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Roland Scherer, Joachim Blatter

Preconditions for successful cross-border cooperation on environmental issues. Research results and recommendations for a better practise

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EURES
Institute for Regional Studies in Europe
Schleicher-Tappeser KG
Basler Straße 19, D-79100 FREIBURG
Tel. 0049/ 761/ 70 44 1-0
Fax 0049/ 761/ 70 44 1-44

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Preconditions for successful cross-border cooperation on environmental issues

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Basler Straße 19, D-79100 FREIBURG
Tel. 0049/ 761/ 70 44 1-0
Fax 0049/ 761/ 70 44 1-44

Prof. Leuenberger
Hochschule St. Gallen
Volkswirtschaftliche Abteilung
Bahnhofstr. 8
CH-9000 St. Gallen

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Roland Scherer (born 1965)

Degree in Public Administration from Constance University. Focal points of studies on communal and regional studies. During his work at the Institute for Technology Management (ITEM) at St. Gallen College, he worked on the "Incentive Program for the Lake Constance Region". He has been employed at the EURES Institute since 1992 and deals with issues of regional development and cross-border cooperation.

Joachim Blatter (born 1966)

Degree in Public Administration from Constance University. Worked for the German Institute for Urbanism in Berlin. Master's thesis (1993) about the possibilities and restrictions of environmentally-oriented measures in urban transport. Employed as an assistant at the College for Economy, Law, and Social Sciences of St. Gallen since 1993. Co-author of the study "Euroregion Lake Constance: Incentive Program for the Lake Constance Region", supported by states and cantons of the Lake Constance region and the EU Commission (1992). Currently working on his Ph.D. dissertation about cross-border cooperation in Europe and North America.

Table of contents

1	Introduction	1
2	Specific Features of Cross-Border Cooperation on Environmental issues .	3
2.1	The Starting Point of Cross-Border Environmental Policy	5
2.2	The Cooperation Process of Cross-Border Cooperation	7
2.3	Results of Cross-Border Cooperation in the Environmental Sector	12
3	Factors of Influence on Cross-Border Environmental Policy	16
3.1	Sequential Model of Cross-Border Environmental Policy	18
3.2	Conclusion	25
4	Strategies for Intensifying Cooperation	29
4.1	Framework Conditions	29
4.1.1	Improvement of the jurisdiction and resources of the regional cross-border participants	29
4.1.2	Intensification of the general societal integration of the border regions	31
4.2	Basic Knowledge, Standards, Models	31
4.3	Institutions, Decision-Making Mechanisms, and Conflict-Solving Mechanisms	34
4.4	Instruments and Cooperation Intensity	39
5	Recommendations to Political Actors	40
5.1	Recommendations to the European Union	40
5.2	Recommendations to the Border Regions	42
6	Literature	45

List of Diagrams

Diagram 1 Factors of influence on cross-border environmental policy (Source: Scherer/ Blatter/ Hey, 1994: p. 53) 17

Diagram 2 Scheme of cross-border cooperation in the environmental sector 26

1 Introduction

Within the framework of the present study, there will be an attempt to identify the obstacles to cross-border cooperation in 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 study is composed of three investigation components. In a comparative international study, the following European border regions will be examined with respect to their cooperation in the environmental sector (cf. Leubuscher/ Hager, 1994):

1. Ireland/ Northern Ireland (Republic of Ireland, GB)
2. Saar-Lor-Lux (Germany, Luxembourg, France, Belgium)
3. Euregion Meuse-Rhine (Belgium, Germany, Netherlands)
4. Communauté de Travail des Pyrénées - CTP (Spain, France, Andorra)
5. Euroregion Pyrénées (Spain, France)
6. Transmanche Euroregion (UK, France, Belgium)
7. EUREGIO (Germany, Netherlands)
8. Benelux Middengebied (Belgium, Holland)
9. Euregion Scheldemond (Netherlands, Belgium)
10. Extremadura/ Alentejo (Spain, Portugal)
11. Cross-border Community of Aquitaine/ Euskadi/ Navarra (France, Spain)
12. Friuli-Venezia Giulia/ Slovenia (Italy, Slovenia)
13. Comunidad de Trabajo Galicia-Norte de Portugal (Spain, Portugal)
14. PACTE (Belgium, France)
15. The Archipelago (Sweden, Finland [Åland])

In addition to this comparative European study, more detailed analyses were conducted in two border regions to investigate the cooperation processes in progress there concretely. One region was the **Upper Rhine region**, where Germany, France and Switzerland participate (cf. Hey/ Betz, 1994; Poetsch, 1994; Blatter, 1994b), and the other was the **Lake Constance region**, where Germany, Switzerland and Austria are involved (cf. Scherer/ Mueller, 1994; Schnell, 1994; Blatter, 1994a). There was an attempt in both border regions to analyze the total cooperation processes in two similar environmental problems (prevention of water pollution and local public transport). The objective of this analysis was to identify factors that influence cross-border cooperation either positively or negatively. To guarantee the correspondence of the two investigation components, a detailed analysis grid was developed. This grid was used as the basis for the empirical investiga-

tions in the different border regions (cf. Scherer/ Blatter/ Hey, 1994). The basis for this was the theoretical debate about international environmental policy on one hand, and on the other hand the existing empirical and theoretical insights into cross-border cooperation processes.

Based on the results of the comparative European study and two regional studies, there is an attempt in this part of the study to depict the specific features of cross-border cooperation in the environmental sector, to identify its factors, and to point out possibilities for intensifying cooperation. Based on these findings, concrete guidelines for action are to be formulated for various political levels, whereby the focal point is on the European and regional level.

2 Specific Features of Cross-Border Cooperation on Environmental issues

Cross-border cooperation in environmental protection is a political field of action at the interface of two different policy sectors: **international environmental policy** and **cross-border cooperation** on the sub-national level. Both sectors are relatively new policy fields, that have received increasing attention over the last few years. Although both policy fields were already discussed in politics and political science during the seventies, a substantial increase of their significance in political practice and scientific discussion can be seen today. There are various reasons for this:

- In connection with the creation of the single European market and the fundamental political changes in Eastern Europe, the "impermeability" of borders is being criticized and attempts are being made to reduce the effects of separation that these borders produce. This development is being strongly supported by the European Union, and consequently a special instrument for promoting it has been made available on the European level in the form of the INTERREG joint initiative. Within the framework of the empirical investigation, it has been seen that this joint initiative has created important incentives for cross-border cooperation on the sub-national level. Due to the subsidies made available by the EU Commission, numerous border regions tried for the first time to cooperate across borders and numerous new cross-border organizations have been founded. Criticism has been expressed by various sources that the intensification of cross-border organizations often only serves to take advantage of these subsidies (cf. Leubuscher/ Hager, 1994). However, it can be stated that national borders have become more open on the regional level in the past few years, and that numerous regions are attempting to carry out their own autonomous "foreign policy" with their respective neighbors insofar as this is possible.
- Environmental policy is another important political field of action. In the past few years there has been a substantial intensification of political activities on various political levels with respect to this topic. This can be seen on one hand in the increasing legal regulation of environmental standards on national levels and on the international level. On the other hand, concrete environmental protection measures are being promoted within the framework of financial programs. A substantial further development in environmental policy can be seen with respect to the ecological profundity of effects of the different environmental protection measures and programs. In the past, environmental policy largely dealt with fighting symptoms, distribution of burdens or the use of end-of-pipe technologies. Environmental protection was merely considered a type of end-of-pipe environmental protection, in which already created pollutants were "filtered" in facilities such as sewage treatment plants, flue gas dust collectors, or catalytic mufflers. However, integrated environmental protection concepts are becoming increasingly important in environmental policy, where there is an attempt to minimize the use of energy and raw materials through rationalization measures. The same applies to environmental protection measures that can be termed "ecological structural policy" and that

promote a structural change in the direction of environmentally compatible technologies and spatial systems. In spite of this incontestable increase of the significance of environmental policy, a contrary movement must also be acknowledged that has developed over the last two years. Since the beginning of the worldwide recession, there has been an attempt to substantially roll-back the environmental standards. This roll-back can especially be detected in the environmental policy of the European Union (cf. Hey, 1994).

Cross-border cooperation in the environmental sector is operating at the interface of these two policy fields. The empirical investigations in the various European border regions have demonstrated that a separate policy field exists here. This applies in the sector of international environmental policy to the environmentally relevant problem situations, that are much closer to the problem in cross-border environmental policy than on the European or global level. The difference to general cross-border cooperation lies in the substantially higher degree of complexity of the composition of those participating, by which cross-border environmental policy is normally characterized. This higher degree of complexity arises from the fact that various political levels are involved in solving cross-border environmental problems, whereby in part participants with different sectoral interests are involved in the cross-border cooperation process from the regional to the national levels. Cross-border environmental policy is thus characterized by a very high degree of complexity and at the same time with concurrent lacks of hierarchical decision-making systems.

Herein lies the specific feature of this political field, that decisively influences its results. Domestically, environmental problems caused within a country can only be dealt with and solved on the regional or even local level. There are usually legally structured vertical decision-making systems in nations, where the jurisdiction of the individual political levels for decision-making and implementation is defined precisely. These decision-making systems usually do not exist for cross-border cooperation or are not "compatible" with the respective national decision-making systems. This means that the respective political levels have different jurisdiction for decision-making and implementation. In the practice of cross-border cooperation, these incompatibilities result in a significant increase of the complexity of those participating and consequently to an increase of the necessary requirements for cooperation. Because at the same time there is not a hierarchical decision-making structure contrary to the situation in intrastate issues, the problem-solving process for environmental problems must be considered extremely difficult.

