cooperation

Benz (1992a) identified the cooperation between the city-state Hamburg and the federal state Schleswig-Holstein as a problem, because the negotiations concerning individual problems were made more difficult

- by general conflicts between a city and areas surrounding it (revenue sharing)
- by ideological and political party differences
- by interests that differed locally in the surrounding areas
- by specific problems of making decisions in horizontally interrelated fields of politics.

According to Benz (1992a), a specific problem of horizontal political interrelationships in democratic countries is that the participants are integrated into different decision-making contexts and these contexts have different game rules. On the one hand, political decision-making takes place in negotiating arenas with partners having equal rights, whereby the necessity of consensual agreements favors compromises, barter and compensation deals as a modus of conveying interests. On the other hand, the participants from the field of politics are subject to the game rules of party competition and parliamentary majorities as representatives of democratic bodies, that results in an interaction style of confrontation and exclusions due to the political competition. Experience teaches us that participants

who are subject to political control by committees are less likely to make compromises when negotiating. They are more prone to stick to their initial positions and present high demands, so that agreements are more difficult to reach.

Besides these deterring factors of influence, research into political interrelationships in a federal country¹⁵ has conveyed insights into the typical **orientation to and strategies of interaction** in non-hierarchical decision-making processes.

Cooperation problems can mainly be traced to different interests. However, not only the "objective" interest (insofar as it can be determined at all) determines the readiness of participants to cooperate. The orientation to interaction is also significant. i.e., how participants view the problem and the other participants. Three orientations to interaction were differentiated by Scharpf (1992; p. 53-54) analytically:

- "individualistic" or "ego-centric" orientation only looks after one's own advantages and disadvantages,
- "cooperative" orientation uses common benefits as the criterium for action,
- "comparative" orientation primarily considers the comparative "benefits" with respect to the "partner".

In cross-border cooperation, it must be assumed that the representatives of subregions represent "individualistic" interests, whereby cooperative orientation to actions can also be expected from certain participants. On the other hand, the phenomenon of "epistemic communities" of cross-border expert committees with orientation to problem-solving that is based on professions and knowledge must especially be pointed out here (cf. 3.2.2). There must be an investigation into whether "comparative orientation" of the elected representatives is due to party competition, competition for investments, or historical animosities.

In an earlier study about "Politikverflechtung" Scharpf (1978: p. 27) assumes that the necessity for consensus in non-hierarchical decision-making processes increases with the number of participants, the complexity of object about which the decision is to be made, and the probability of the conflicts of interests. Minimizing this need for consensus can be fulfilled by the following strategies for actively creating consensus:

- Information strategies have the function of replacing ignorance with knowledge and uncertainty with certainty. Although they cannot direct-

¹⁵ Refer to Scherer (1994) for an investigation into the political interrelationships between the communal and regional levels; Scharpf did not deal with this area.

ly create consensus, they promote the development of similar ways of looking at problems, on the basis of which negotiation and compromise possibilities can be found.

- Persuasion strategies call on global premises, that those appealed to have accepted themselves. Their success is contingent on the legitimation of the person trying to persuade and the intensity with which the people appealed to accept the premises.
- Strategies using force or bargaining, threaten negative or offer positive sanctions to change the real situation of those appealed to. In consensus-oriented negotiation systems, revenue sharing and linkage deals have great significance. They clearly differ from information and persuasion strategies which only try to change the perceptions and preferences of those appealed to (cf. Scharpf/ Reisset/ Schnaebel, 1976: p. 47 et seq.).

However, if no consensus can be achieved using this strategy, there is danger of blocking the interrelated decision-making process, when there is no circumvention to a systematic minimizing of the need for consensus, e.g., using strategies that reduce the complexity of participants or decisions. If these strategies do not result in consensus, the probability of a conflict can be reduced, for example, by "structure maintenance", "equal treatment", "conflict postponement" or "abandonment of intervention" (cf. Scharpf, 1978: p. 28).¹⁶

Which strategies can be found in cross-border cooperation and why they are used and not others are questions that are significant in this study with respect to the recommendations for action.