Due to this fundamentally difficult constellation in cross-border cooperation in the environmental sector, it is consequently amazing how "successful" the cooperation is in a few European border regions. Only the results of the **Lake Constance region**, the **Rhine-Waal region** or the **Euregio** are to be pointed out here as examples (cf. Scherer/ Mueller, 1994; Leubuscher/ Hager, 1994). However, it must be remembered that - based on the empirical results - the chances of success of cross-border cooperation in the environmental sector are not to be overestimated. Until now cooperation has only been successful in dealing with different environmental problems to the extent to which one of the participating sub-regions acts itself in its area. As practical experience has demonstrated, cross-border environmental policy can normally only simplify the transfer of "modern" environmental policy beyond national borders. In the ideal case this can result in a situation that the importing one of the participating sub-regions can take a "forerunner" role within its own country. The significance of Alsace must be pointed out in this connection, that has an important forerunner role in environmental protection in France (cf. Hey/ Betz, 1994). This permeability of the borders for modern environmental policy can contribute to a European-wide improvement of the environmental situation in the long run. However, it also holds the danger of a lowering already existing environ-

mental standards in the wake of the currently observable environmental policy roll-back. Examples of this are the problems in the German-Czech-Polish border areas (e.g., at the Tudrov brown coal power plant; cf. Scherer/ Betz, 1994) or in the German-Swiss border area (e.g., the Albrück paper factory; cf. Hey/ Betz, 1994).

In the following section these global models of cross-border cooperation in the environmental sector will be made concrete and individual features of this policy field will be pointed out. These models are based on the environmental policy **starting point**, the cross-border **cooperation processes** and their environmentally-relevant **cooperation results**.

2.1 The Starting Point of Cross-Border Environmental Policy

A starting point for cross-border cooperation in the environmental sector can describe an environmental problem that the cooperation is to solve. But the empirical analyses within the framework of this research project have demonstrated that other starting points are also feasible. Especially the availability of different resources (e.g., sponsorship money) plays an important role. For example, various cross-border environmental projects were initiated by the INTERREG program of the EU (cf. Leubuscher/ Hager, 1994). However, only cases with an existence of environmental problems as a starting point for cross-border cooperation in the environmental sector will be dealt with in the model below.

Based on theoretical insights, three different ecological interrelationship types can be distinguished that cross national borders (cf. Scherer/ Blatter/ Hey, 1994). The typical interrelationship types are ideally:

- one-way burdens
- multiple-way burdens
- common-good burdens

These interrelationship types are differentiated by the ascertainable interests of causers and those affected and consequently by the cost-benefit relations that the individual sub-regions dispose of in solving a concrete environmental problem. **One-way burdens** present a clear asymmetry of cost-benefit relations among the individual sub-regions. Solving such an environmental problem would mean that one of the sub-regions incurs costs while another sub-region only enjoys benefits. Because the costs and benefits of a measure are unequally distributed, cross-border cooperation is made more difficult. In the case of one-way burdens, the danger quickly arises that cross-border conflicts are created that cannot be solved in most border regions due to the lack of conflict-solving processes. In the practical affairs of cross-border environmental policy, environmental burdens with strongly asymmetrical cost-benefit relationships have usually not been dealt with as a result. There is a danger that a cross-border environmental burden is not solved mutually, but that rather a cross-border conflict is avoided by "non-treatment" of this topic.

A different situation is represented by the ecological interrelationship types of "**multiple-way burdens**" and "**common-good burdens**". Symmetrical cost-benefit relations are prone to exist in these cases, that can simplify cross-border cooperation. However, there are clear differences between multiple-way and common-good burdens at the same time with respect to the structures of interests of the sub-regions involved. These refer above all to the relationships between causers and those

affected and the resulting cost-benefit relationships. There are very diffuse relationships between causers and those affected in the case of common-good burdens, whereby each of the sub-regions simultaneously causes and is affected by an environmental problem. The result is the danger that one of the sub-regions profits from the efforts of the other as a "free-rider". Without the sub-region having to incur any costs itself, it profits at least for a while from the benefits that result from the efforts of the other region. This can be demonstrated using the example of any lake:

Country A and country B border on the EURO lake from which both get their drinking water and into which both dump untreated sewage water. The drinking water supply is substantially endangered by this pollution. Both countries decide to increase the quality of the Euro lake water by improving their respective sewage systems. Country B constructs sewage treatment plants for 100 billion ECU, to which 99.9% of the population in country B are connected. The drinking water quality of the Euro lake improves abruptly, because half of the pollution has been eliminated. Consequently good drinking water quality seems assured. Country A has not built any sewage treatment facilities, but also gets clean drinking water again due to the investments of country B.

This clearly demonstrates that the danger of sub-regions taking "free-rides" exists in the case of common-good burdens with their diffuse relationships between causers and those affected. This problem does not exist for multiple-way burdens, because each side can only profit from the measures taken by the other side and consequently will not take one-sided preliminary measures. The air quality policy in the "Black Triangle" between Germany, Poland and the Czech Republic is a good example of this. The problem in this case lies in the comparability and degrees of compensation in accord with the mutual pollution.

However, cross-border cooperation seems to be relatively easy in a consensus-oriented policy in both ecological interrelationship types due to the symmetrical cost-benefit relations in the problems of environmental policy. This can also be seen in the practical application of cross-border environmental policy, where symmetrical environmental burdens are usually dealt with involving few conflicts and a high level of cooperation. However, it must be stated that there is seldom a complete symmetry of the cost-benefit relations.

The analysis of environmental policy in various European border regions and especially in the Lake Constance region (cf. Scherer/Mueller, 1994) has demonstrated that numerous cross-border environmental projects do not correspond to the ecological interrelationship types listed above. Many environmental projects are not based on a **mutual** environmental problem, but rather an **identical** one. This means that there are not any concrete or even diffuse relationships of causers and those affected across the national borders. The result is that cross-border cooperation is not imperative for solving these problems. The reason for cooperation in spite of is that economic or efficiency motives speak for it and that there is no problematic asymmetrical cost-benefit relationship between the individual sub-regions. Cross-border cooperation can substantially increase the efficiency of an environmental policy action program, which in turn improves the cost-benefit relations of the participating sub-regions. When there are identical environmental problems, cross-border cooperation provides economic advantages to each of the participating sub-regions, that could not be obtained without this cooperation. A good example of this is the local public transport system at the western part of Lake Constance, that is certainly not a direct cross-border transport system. However, cost benefits are created for both sides by the cross-border organization of the "Seehas" (cf. Schnell, 1994). These possible cost benefits ensure that the expenditures for cross-border cooperation for identical environmental problems are relatively slight.

In the empirical analysis of cross-border cooperation, there is now a rather interesting picture of the ecological interrelationship types connected to an environmental problem that are dealt with in cross-border cooperation. It was assumed originally that environmental problems that belong to the types of one-way or multiple way interrelationships play a dominating role in cross-border environmental policy. However, this is not the case in actual practice. The great majority of cross-border environmental projects have a mutual or identical environmental problem. The solution of common-good problems is an especially important field of action in cross-border cooperation.

The protection of mutual ground water reserves, the designation of cross-border protected areas, and the mutual conservation of landscapes are important environmental projects, that must be commonly planned and executed. In the case of one-way burdens on the other hand, cooperation has only taken place to a limited extent across borders. Cooperation has been on a very low level and has never resulted in a solution to a problems supported by both sides. This means that environmental conflicts are mostly not solved by cross-border cooperation when the costs and benefits are distributed very unequally on both sides. This is demonstrated by the problem of the Tudrov brown coal power plant in the Niesse European region, that has not been solved till now with the available instruments. Cross-border cooperation has simply not taken place. There has been no procedure till now for solving conflicts of such environmental problems. This can be seen in the fact that one-way burdens are normally only dealt with as side issues in otherwise smooth functioning cross-border communication relationships. Cross-border environmental policy is especially successful and results in the execution of a project when the topic poses few conflicts. This means that cross-border cooperation is often a "**fair weather policy**" in many border regions.

2.2 The Cooperation Process of Cross-Border Cooperation

The treatment of environmental problems in various European border regions involves very different cooperation processes. The differences ascertained in the empirical analyses refer above all to the participants in the cooperation process and the environmental policy instruments that are employed to solve the environmental problems. In spite of large differences in both the fundamental environmental problems and the cooperation processes taking place, a number of factors and constellations could be determined that can be considered typical characteristics of cross-border environmental policy.

Participants

Numerous different **participants** are involved in cross-border cooperation processes in the environmental sector. This applies both to the affiliation to various political levels (regional versus national) and to the affiliation to different systems (administration, politics, public, science). Cross-border environmental policy is normally characterized by a high degree of complexity of the composition of participants. The dominating participants in the cooperation process come especially from the administrative system, whereby participants from the scientific community are involved in a few cases. There are also close cooperation relationships within the societal system, where conservation and environmental protection organizations - as a type of organized public - have an important function for cross-border environmental policy in various European border regions. However, a definite separation can usually be detected between cross-border administrative

cooperation and the cooperation of the non governmental organizations (NGOs). It was ascertained in both of the regional studies on the Upper Rhine and Lake Constance regions that the environmental protection organizations exercise important functions for a successful environmental policy in border regions in spite of this lack of networking between the public administration and the NGOs (cf. Hey/ Betz, 1994; Scherer/ Mueller, 1994). On one hand, the conservation and environmental protection organizations provide an important **pool of innovative ideas** for modern environmental policy. Although it cannot be directly proven, they influence the cooperation processes of the cross-border administrative committees with their more profound demands and even with the execution of a few innovative environmental projects. The activities of the Lake Constance Foundation and the Lake Constance Environmental Projects should be mentioned in this context (cf. Scherer/ Mueller, 1994). On the other hand, the conservation and environmental protection organizations provide important **incentives** for cross-border environmental policy. Together with the scientific community, they are a type of early warning system, that recognizes environmental problems at an early stage and above all makes them into a topic of general public discussion. The cross-border administrative committees are then often "forced" to deal with new environmental topics. This process has been clearly confirmed by officials of both the Upper Rhine region as well as the Lake Constance region: "Without the activities and the resistance of the conservation and environmental protection organizations, the activities taking place today in the environmental sector would not exist." This means that although both the conservation and the environmental protection organizations as well as the scientific community do not have any decision-making authority and only very limited implementation capacity, they are also responsible for the success.

Contrary to this, the participants in the political systems have played a rather small role in cross-border cooperation in the environmental sector. They usually only take the stage when it is a question of "high-profile" activities. Politicians usually deal with cross-border environmental protection when there are actual or potential environmental conflicts, when they make high-profile declarations about environmental objectives and programs (usually kept very general), and when there is a public presentation of information material or a festive kickoff of a concrete environmental program. Due to the great deal of attention that has been paid to cross-border cooperation over the past few years, these limited activities of politicians can be explained by the accounts provided by political economy. In an earlier study about cross-border cooperation in the Lake Constance region, D. Bullinger (1977) found a temporal relationship between the "substantially" increased efforts of political participants and the time of important elections. This demonstrates that cross-border cooperation - especially in the environmental sector - provides a good "stage", on which regional politicians can get high-profile publicity.

At the same time, the analysis of environmental policy in various European border regions has clearly demonstrated that individual politicians can make significant contributions to the success of a cross-border environmental project. When it is possible to convince a (regional) politician of the necessity to solve an environmental problem, and this politician makes it his/ her "issue", the chances of success increase considerably. This only applies when the politician has the necessary decision-making authority and when the environmental problem is suited to create a (public) reputation for the politician. It has been seen in numerous successful environmental projects in border regions that a politically powerful promoter can provide important services. However, it has become clear at the same time that this promoter has to rely on smooth-functioning cooperation with specialists or a specialist department. This demonstrates that cross-border **environmental policy** must be equated with cross-border **environmental management** in actual practice, because successful cross-border environmental projects are dealt with almost completely within cross-border administrative committees as a rule. Politicians only participate in this strongly specialist-

oriented cooperation processes when the process is not making any progress or when the cooperation result made internally is to be presented to the general public. This means concretely that the study groups and commissions where individual environmental problems are treated in a project-oriented manner have more responsibility for cross-border cooperation in the environmental sector than do the central cross-border committees. In spite of this, the central cross-border committees are also responsible for the success of environmental policy, because they have the necessary decision-making authority and implementation resources, which is not the case for most specialist commissions. The empirical analyses make clear that environmental policy can be successfully implemented in those border regions in which there are networks between project-oriented specialist committees and broadly oriented decision-making committees. In the creation of such decision-making committees (that only exist in a few border regions as of today), the INTERREG joint initiative played an important role, because the INTERREG steering committee often took over this function.

On the whole with respect to the system affiliation of the participants of cross-border environmental policy, the administrative systems plays a dominant role. The concrete cooperation processes take place in the administrative committees. However, the participants from the scientific community and especially from the conservation and environmental protection organizations are crucial for making cross-border environmental problems into issues that receive attention. The same applies to the politicians, because only they have the necessary decision-making authority. Consequently cross-border environmental policy is characterized by an interweaving of the various systems.

Participation of the Political Levels

The dominating role of the administrative systems in cross-border environmental policy exercises a strong influence on the participation of the various political levels in the cooperation processes. Environmental policy is an area dealt with on a national level as a rule. Consequently large sectors of the environmental administration are part of the national administration. On the other hand, the regional and communal levels only have very limited authority and available personnel. As a result, the central government usually exercises a very dominant role. Regional participants - at least in the administrative committees - are only marginally involved. Concerning the participation of the central government, a distinction must be made between the national level and the sub-national level. The empirical analysis demonstrated that great differences in authority substantially complicated the cross-border cooperation process.

Furthermore intrastate lines of conflict were seen in various border regions. These always occur when the sub-national or even the regional levels exercised great authority in environmental policy issues. The lines of conflict were drawn between the national level's sole claim to representation in foreign policy and the claim to representation in environmental policy exercised on the sub-national or regional levels. For example, the "International Water Body Protection Commission for Lake Constance" consciously waived the necessary new version of the treaty it is based on to prevent the federal level from influencing it on the German side (cf. Scherer/ Mueller, 1994; Blatter, 1994a). Such conflicts that exist (at least latently) in most European border regions can make the cooperation processes more difficult.

Regional participation from the administrative system is strongly dependent on the degree of decentralization of the respective national environmental policy, as has been demonstrated. The

situation is different for the participants from the political system and the conservation and environmental protection organizations. The regional levels dominate in these cases as a rule.

In conclusion the national administration can be identified as the dominating participant for cross-border cooperation in the environmental sector. It normally has the necessary authority and resources to solve concrete environmental problems. The cross-border cooperation of the administration is institutionalized very differently. The cross-border committees range from formal commissions legitimized by treaties to informal study groups, that are created to solve individual environmental problems. Basically a distinct segregation can be seen between the administrative committees of cross-border cooperation and other institutions of cross-border cooperation. This applies especially to the cross-border cooperation of conservation and environmental protection organizations, which also play an important role in cross-border environmental policy. There is normally no (institutionalized) exchange between these two networks of participants. The incentives that the environmental administration receives from conservation and environmental protection organizations are normally indirect via public relations work and information campaigns that the organizations initiate. Similar functions of providing incentives and acting as an early warning system can be attributed to the scientific community. This usually only has indirect influence on the concrete cross-border environmental policy. Besides the (successful) treatment of environmental problems in closed cross-border administrative committees, individual politicians also play an important role in the success of environmental policy. They can promote or even prevent the activities of the administrative committees. This demonstrates that cross-border cooperation in the environmental sector is characterized by a multifaceted network of participants, in which very different participants are interwoven formally and above all informally.

Environmental Policy Instruments

It is important to determine with which instruments the various environmental policy objectives can be achieved in characterizing cross-border cooperation in the environmental sector. A differentiation of the various environmental policy instruments is based on the respective control medium, because it can be assumed that specific participants in cross-border cooperation have special resources and authority with respect to the individual environmental policy instruments (cf. Scherer/ Blatter/ Hey, 1994: p. 22). The following categories of environmental policy control instruments can be distinguished:

- efforts undertaken by public administration itself (e.g. water sewage plants)
- legal instruments
- economic instruments
- knowledge-based instruments and persuasion

Within the framework of the empirical analysis of various European border regions, it was seen that the use of knowledge-based instruments is in the foreground of cross-border environmental policy. The use of legal instruments and the mutual undertaking of public efforts were less significant, and economic instruments were hardly used at all. Given the high degree of significance of the use of knowledge-based instruments in cross-border environmental policy, it seems necessary to specify these instruments more precisely. A basic distinction can be made between communication, information, research and public relations work. Preparation of reports and investigations are also included in this. Especially scientific reports often play an important role for cross-border cooperation in the environmental sector, because there are attempts in numerous individual projects

to make a concrete analysis of the actual environmental situation of a border region. These analyses are then the basis for further concrete measures. The various knowledge-based instruments have very different objectives. While information campaigns are mainly directed at the regional general public and consequently the direct causers of different environmental problems, the scientific reports as well as the recommendations and resolutions are primarily directed at the decision-makers outside of the region.

The use of different instruments is subject to a great deal of change. This can be seen in the Lake Constance region. In the first stage of cross-border environmental policy, numerous scientific investigations were carried out and various legal settlements were made concerning concrete environmental problems. Recommendations and resolutions also played an important role. However, public infrastructure and services have increasingly become the focal point of cross-border environmental policy since the beginning of the eighties, and information and public relations campaigns have been increasing in significance, especially over the last few years. A development in environmental policy can be detected here from a reactive, strongly controlling environmental policy to an active one with structural effects. Such a complementariness and substitution of efforts undertaken by public administration itself and legal instruments by "modern" instruments, that are communicative and knowledge-based, are considered a decisive evaluation criterium for a progressive and successful environmental policy in current discussions of environmental policy theory¹ (cf. Scherer/ Blatter/ Hey, 1994: p. 23). This development process of the use of instruments in environmental policy is taking place in very different ways in the various border regions. Balanced use of the different environmental policy instruments can be considered an indicator for progressive cross-border environmental policy. Consequently in a comparison of the European border regions, the **Rhine-Waal region**, the **Euregio** and the **Lake Constance region** can be stressed a model regions for progressive cross-border environmental policy, at least with respect to their use of instruments (cf. Leubuscher/ Hager, 1994; Scherer/ Mueller, 1994). Other border regions are in another stage of the development process sketched here concerning the use of environmental policy instruments.

The empirical analysis of various European border regions demonstrates that the environmental policy instruments can be concretely attributed to individual participants (cf. Leubuscher/ Hager, 1994; Scherer/ Mueller, 1994; Hey/ Betz, 1994). Fundamental statements can be formulated about the use of instruments by the various groups of participants:

- The instrument of **public infrastructure and services** is primarily undertaken by regional participants such as communities and also conservation and environmental protection organizations. Given the limited capacity of these two groups of participants, this is surprising at first glance. However, when examined more closely, it can be seen especially in communal projects that the economical allocation of public funds through cross-border cooperation is a decisive reason for cooperation. In the use of the environmental policy instrument of public infrastructure and services, it can normally be ascertained that it is a question of the solution of concrete environmental problems, that is either possible without substantial resources or makes sense from the point of view of an optimal allocation of public funds. However, it is usually not a question of a mutual environmental problem of the border regions, but rather an identical problem faced by the participating sub-regions.

¹ Compare the discussion about the modernization of environmental policy (e.g., Zillesen, 1993; Etzioni, 1975) and the discussion about communal environmental protection policy (e.g., Wollman, 1990; Blatter, 1993).