4.2.3 Empirical Insights of the Analysis of Cross-Border Cooperation

Cross-border cooperation has increasingly become the object of scholarly studies in recent years. The focal point of these studies, is on issues of spatial planning and regional development. Environmental problems or environmentally-relevant infrastructure measures are often considered too, whereby the analysis is usually only done with respect to the contents of specific problems and is less directed at the conditions of perceiving and solving the problems. In spite of this, these empirical analyses can be used to identify the factors of influence on cross-border cooperation processes, because they also contain statements about the necessa-

¹⁶ Schnell (1993) summarized an overview of the different strategies of resolving conflicts in the environmental sector and the closely related new forms of democratic administrative action.

ry preconditions or obstacles to cross-border cooperation. Three aspects that are important for successful cross-border cooperation are cited in most studies:

- institutional preconditions in the participating countries (federalism and communal self-government)
- legal and contractual framework conditions for cooperation
- political will of the participants to cooperate

In addition, Leuenberger (1992b: p. 38.45) formulated further elements that are necessary for cross-border cooperation processes:

- a common will in the region (created by a regional identity or by common interests)
- sufficient knowledge about the region (compatibility of data and information channels)
- regional responsibilities and authority (from rights to a voice in affairs, mutual planning and ownerships and all the way to the setting of standards and the authority to enforce regulations)
- regional resources (organization, personnel and finances)

There is a comprehensive account and analysis of the obstacles to cross-border cooperation in spatial planning for the Upper Rhine border region, in which the fundamental systematization of these obstacles was concluded. Arnold-Palussi re (1983: p. 296) distinguishes here between obstacles due to confrontation between different systems and obstacles that are connected to the institutions and their instruments. In the confrontation between systems, she differentiates the following factors:

- different languages
- different analysis and illustration instruments
- different national standards and political and administrative interrelationships
- different political-administrative systems

She listed the following aspects for the institutional problems:

- relationships between institutions (complexity, vagueness and competition)
- problems of organizational structure or unclear delegation of responsibility in the national administration (centralization of external contacts versus sectoralization)

- insufficient personnel
- composition of the delegations (representatives instead of specialists)
- procedural aspects of cooperation (first coordination with national specialist department versus primary cross-border creation of opinions)
- continuity of cooperation

Difficulties were discussed concerning the problems of legal instruments in the following areas:

- procedures of consultation and mutual investigations
- founding of communal joint boards
- treaties or contracts

Summary

The analytical components sketched in this chapter can only be used as a source for the development of a specific analysis grid for the factors of influence in cross-border cooperation in the environmental sector. This analysis grid can then be used as the basis for the comparative international study as well as for the two case studies "Upper Rhine" and "Lake Constance". However, concrete adjustment of the analysis grid to the specific investigation conditions seems necessary.

5 Factors of Influence in Cross-Border Cooperation on Environmental Issues

The sector of cross-border cooperation in the environmental sector is a very complex field of investigation, as has been demonstrated. To be able to identify the conditions of successful cross-border cooperation, it seems necessary to concentrate the analysis on a few concrete factors without losing sight of the whole context. Consequently two steps are employed in formulating the analysis grid that is the basis of the present study. First an overview of the factors of influence and the determinants of the system for treating the problem are sketched in order to initially structure and classify these factors. In a second step, the factors of the cross-border interaction systems to be examined more precisely in the process analysis are presented in more detail.¹⁷

In general, cross-border cooperation in environmental protection can be interpreted as a group process. The common actions of a group to solve a common problem are contingent on three sectors of factors:

- the individual group members (subregions)
- the relationship of group members to one another (homogeneity or disparities of the subregions, constellations of interests)
- the interaction between the group members (interrelationships and cooperation or conflict-solving structures between the subregions)

In a first stage, the will and the possibilities of the individuals (of subregions) to solve problems is to be analyzed. The will to solve a problem is determined by the specific interests with respect to a problem and by the perception of the problem. The specific interest of a subregion to solve an environmental problem can be traced back to the respective constellation of those affected and causers in the subregion. These subregional interests are the result of the potential and the utilization within a region. Indicators for this are to be recorded by examining the ecological potential, the housing and population structure, the economic structure and the technical infrastructure and then are to be derived from the constellation of interests within subregions resulting from these things. However, the will to act that collective actors have (e.g., [sub]regions) is not determined exclusively by the

¹⁷ The establishment of indicators for the factors of influence is done in the empirical sectors, because different indicators are meaningful and practical depending on the focus of the different empirical analyses.

"objective" focus of interests. Culturally normative and cognitive factors also influence the perception of problems and the definition of self-interests. Environmental consciousness and the state of knowledge in subregions with respect to an environmental problem are indicators for this perception factor. The possibilities of individual subregions depend on their capacities for solving problems (cf. Chapter 3.1.2):

- economic performance (the structural data provided above also provide accounts of this)
- innovative and strategic capability of the political-administrative system. Indicators for this (in an extremely simplified form) can be the constitutional aspects of the political system (federal government structure with decentralized legitimation and authority) as well as the consolidation level of the environmental administration and environmental lawmaking.
- institutionalization of environmental interests. Indicators can be the strength of environmental organizations and ecologically-oriented political parties.