- Due to the jurisdiction for setting standards, **legal instruments** are only used by participants in the respective state or federal administration. It is interesting to note that the respective parliamentary committees often do not take part in the decision-making processes, and that the public administration uses its constitutional leeway to act. Legal agreements concluded by the state are of special significance for the founding of cross-border institutions.
- The use of **economic instruments** does not play any role in cross-border environmental policy. These can only be employed - when at all - by participants from the government. Economic instruments are not used in cross-border institutions, but rather in the respective sub-national committees making policy decisions, because the final authority for making decisions is often there. The INTERREG program brought a change here to a certain extent, because regional participants make decisions about the distribution of sponsorship money.
- Participants of the (sub-)national administration also play an important role in the implementation of **knowledge-based** instruments. It is striking that it is often a question of recommendations and resolutions concerning concrete environmental policy problems. Because these are usually directed at the political decision-making systems of the individual sub-regions, it can be assumed that the individual administrative participants require cross-border cooperation to improve their position in sectoral or vertical conflicts. Additionally, the participants from the administrative system draw up scientific reports themselves or sub-contract them, which form the basis for further cross-border measures. Existing scientific and research institutions in the Lake Constance region are used for this purpose, that provide the administrative system with the necessary information. Conservation and environmental protection organizations also use this instrument. They target the political system of decision-making on one hand, but target on the other hand increasingly the regional general public. They also attempt to get necessary information from regional research institutions, usually through informal cooperation.

In conclusion it can be stated that governmental participants of the administrative system play a dominant role in cross-border cooperation in the environmental sector. This is certainly the result of the fact that they have the necessary authority and resources to implement the various environmental policy instruments. But the regional participants are also very significant for cross-border environmental policy, because they contribute above all with concrete measures and work to solve environmental problems. However, it has been seen that ecological reasons are not (necessarily) the reason for this, but (also) economic advantages.

2.3 Results of Cross-Border Cooperation in the Environmental Sector

An evaluation of the results of cross-border cooperation in the environmental sector can be undertaken on one hand about the evaluation of the cross-border cooperation process (i.e. the **cooperation level**), and on the other hand by an **ecological evaluation** of the cooperation results. An evaluation of the cooperation level must be undertaken, because cross-border environmental policy can only be done through coordination and/ or cooperation across national borders and not through hierarchical control. Cross-border environmental policy entails substantial differences

in both various European border regions and various environmental problems with respect to the level of cooperation. Cross-border cooperation ranges from loose contacts to common planning and execution of projects. The various cooperation forms can be systemized according to the criterium of their intensity or progressiveness,² whereby it remains open whether more intensive cooperation results in successful cross-border environmental policy. Based on the empirical analyses, the following sequential levels of cooperation can be distinguished, whereby the transitions between the individual levels remain fluid:

- Information
- Consultation
- Coordination
- Joint actions

There are measures and projects in the actual practice of cross-border environmental policy that can be attributed to all the levels listed here. However, it was ascertained that there has been a substantial increase in the level of cooperation in cross-border environmental policy over the past years. This is certainly related to the INTERREG program, that strongly supported jointly executed projects and even forcefully demanded it. However, the cooperation levels listed here presuppose a high degree of positive cooperation, i.e., the participants in a border region want to solve an environmental problem working together. In the actual practice of cross-border environmental policy, however, conflicts occur again and again that cannot be dealt with using these cooperation forms. Consequently it is necessary to systemize the cooperation process of cross-border environmental policy with respect to its handling of conflicts. Based on the empirical analyses from various border regions, the following levels of conflict can be distinguished:

- Protest
- Legal Suits

A further possibility of dealing with conflicts in cross-border environmental problems was discerned within the framework of the two regional studies of Lake Constance and the Upper Rhine. If the existing environmental problems are compared with the concrete fields of action in cross-border cooperation, it can be ascertained that various environmental problems are not treated. Such ignoring of environmental problems takes place in both formal as in informal committees. There are no valid data concerning the significance that these non-treatment strategies in cross-border environmental policy. However, based on the evaluation of various experts of cross-border environmental policy, it may be assumed that these strategies are employed in numerous border regions to avoid conflicts. This means that cross-border environmental policy is usually characterized by a high degree of inability to solve conflicts.

The activities of the various groups of participants point out different levels of cooperation, whereby clear development processes can be ascertained too. Cooperation was limited to information, consultation, and coordination of the respective sub-regional administrative activities in most border regions in the past. However, public administrations are increasingly acting, developing, and implementing mutual action programs and measures. This intensification of the administrative activities is closely related to the improvement of the communication relationships and the establishment of personal relationships among the individual administrative participants. However, it can also result from an improvement of the framework conditions, as - for example - the

² Look for more detailed descriptions: Scherer/ Blatter/ Hey 1995

making available of additional personnel or resources. On the other hand, the situation is largely different for the regional participants (communities and NGOs). The cooperation level there is normally very high. This is certainly related to the proximity of these participants to the problems and above all to the instruments available to them.

With respect to the cooperation level of cross-border environmental policy, it can be summarized that a substantial intensification has taken place over the past few years. This especially applies to the groups of participants that have dominated until now, the state administration, but also to other participants. There is a close relationship to the INTERREG program in this respect.

Evaluation of Environmental Policy

An evaluation of cross-border cooperation in the environmental sector also has to take into account the (possible) environmentally relevant results of the various action programs and measures. An ecological evaluation judges the (expected) "profundity" and "extent of effects" of the environmental policy measure. The term profundity of effects describes the dimension of depth of environmental policy and is a gauge for the profundity of intervention in existing economic or societal structures and events. The term "extent of effects" helps to determine how many sectors and problems areas are affected by the instruments of an environmental policy measure. An ecological stage model was developed to make a concrete evaluation of environmental policy in various European border regions, in which the profundity and extent of effects increase from stage to stage (cf. Scherer/Blatter/Hey, 1994: p. 96). The following stages are differentiated, that correspond to different environmental policy models:

- Fighting symptoms
- Distribution of burdens
- End-of-pipe technologies
- Integrated environmental protection
- Ecological structural policy
- Ecological prosperity model

Basically it must be assumed that cross-border cooperation in the environmental sector usually involves only a slight profundity of ecological effects. As the empirical results of the comparative international study demonstrated, it is often a question of environmental policy measures that can be attributed to the profundity dimensions of "fighting symptoms" or "end-of-pipe technologies". However, numerous measures were taken in a few border regions that have substantially more profound effects and that must be ascribed to the profundity dimensions of "integrated environmental protection" or even "ecological structural policy". The already cited border regions of the **Rhine-Waal region**, **Euregio** and **Lake Constance** can also be mentioned here as model regions for progressive environmental policy, in comparison to other border regions. At the same time, environmental policy measures were carried out in numerous other regions that demonstrate a substantial profundity of effects, for example the **Upper Rhine structural model** in the German-Swiss border region or the **Rhine Auen Project** in the PAMINA region (cf. Hey/ Betz, 1994; Blatter, 1994b).

A consideration of the chronological development of cross-border environmental policy, that is above all based on the empirical insights gained in the two regional studies, demonstrates a clear intensification of cross-border environmental policy including the ecological profundity of effects. However, it also makes clear that cross-border environmental policy normally cannot

contribute to a general innovation of environmental policy.³ This evaluation is the result of the realization that a greater profundity of effects cannot normally be ascertained in measures of cross-border environmental policy than is already the case for measures in one of the participating regions. However, it has been demonstrated that an increase of the ecological profundity of effects is possible in one or several of the participating regions through cross-border cooperation and transfer. Cross-border cooperation in the environmental sector generates a transfer of progressive environmental policy and thus can contribute to a further development of national environmental policy. Consequently cross-border cooperation can be an important source of innovation for the further development of environmental policy in Europe. However, this only seems to be a possibility if the border regions have sufficient resources at their disposal and can carry out an independent environmental policy. In this context, it has been shown that the INTERREG program has indirectly contributed to the further development and intensification of environmental policy, because it made additional resources available to the border regions. These made concrete environmental policy measures and actions possible. On the other hand, the "catastrophe principle" formulated by *Prittwitz* (1990) is confirmed once again in this case, according to which a further development of environmental policy was not brought about by the respective environmentally-relevant problems, but rather by the resources available.

³ No rule without exception: At the international Lake of Constance we find measures that go even further than the corresponding measures within the participating nation states.

3 Factors of Influence on Cross-Border Environmental Policy

The results of cross-border cooperation on environmental policy are influenced by a number of different factors. The factors determine both the level of the cross-border cooperation and the ecological profundity of effects of the respective individual project. Within the framework of the comparative international study of various European border regions and also in the two regional studies ("Lake Constance" and "Upper Rhine"), it became apparent that influence cannot be attributed to any of the identifiable factors for the success or failure of cross-border environmental policy. The reason for that is that on the one hand different factors gain importance depending on the issue and the regional situation, and that on the other hand the constellation of the influencing factors matters (e.g. a certain form of organization cannot be considered as being always successful; the way of cooperation has to go with the problem situation).

It has been seen in the analysis of environmental policy in various border regions that cooperation in the environmental sector is possible and feasible given the identifiable factors in all border regions. Consequently there cannot be a simple distinction between successful and unsuccessful cross-border cooperation in environmental policy, one has to take into account, whether it is an "easy" and "difficult" cooperation. The difference between easy and difficult cooperation is above all determined by symmetry and asymmetry. If there is symmetry in a border region with respect to the interests (of causers and those affected), environmental consciousness, the available resources, and the respective authority, it is relatively easy to cooperate and a relatively high degree of cooperation is achieved without a great deal of cooperation effort and without many problem-solving resources. The situation is different for asymmetrical relationships across national borders. A great deal of cooperation and many problem-solving resources are required in this case. Consequently it is difficult to cooperate across borders and to achieve a high degree of cooperation.