The profiles of these factors in the individual subregions do not play a decisive role in themselves for the analysis of cross-border cooperation in environmental protection. Rather the decisive matter is the constellation between the subregions with respect to these factors. There must be an investigation into the constellation of interests between the subregions, but also into the possible different perceptions of the environmental problem in the subregions as well as the differences in the level or compatibility of the capacity to solve problems. Consequently the relationships between the subregions were given priority when examining the factors and indicators listed above.

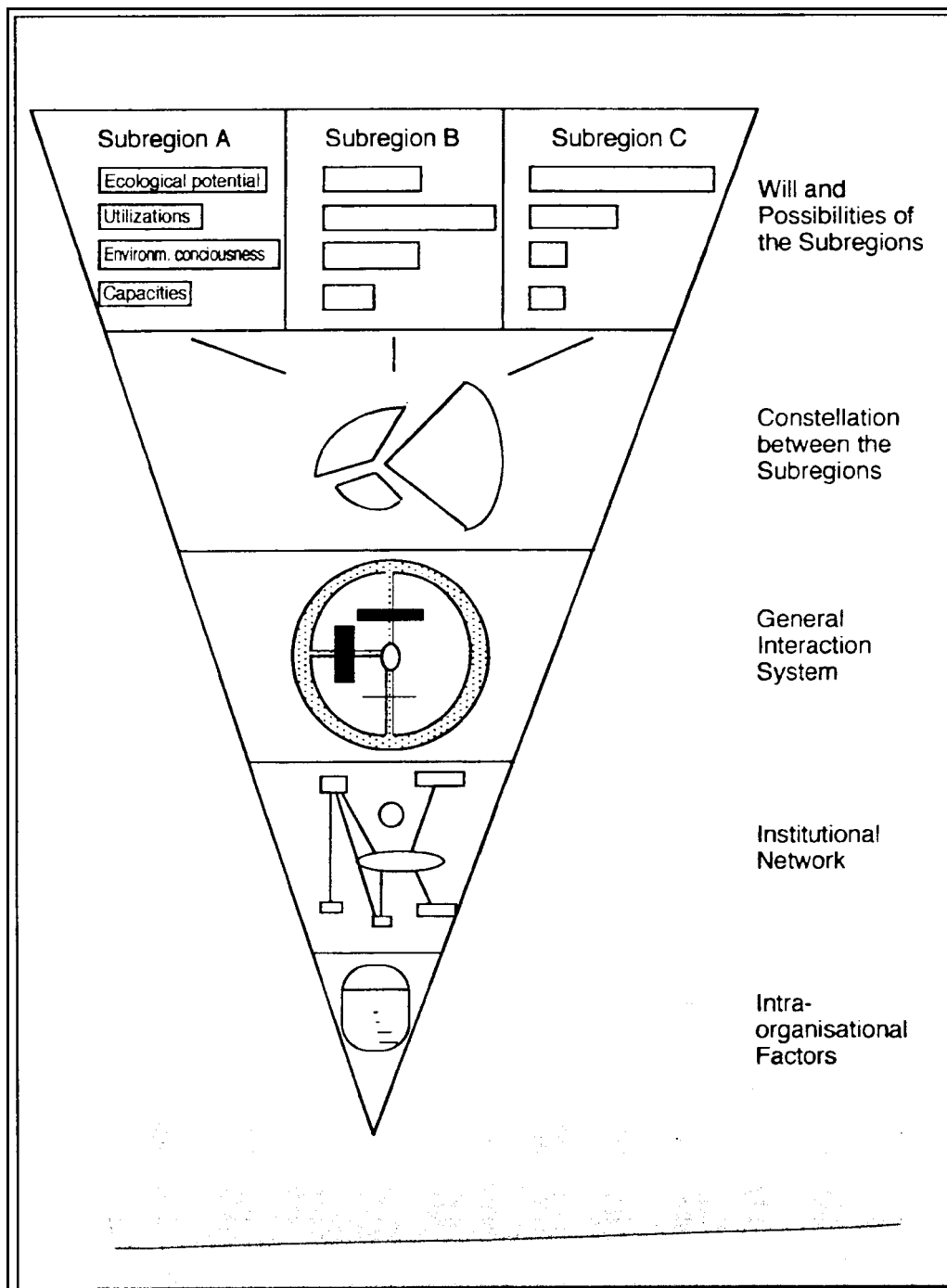


Diagram 4 Structure of the Factors of Influence

The analytical separation of "domestic factors" within the subregions and "constellation factors" between the subregions makes it clear that cross-border cooperation in environmental protection involves political processes. These processes can be termed "two-level games" (Putnam, 1988) or "Mehrebenenverflechtung" ("multi-level interrelationships"; Benz, 1992).

As a subsequent analytical step, interaction between subregions is examined, whereby comprehensive interaction and interaction structures must be separated from the analysis of specific problems. Based on the insights of the regime analysis, the general interaction system is assigned substantial significance for solving specific problems, because the mutual dependence and the stability of the cooperation relationships are characterized by these factors. The following factors are to be considered in particular:

- the density of the socio-economic interrelationships as an expression of the socialization in the subregions
- the general cooperation structures as measure of the potential for institutional cooperation
- the cross-border regional consciousness as the motivation potential for common activities

The topic-specific interaction system forms the core of cross-border environmental cooperation. The network and domestic organization of the authorities responsible for the environmentally-relevant fields of action in cooperation are the focus of the analysis. As in more recent theories of international relations or in the theory of "Politikverflechtung" it is assumed that these institutional factors have a not unsubstantial influence on the political output.

Hypothetically or according to the insights up till now, the relationship of the influence levels can be characterized as follows: problem perception and capability of subregions/ countries to solve problems have the most important and fundamental influence on the environmental policy output in the total region. But the position held concerning the environmental problem with respect to the other participants (causers and those affected) also influences the internal pressure of the problem, and the interaction with other participants influences the perception of the problem and the capability of subregions to solve problems. The constellation with respect to the problem between the participants (what "game" is being played) determines the majority of cooperation output. However, the installed interaction system can achieve considerable modifications of the basic constellation and consequently environmentally-oriented cooperation.

In spite of this evaluation of the importance of the determinant sectors of influence, the focus of this study is on the interaction system and is specifically oriented to the sectoral interaction system for the process analysis. This is because action-oriented recommendations can result from the analysis in this sector, while the determination of other factors is more likely to have explaining or predicting functions. The factors of influence in cross-border interaction systems are illustrated systematically in Diagram 5.

With respect to the problem field or problem sector, the associated structure of institutions must first be recorded and analyzed. Concrete questions must be posed about which cross-border committee is dealing with the problem, what its external structure is, and - when there are several committees - what their relationship is. It must be determined first whether there are any cross-border committees to deal with the topic at all or whether problems and projects are being dealt with ad hoc. Then the question must be posed whether one or more committees are involved, and whether they are general (sector-overlapping) cooperation committees or specific (sectoral) committees. Access and participation are additional important structural aspects, whereby the question concerning the participating political levels is especially important. Furthermore, the following two aspects concerning participation must be considered:

- Are only the executive (administration) or the parliaments and councils represented?
- Are only public institutions or other (semi-public or private) participants represented?

Besides these aspects that all refer to the central (governmental) cooperation and decision-making institutions, the institutionalization of the respective interests of causers, those affected and helpers must be considered, because their degree of organization has a pivotal influence on the political output.

If one or more central cooperation committees were identified, intraorganizational factors are to be integrated into the consideration. Questions arise here concerning the definition of responsibilities and how the committee views itself as well as concerning the legal form and thus the binding power of the decisions and resolutions. The questions concerning the types of action and the instruments that the committee has at its disposal are closely connected to this. The following aspect are significant for the compositions of delegations:

- The political levels from which the representatives are sent, whereby not only the formal aspects play a role (responsibility of specialist department), but also the question concerning whether a region-inter-

nal or region-external viewpoint is represented by the institutional origin of the representative.

- Are the delegates elected representatives or specialists (-> operative orientation)?
- Neither must the fact be neglected that political events are not only contingent on structural factors, but that individual personalities also have leeway within the given framework and thus individual factors must also be considered.

Procedural aspects such as initiative rights and the decision mode compose an additional sector of potential determinants. A committee's personnel and finances are also very important for its capacity to act.

The factors listed here present an analytical instrument derived from published materials. Using these factors, the conditions for successful cross-border cooperation in environmental protection can be investigated in this study, whereby modifications are unavoidable in the empirical part of the work due to the specific sectoral problem field and the problems of gathering information.

Factors of Institutional Structures

Ad hoc versus fixed institutionalization (continuity)

One participating committee versus several committees

Intersectoral versus sectoral committee

Participation of the executive or legislative

Interrelationships between the participating institutions

Institutionalization of the interests

Organizational Factors

Task definition and the committees understanding of its responsibility

Legal form and binding character of the decrees

Operative forms and instruments

Procedural aspects (initiative rights, decision-making mode)

Delegation composition

Resources of the cooperation committee

Diagram 5 Institutional Factors of Influence

6 Literature

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