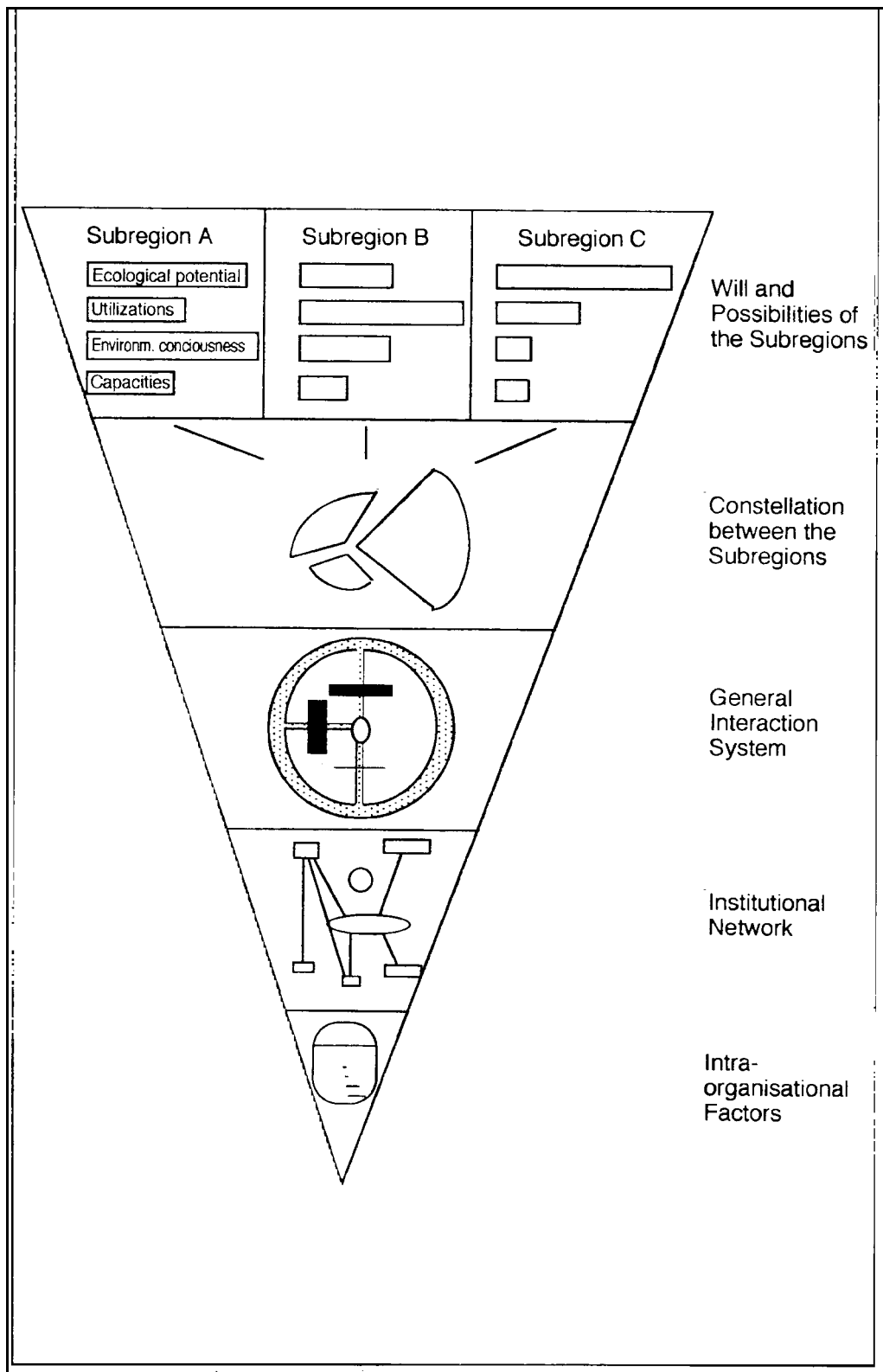


Diagram 1 Factors of influence on cross-border environmental policy (Source: Scherer/ Blatter/ Hey, 1994: p. 53)

The factors that influence cross-border cooperation in the environmental sector can be arranged according to a logical sequence. A model of the influences of cross-border environmental policy is shown below. The starting points for this model are the fundamental considerations about the general factors of cross-border cooperation as they were developed against the background of the discussion in political science concerning decision-making processes and the (earlier) empirical analyses of cross-border cooperation. This original model, as is depicted in Diagram 1, has proved to be very instructive.⁴ However, it must be supplemented and made dynamic. **The decisive insight is that the constellation between the sub-regions essentially determines both the cooperation structures and processes as well as the environmental policy output.** It must also be emphasized that it is not only the scientific, objective-ecological interrelationship type that determines the interests of the participants, but that the actual preferences for action and positions of the sub-regional participants are dependent on various constellation factors, and above all that perception and subjective appraisals play an important role. If there is a symmetry between the individual sub-regions in the constellation factors, cross-border cooperation for solving this environmental problem **can** be relatively easy. In asymmetrical constellations on the other hand, it is **probable** that a cross-border solution is difficult and requires a great deal of cooperation.

In the next section, the structures of individual factors are depicted and their respective ways of producing effects are demonstrated. The influence model of cross-border environmental policy developed in this context may not be understood as a static model that follows a strictly logical sequence. It is rather a dynamic model, in which several approaches are possible and that is above all dependent on feedback effects.

3.1 Sequential Model of Cross-Border Environmental Policy

The factors of cross-border environmental policy can be classified into the fields of concrete problem situations, the framework conditions, the course of the problem-solving process, and the implementation of a cross-border action program. It is obvious that the result of cross-border environmental policy is strongly dependent on the respective ecological problem situation, whereby there must be a distinction between the **objective environmental problem** and the **subjective perception of the problem**. The differing influence that the objective environmental problem exercises on cross-border cooperation is not the result of differences of the respective environmental medium, but rather of the respective ecological interrelationship types, as they were depicted in Chapter 2.

Perception of the Problem

This presupposes that an objectively existing environmental problem is also perceived subjectively by the individual sub-regions as such. This **subjective perception of environmental problems** is closely related to the environmental consciousness and the knowledge about the respective environmental situation.

⁴ See the explanations in Scherer/ Blatter/ Hey 1995

The environmental consciousness in the respective sub-regions is strongly influenced by cultural factors in this context. Basically, it must be assumed that recognizing a problem situation and the need to solve this problem is the basis for any (political) action. This stage of initiation, in which it is recognized in the political sphere that an environmental problem requires a solution, is the starting point for all cross-border cooperation in the environmental sector.

Cross-border cooperation is also influenced by the symmetry of the respective subjective perception of an environmental problem. But a distinction must be made between simple perception of a problem and recognizing that the problem needs solving.

If there is asymmetry in the way the respective sub-regions perceive a problem, this can be countered using information and knowledge instruments without a great deal of cooperation.

However, the situation differs in the case of recognizing the necessity to solve an environmental problem that is strongly influenced by the respective **ecological interrelationship** type. In environmental problems where there are symmetrical cost-benefit relations, the necessity of solving an environmental problem across national borders is recognized. The situation is different when there are asymmetric cost-benefit relations. There are also differences between the individual sub-regions in recognizing the necessity to solve this problem, whereby the great deal of cooperation required and the necessary problem-solving resources make solving the problem more difficult.

The differing evaluations of the necessity to solve an environmental problem is strongly influenced by different degrees of **environmental consciousness** in the individual countries. When these are clearly different, cross-border cooperation is made more difficult and the cooperation requirements increase. On the other hand, cooperation is made easier when the environmental consciousness is similar in the two participating sub-regions.

The differing evaluations of the necessity to solve an environmental problem and the subjective perception of it are strongly dependent on the spatial development objectives of the respective sub-regions. When there are great divergences of spatial utilization requirements between the individual sub-regions, there are many opposed interests in the individual sectors and even great differences in the evaluation of the necessity to solve the environmental problems. The situation in Alsace, France and South Baden, Germany present a good example of this with respect to the conflicts about the plate glass factory in Hombourg or the citric acid factory in Marckolsheim (cf. Hey/Betz, 1994). These asymmetrical spatial development perspectives and the consequent different evaluations of the necessity to solve an environmental problem make cross-border cooperation concerning these concrete environmental problems substantially more difficult. The solution of such an environmental problems requires a great deal of cooperation and many problem-solving resources from the participants. The situation is different when there are shared ideas about the spatial development of a border region, in the sense of a spatial planning concept or a regional model. It seems probable in this case that the necessity to solve an environmental problem is evaluated in a similar fashion in the respective sub-regions. This can simplify the cross-border solution of a problem.

It can be seen in this depiction of the subjective and objective perception of an environmental problem that the result of cross-border cooperation in the environmental sector is strongly influenced by the respective **policy input**. Existing symmetries or asymmetries make this cooperation "easier" or "more difficult", in that a different degree of cooperation and a different amount of problem-solving resources are required. How the framework conditions in the individual sub-regions

influence the necessity of cooperation and especially the resources available for the concrete solving of problems will be demonstrated below.

Resources and Jurisdiction

The **framework conditions** of cross-border environmental policy are formed by the **possibilities** that the individual sub-regions have to carry out independent environmental policy on one hand, and on the other hand by the **general interaction system** that exists across the national borders and between the respective sub-regions. The possibilities of the individual sub-regions depend on their resources for solving problems, which is derived from their economic power, the innovative and strategic capabilities of the political-administrative system as well as the institutionalization of environmental interests (cf. Scherer/ Blatter/ Hey, 1994: p. 52-53). At the same time, the jurisdiction to solve problems, that the various political level have, also plays an important role. The particular characteristics of the resources and jurisdiction in the respective sub-regions alone is not decisive for the success of cross-border environmental policy, but the constellation of these factors between the regions is the important point. Constellation means symmetry or asymmetry between the regions in respect to these factors. If the resources generally available for solving problems are unequally distributed among the sub-regions, cooperative actions are made substantially more difficult. The situation is similar for the jurisdiction in environmental policy of the various political levels. When there is limited compatibility of the respective political-administration areas of jurisdiction, common actions can be made more difficult. A good example of this is presented by the problems in establishing exhaust fume standards for boats on Lake Constance, where jurisdiction is divided very unequally and the centralism in Switzerland has made cooperative action in this issue much more difficult across the borders (cf. Blatter, 1994a).

The differences of problem solving resources and jurisdiction certainly make cooperative action to deal with environmental problems across borders more difficult. But they can also result in providing new impulses for environmental policy in sub-regions that have few resources. In such a case, there is a situation in the sub-region as described by *Prittwitz* (1990) in connection with his "catastrophe paradox". Environmental action is not corresponding to the acuteness of an environmental problem, but rather to the availability (provided by the cooperation) of technological, institutional, and financial resources.

This also explains the important function that the **INTERREG program** of the European Union has played for cross-border environmental policy. This joint initiative made substantial sponsorship money available to the border regions, that they could use for cross-border action projects. INTERREG also acted as an important stimulus for cross-border environmental policy, with which new projects could be carried out on one hand, and on the other hand necessary basic knowledge for solving (cross-border) environmental problems could be acquired. For example, in the Lake Constance region the INTERREG Program helped to make numerous investigations possible (e.g., a feasibility study about local public transport across Lake Constance and macrophyte cartography) and even sponsored concrete action programs (e.g., a research position for the eco-toxicology of Lake Constance and the Eriskirch Conservation Center) (cf. Scherer/ Mueller, 1994). It can be assumed that improving the general possibilities of the individual sub-regions can result in a substantial intensification of cross-border environmental policy and consequently make respective cooperation more simple. This even applies when the available possibilities are very different in the respective sub-regions.

Cross-Border Interaction System

In addition to the general **resources** and **jurisdiction for solving problems** of the different border regions, the success of cross-border environmental policy is greatly influenced by the **general interaction system** (cf. Scherer/ Blatter/ Hey, 1994: p. 54) that is present in a border region. This general interaction system especially promotes the stability of the cross-border cooperation relationships, including those in the environmental sector. However, it has been seen that close-knit **socio-economic interrelationships** between the respective sub-regions do not have an unambiguously positive effect and that a **cross-border regional consciousness** does not have any special significance either. Although both exist in greater measure in the Upper Rhine region than in the Lake Constance region, cooperation is clearly easier in the latter. But certain socio-cultural factors play a role, such as (a common) language, cultural homogeneity (affects the environmental consciousness), and history (although often only subliminally, it influences the atmosphere in the cooperation committees). These aspects indicate that cross-border cooperation must be anchored in the society to be effective. Existing problems and conflicts can make cooperation across borders more difficult in the long term, even when there are substantial institutional cooperation relationships. The relationship between Alsace and southern Baden is a good example. In spite of numerous institutions and events, cross-border cooperation does not seem to be strongly anchored in the consciousness of the population. The effects of the existing language differences and historical experience, that is especially negative for Alsace, reach all the way into cross-border institutions and make cooperation more difficult there.

Cooperation Structures in a Border Region

The **general cooperation structures** of a border region have a great deal of influence on cross-border cooperation in the environmental sector. They are also a measure for the institutional cooperation potential. A complete "set" of such cooperation structures helps to reduce the separation effects of borders, and results in border regions "only" having the same problems as regions within a country (cf. Blatter, 1994a, p. 72). However, it is not only the completeness of the general structures that is important, but also their **general orientation**. While all the cross-border cooperation at Lake Constance was focused on the environment, economic policy aspects always played a greater role in the Upper Rhine region.

Formal Institutions and Informal Networks

Another important institutional aspect involves the **cooperation type**. Within the framework of the comparative international study and especially the two regional studies "Lake Constance" and "Upper Rhine", it was determined that there are differences between **strongly formalized institutions** and **informal network relationships**. The analysis of cross-border environmental policy demonstrates that cooperative action is easier in informal network relationships than in a strongly formalized institutional structure. This positive evaluation of informal network relationships in a border region is a result of the fact that such structures react more flexibly to prevailing problems and that new cross-border committees can be formed without a great deal of expense and effort. Informal networks are able to recruit problem-oriented members without having to take sectoral or horizontal interests into account. In concordance with the political science theory of networks (for example, cf. Mayntz, 1993: p. 53), depoliticized (i.e., not overlaid with organizational self-interests or publicity interests of politicians) cross-border cooperation in "closed" circles of experts could be detected in cross-border environmental policy characterized by informal networks. The existence

of "epistemic communities" (Haas, 1990) is a special feature of the informal networks in cross-border cooperation. These are cross-border specialist committees with professional and knowledge-based orientation to problem solving (cf. Scherer/ Blatter/ Hey, 1994: p. 42-43). The opposite of these are the strongly formalized structures of institutions in border regions, that often only have limited capabilities to form committees oriented to solving problems due to their rigid organizations (often set down in treaties). The founding of such committees is very "politicized", i.e., the selection of the members is overlaid by the self-interests of organizations and the interests of politicians to obtain publicity. The formation of "epistemic communities" is not possible in strongly formalized committees.

However, the positive evaluation of a cross-border interaction system that is characterized by informal network structures must be made relative. Cooperative action is easy and usually produces the desired results when there are cross-border environmental problems with symmetrical cost-benefit relationships and when there are not any fundamental conflicts between the sub-regions. In this "cooperative" orientation of the cross-border networks, the expected mutual benefit is the main criterium for action (cf. Scharpf, 1992: p. 53). However, networks are not able to solve environmental problems when there are asymmetric cost-benefit relationships between the sub-regions that (can) result in conflicts. Such environmental problems seem to require strongly **formalized cross-border institutions**.

This demonstrates that the ascertainable factors are strongly dependent on the respective concrete **environmental policy problem** and the consequent **interaction orientation** of cross-border cooperation with respect to its **way of functioning**. However, it has also been demonstrated that the success of cross-border environmental policy is strongly dependent on the environmentally relevant framework conditions in a border region, whereby the constellation between the sub-regions of the resources and jurisdiction for solving environmental problems is of special significance. The concrete **problem-processing procedure** is greatly influenced by the framework conditions and the general interaction system of a border region.

This applies especially to the **concrete interaction system** in a special policy field, which forms the core of this problem-processing procedure. The concrete institution in which a cross-border environmental problem is to be treated, is strongly influenced by the general interaction system. This already points to the basic difference between a formalized institutionalization of cross-border cooperation and the creation of informal networks in a border region. This difference can be refined further with respect to the specific interaction system in this field. For example, a **problem-oriented treatment** of environmental topics can be detected in informal networks and a more **program-oriented treatment** in formal institutions of cross-border cooperation. The advantages of the problem-oriented treatment of environmental problems in informal networks are certainly related to the flexibility with which new committees can be formed and especially to the "depoliticized" composition of these committees. "Epistemic communities" play an important role here. In the empirical analysis of cross-border environmental policy, the Lake Constance region demonstrated that the positive effects of these problem-oriented treatments in informal networks are greatly limited (cf. Scherer/ Mueller, 1994; Blatter, 1994a; Schnell, 1994). Informal networks are exclusively suited to solving environmental problems where there is a relatively great deal of symmetry of the respective cost-benefit relationships between the respective sub-regions. These informal networks have not been able to achieve results in cooperation in other environmental problems with asymmetrical structures of interests across borders. This empirical insight confirms the theory in international environmental policy, according to which epistemic communities are only capable of consensus-oriented actions (cf. Haas, 1990: p. 228).

The treatment of environmental problems with asymmetric structures of interests between sub-regions appears to be easier in **program-oriented formal institutions**. Strategies of actively creating consensus can be more easily carried out in such committees. The formal committees can apply strategies with which cooperative actions can be achieved across borders. According to *Scharpf* (1978: p. 27), equalization payments, package deals, or bargaining processing are decisive in non-hierarchical negotiating systems, as is always the case for cross-border cooperation. However, these theoretical possibilities are only applied to a very limited extent in actual practice.

Instead, a strategy of systematically minimizing the consensus requirements is used. These strategies are used relatively often in numerous informal committees of cross-border environmental policy. These strategies are especially employed to reduce the complexity of the composition of participants (treating individual problems in internal study or specialist groups in the public administration) and the complexity of decision-making (dividing a project into several separate projects), whereby cross-border decisions are only required at the "interfaces". This is very clear in the treatment of environmental problems in the Lake Constance region. Ad-hoc work groups and individual sub-commissions are formed in which a small number of specialists deal with concrete issues (often only as "interface clearing houses"). This strategy of reducing the level of conflicts has at least strongly promoted the creation of epistemic communities in the informal cross-border networks.

If the implementation strategies in the program-oriented formal institutions or the reduction strategies in the problem-oriented informal networks do not result in a consensus, there is usually a postponement of the conflict in cross-border environmental policy. As *Scharpf* (1978: p. 28) formulated it in connection with horizontal political interrelationships, this is done by "maintaining the structure", "equal treatment", "conflict postponement", or "refraining from intervention". In the practice of cross-border environmental policy, these strategies for postponing conflicts have been employed very often. In the Lake Constance region, for example, controversial topics are not dealt with in the cross-border committees (e.g., the construction of an intermediate storage facility for nuclear waste or a hazardous waste disposal site).

Decision-Making Processes

How the topic-specific interaction systems actually function is strongly dependent on the type of **decision-making processes** that take place there. These decision-making processes are primarily characterized by the lack of hierarchical decision-making authorities. Consequently consensus must be brought about between the different territorial units as well as between the different sectoral participants to enable decisions about and implementation of measures. This means there is a great structural obstacle to environmental protection measures with a great profundity of effects, because there are more veto possibilities in border regions than within one country alone. This also explains why only "negative cooperation" has taken place till now between the different sectors or why the environmental projects can be run additively to other, growth-oriented projects. Where there is an attempt to implement intersectoral, environmentally-oriented measures, it can be seen how costly and time-consuming such efforts are (e.g., problems of boats; cf. Blatter, 1994a).

The **availability of problem-solving resources for a project** is an important factor in treating problems of cross-border environmental policy. These project-related resources are very closely connected to the general resources and jurisdiction for problem-solving in the respective sub-regions. It has already been pointed out that the success of cross-border environmental policy is

made substantially more difficult by existing differences in this area. However, the concrete process of treating problems is especially affected by the problem-solving resources available to treat a project. Within the framework of the comparative international study and especially in the two regional studies, "Lake Constance" and "Upper Rhine", it was determined that the result of cross-border environmental policy is greatly affected by whether those participants are involved in the decision-making process who also have the necessary authority to implement measures. If these participants are not involved in the decision-making process, the concrete implementation of a cross-border measure necessitates a very high degree of cooperation. Consequently the success of cross-border environmental policy is affected decisively by the composition of the cross-border committees. Given the very different participants who have the respective resources and authority for solving problems, successful cross-border cooperation seems to be easier in problem-oriented, informal networks than in formalized institutions with fixed groups of participants.

Implementation

It becomes clear here that the result of cross-border environmental policy is directly influenced by the respective process of treating problems. This influence especially affects the **implementation** of the respective environmental policy action program. It has been shown that the result of cross-border environmental policy is also strongly influenced by the selected procedure of implementation. Within the framework of the two regional studies, "Lake Constance" and "Upper Rhine", two basic types of implementation could be distinguished:

- Coordinated Implementation

An environmental action program is mutually approved within the cross-border committees. This program points to objectives regarding both their content and the time in which they are to be completed. However, concrete implementation is the sole responsibility of the individual sub-regions. In an ideal case, a cross-border committee is responsible for monitoring the implementation and coordinating possible "irregularities". A good example of this is the "Construction and Investment Program for Lake Constance" or the "Lake Constance Bicycle Path" (cf. Blatter, 1994; Scherer/Mueller, 1994).

- Mutual Implementation

The cross-border committees mutually pass and implement an environmental action program. This means that the cross-border committees must be responsible for both the financing and the project control. This normally involves a high degree of coordination and consequently a great increase of the complexity of composition of participants and decision-making within the cross-border committee. Exemplary models of (planned) mutual implementation of cross-border environmental projects are the concept of the "Regional Suburban Rail Network" or the "Free Space Concept" at the Upper Rhine (cf. Hey/Betz, 1994; Poetsch, 1994).

Both forms of implementation of a cross-border environmental program can promote or even prevent the success of the respective program. The selection of the suitable implementation procedure must be made according to the situation. However, it can basically be assumed that coordination simplifies successful implementation of cross-border projects with a high degree of complexity. This can result in a substantial reduction of complexity, because the necessary degree of cooperation is greatly reduced. This applies especially to environmental programs that want to achieve something concrete. On the other hand, the situation is different for knowledge-based environmental programs.

Mutual implementation across borders seems to simplify the use of such environmental policy instruments, without it being connected to an above average degree of coordination for the participants. Mutual implementation also seems to promote the success of an environmental program in the case of legal or economic instruments. This demonstrates that there is no "failproof recipe" for successful implementation of a cross-border environmental program. However, the suitable implementation method can be identified by proceeding pragmatically.

3.2 Conclusion

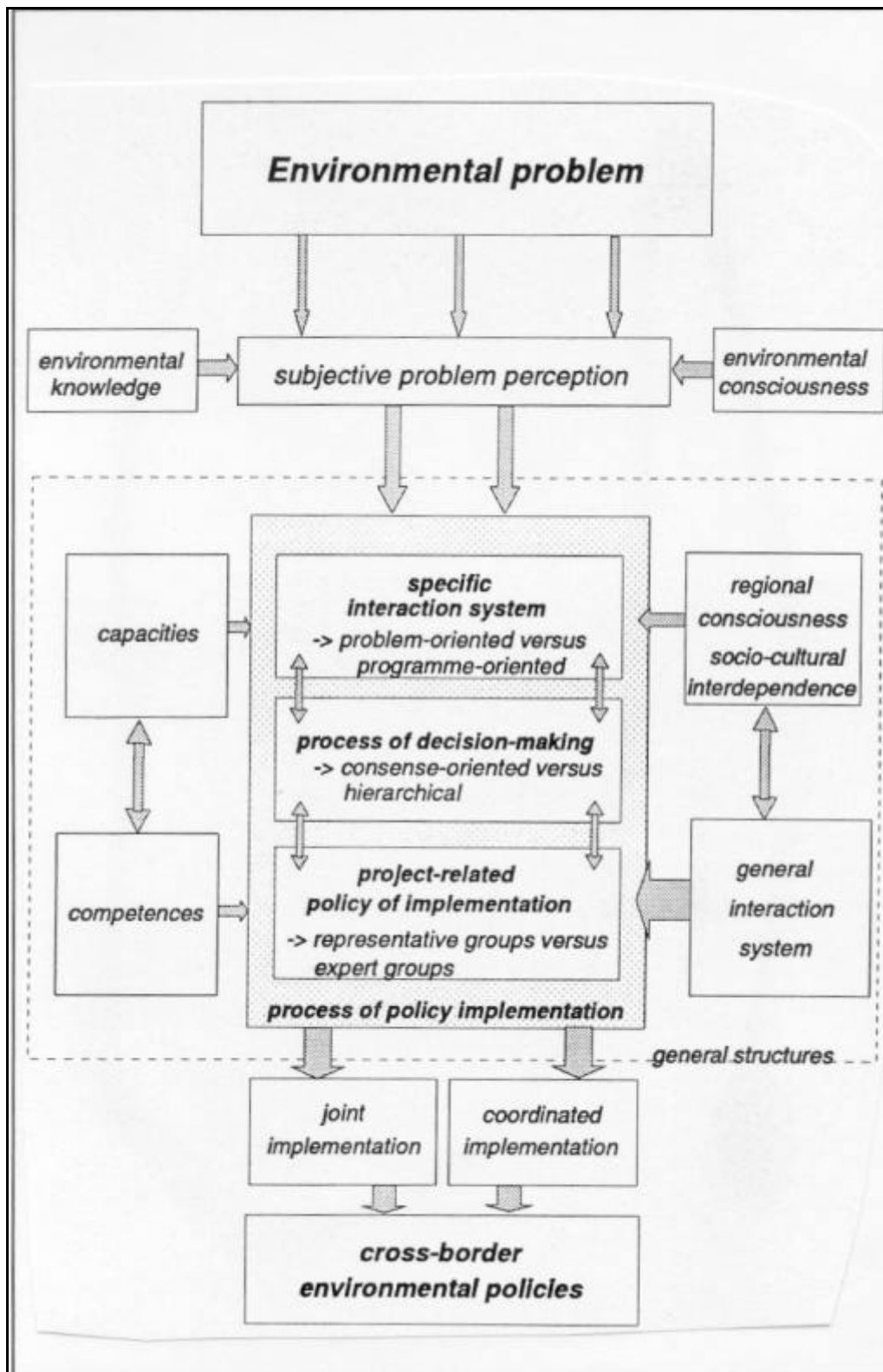


Diagram 2 Scheme of cross-border cooperation in the environmental sector

The result of cross-border environmental policy is influenced by a number of different factors. The individual factors operate according to a logical, sequential scheme. None of the factors depicted prevents cross-border cooperation in the environmental sector. The different factors either simplify cooperative actions or make them more difficult.

The model of influence sketched here is to be understood as a dynamic model, that operates according to a logical, sequential scheme (see Diagram 2). This means concretely that feedback to previous factors of influence is always possible and even necessary. However, it also means that cross-border environmental policy must not begin at zero, i.e., with subjective perception of an environmental problem. As the empirical analysis of cross-border environmental policy has demonstrated, other incentives can also be imagined that result in a cross-border environmental project. Concretely these are new resources and jurisdiction to solve problems that become available to a complete border region or even individual sub-regions. Important incentives for cross-border environmental policy especially came from the INTERREG program, after some initial difficulties. Especially in cross-border institutions, when the (announced) sponsorship funds were made available, "new" environmental problems became topics to be dealt with for the first time, and concrete individual projects for solving these problems were formulated and passed within a relatively short time.

However, important incentives for cross-border environmental policy also come from already existing cross-border committees. Especially in informal networks, in which problem-oriented committees can be formed very flexibly across borders, a tendency to "self-employment" can be seen. The "successful" conclusion of a mutually executed environmental program plays an important role here. Spurred on by this mutual success and the personal relationships that developed while working together, a "new topic", i.e., a new environmental problem is sought with which the committee can deal (cf. Blatter, 1994a).

The reduction of the multi-faceted factors with their different types of effects on the sequential model outlined seems necessary to identify concrete conditions of success for cross-border environmental policy and to formulate concrete directions of action for various (political) participants. However, these conditions of success can simplify cross-border cooperation in the environmental sector and help surmount existing difficulties.

The next section deals with how cross-border cooperation can be improved. This includes formulating concrete instructions for action for the participants on the various political levels, whereby the focal point is on the European and regional level.

4 Strategies for Intensifying Cooperation

Based on the insights gained until now about the characteristics and factors of cross-border cooperation, this chapter outlines how cross-border cooperation can be improved. However, it must first be remembered that cross-border cooperation is structured differently depending on the problem constellation and the general framework conditions.

It must also be remembered that the individual factors can be influenced to varying extents. The possibilities (jurisdiction and resources) of the individual sub-regions can only be directed to the necessities of cross-border cooperation under specific conditions and involving a great deal of time. The aspects of the general interaction system (socio-economic interrelationships, cultural and historical background) are also subject to very slow changes. There also seems to be an "objective" interrelationship type in each individual problem at first glance. However, when they are examined more closely, it is ascertained that new insights can "discover" new relationships, and consequently shifts of the relationships between causers and those affected can arise on one hand. On the other hand, it can be ascertained that "objective" effects do not necessarily determine the position of the participants, but rather sub-regional subjective perception and values. Consequently specific strategies for structuring cooperation arise from the area of scientific knowledge, perception, and guiding ideas, among other things. Complementary to this area of action, the concrete cross-border institutions, procedures, and instruments are to be considered and shaped. However, the role of individual personalities is not to be underestimated in a policy field such as cross-border cooperation. Hardly any influence can be brought on this, although there is a great deal of leeway in this still flexible policy field. It is also completely open whether these personalities have an environmental consciousness, or whether their involvement concurs with environmental protection interests one time and another time not.

4.1 Framework Conditions

An intensification of cross-border cooperation in environmental protection can be achieved by the following aspects, that refer to the framework conditions:

- Improvement of the jurisdiction and resources of the regional cross-border participants
- Intensification of the general societal integration of the border regions

4.1.1 Improvement of the jurisdiction and resources of the regional cross-border participants

Given the voluntary nature of cross-border cooperation, the "slowest" often sets the pace of cross-border environmental protection. Consequently the pivotal framework condition for cross-border cooperation is the **level of environmental policy of the sub-regions**. The promotion of an economic structural change, the development and integration of a societal environmental protection movement, as well as the creation of an efficient environmental protection administration and corre-

sponding legal standards in the sub-regions are also decisive conditions in border regions for mutual and successful environmental protection. Both in international (European) and cross-border environmental protection, the necessity of cooperation or unified measures are being increasingly mentioned as a strategic argument against national and (sub-)regional measures in order to block the latter. Consequently it must be emphasized that environmental policy progress (including individual efforts) in the participating border regions is the basis of successful cooperation in environmental protection.

Opening the Cooperation Structures

As it was clearly demonstrated in the case studies, cooperation across national borders is still determined by centralized national interests and participants (e.g., boat exhaust fumes regulations, channeling of the Upper Rhine, and railroad traffic; cf. Blatter, 1994a; Blatter, 1994b; Schnell, 1994; Poetsch, 1994). A legally-based **admission of participants on different levels** is significant for innovation in cross-border environmental protection. In many cases, this means a decentralization of authority. However, this is not an support of unconditional decentralization of authority. For example, the jurisdiction of the sub-national centers has substantial significance for maintaining the purity of Lake Constance, because they have practiced a more consistent environmental protection policy with their predominating protection interests against those directly located at the lake (communities). The implementation of the European Council Convention covering cross-border cooperation would be helpful for making activities on the lower level more accessible for others to participate (cf. Scherer/ Blatter/ Hey, 1994: p. 10). Drawing up and implementing treaties such as the "Treaty between North-Rhine Westphalia and Lower Saxony in Germany and the Kingdom of the Netherlands concerning cross-border cooperation among body politics and other public offices" of 23 May 1991 would help promote cooperation. However, such treaties are not decisively important everywhere, as the successful communal cooperation at Lake Constance demonstrates. The watering down of national standards that hinder special innovative solutions in regions would be more important (cf. licensing regulation for recreational boats on Lake Constance). Giving more flexibility to regions with respect to national and decentralized standards would be a step in the direction of a subsidiary distribution of jurisdiction, that allots authority to set standards to all levels with respective leeway to act.

Making Sufficient Resources Available

The sub-regions must not only have the resources to deal successfully with environmental problems and the legal jurisdiction to cooperate, but they must also have specific **resources for this cooperation**. Although synergy effects and better cost-benefit relationships are to be expected through cross-border cooperation, the cooperation increases the complexity and results in transaction costs. The funds to pay for these cost first must be acquired to initiate mutual actions. The cross-border use of these funds or the use of personnel competes with the use of them within a single country. However, the participants often profit from employing their scarce resources within their own region, because this provides a direct feedback to their "clients" (i.e., electorate) and can reduce the complexity somewhat. Two possibilities for overcoming this threshold for using resources for cross-border activities can be distinguished:

- The cross-border cooperation becomes a topic with a lot of prestige, with which someone can get a lot of publicity.

- Influence and financial resources can be obtained from the cross-border cooperation, e.g., from the INTERREG program

Both possibilities have been taken up and expanded by the European Union over the last few years. The integration promoted by the single European market and the "Europe of Regions" has become a guiding idea for stimulating actions. The INTERREG programs with their financial assistance for cross-border projects have triggered an enormous amount of action, a substantial part of which has benefited cross-border environmental protection (cf. especially the regional study about Lake Constance). The INTERREG program should be continued for this reason, whereby a few improvements are necessary that will be dealt with later.

4.1.2 Intensification of the general societal integration of the border regions

Factors of the general interaction system only play an important role in solving concrete cross-border environmental problems in specific cases. However, improving these factors can only produce positive effects for the specific cooperation. Although the factor of "socio-economic interrelationships" has not proved to be especially relevant, **historical, cultural, and linguistic circumstances** are of substantial importance in the concrete solving of problems. Efforts to promote cultural understanding and bi-lingualism are correspondingly important, as is the case - for example - in Alsace with a project promoting this involving a budget of 100 million French francs for 1994-1998. Other good examples are the French Center at the University of Freiburg⁵ and the German-French training of administrative personnel in Kehl. Mutual understanding of the other's language is essential for creating networks. The central aspects here are communication, openness, close interaction, personal relationships, and trust. In the same way as a mutual language, cross-border **media reporting** is relevant for successful cooperation. Besides the pure flow of information, sensitivity to the viewpoint of the other side is increased. In the two regions studied more extensively, substantial efforts have been made in this respect over the last few years, however without achieving any sweeping success. The bi-lingual Dreiland Zeitung published by the Basler Zeitung complains about insufficient distribution, and the establishment of the International Lake Constance News Agency was subverted by the private news agencies (cf. Hey/ Betz, 1994; Scherer/ Mueller, 1994). The significance of a mutual "openness" for the integration of a cross-border region justifies further and increased efforts of private and public institutions.

4.2 Basic Knowledge, Standards, Models

Far-reaching environmental protection measures always mean costs or intervention into existing utilization structures for symmetrical problem constellations in the sub-regions and even more for asymmetrical constellations. In order to obtain the funds to meet these costs or implement these interventions, agreement has to be achieved about the objectives as well as some certainty about the problem and the solution of it.⁶

⁵ Cf. also the corresponding demands of the Southern Upper Rhine Chamber of Commerce in Dreiland Newspaper, 3 Nov. 1994.

⁶ The preconditions are not so great for cross-border "production projects" that are not so far-reaching, such as "Seehas" at lake Constance, because there can be synergetic cooperation even when there are different objectives and motives (cf. Schnell, 1994)

Knowledge about Environmental Problems

Environmental organizations and scientific research have produced the most important findings about environmental problems and the solution of them. The openness of cross-border institutions to these is consequently a pivotal precondition for innovative cross-border environmental protection. An institutional integration into the "official" cross-border institutions is not necessarily to be demanded, but rather a procedural integration. This can be done through integration into study groups, invitations to conferences, joint running of events, or by requests for stances on programs and models, among other things.

Environmental protectionists and scientists often **deal with problems** individually. These problems must be set on a broader agenda, the solutions must be generalized, checked, and made capable of consensus to become guides for action. The question is first raised of whether the same (or at least similar) viewpoints concerning the problems and objectives exist across the borders or not. In the latter case, cooperation has to start at a much more fundamental stage and requires a long-term perspective.

The integrating and networking of regional research institutes as well as cross-border measurement programs are indispensable in the producing, **checking, and dissemination of knowledge about problems**, although they are not sufficient in themselves. Among other things, broad-based symposiums, workshops, and interdisciplinary research projects are necessary. These should not only cross national borders, but also cross the systematic borders between the scientific system, the political and public administrative system, and the social system as well as the sectoral boundaries (e.g., between environmental protectionists and those who use the environment). In this way, the epistemic communities (Haas, 1990) would not be limited to just a small scientific circle. The creation of an international "intermediate" organization, such as the Joint Committee of Waterworks, has proved to be especially powerful. It has both the advantage of surmounting the most different borders as well as the reputation of a "neutral and objective" admonisher.⁷

Existence of Models

The discussion of a problem is not sufficient to precipitate mutual actions. This also requires a setting of objectives. Consequently the question arises about the sectoral and spatial **models**. Doubtlessly specific models in the sense of "campaign slogans" can be considered important stimuli for joint activities (e.g., "Salmon 2000"; cf. Blatter, 1994b). The spatial model strategy on the other side is disputed. It competes with the project-oriented strategy (cf. Hey/ Betz, 1994: p. 70; the same applies to the Euregio MaasRhein: Reis, 1994: p. 38). The proponents of the "project strategy" hope there will be a "locomotive function" for the whole region created by the pragmatic development and rapid implementation of individual projects. Successful projects create additional motivation for other projects and measures. The Lake Constance region provides examples that support this strategy. Both in the protection of water bodies (from building joint waste treatment facilities to holistic strategies of eco-systems, from the "boat exhaust fumes" working group to the reactivation of the "Liegeplätze" working group) and in local public transport (from "Seehas" to expansion of cooperation on other lines), the success of individual measures and programs produced the motivation and cooperation structures for further activities (cf. Blatter, 1994a; Schnell, 1994). The proponents of the "model" strategy fear that the project strategy will result in a random selection of measures without incorporating them into a future-oriented framework of

⁷ The accident in Schweizerhalle or the high waters in the winter of 93/ 904 and 94/ 95 have proven to be extremely effective stimuli for mutual perception of problems, although these stimuli are neither desirable nor capable of being produced by man.

spatial reference. This would tend to produce contra-productive results for the region (cf. Reis, 1994: p. 38). This position is legitimate from an environmental perspective, because the project strategy is more growth-oriented and neglects the relationships in the eco-system. Consequently a linkage of both strategies should attempt to compensate for their respective disadvantages. The model to be developed can serve as a "guard-rail" for the individual projects when applied generally. This should above all guarantee that unsuitably large (infrastructure) projects are not pursued further and that environmental protection is not only used additively to "growth projects" in the cross-border development conceptions. Regional models also have additional functions, especially with respect to the promotion of regional consciousness and the motivation of the regional population for the development of the region.

Consequently the model plays a certain restrictive and corrective function, whereby this character must be softened a bit to allow innovative and adapted development concepts and to be accepted generally. There is also a generally suitable example (though it could be improved) for this at Lake Constance: The "International Model for the Lake Constance Area" that was passed by the German-Swiss spatial planning commission in 1992. A new version of this was passed by the International Lake Constance Conference in December 1994.

Unanimity concerning Solution Strategies

Even when there is consensus in cross-border committees about the general problem definition and the objectives, problems can always arise when there is no specific data concerning the situation in individual sub-regions, when this data is collected using different methods, or when there are differences concerning the problem-solving strategy.

The difficulties that arise in collecting and **comparing data** demonstrate that the participants realize the significance of neutral data for the consequent actions and partially attempt to already set the course on this cooperation level. Consequently the significance of long-term, standardized, or comparable recording of data not to be underestimated.

More far-reaching **problem-solving strategies** (cf. Scherer/ Blatter/ Hey, 1994: p. 20-21) require proof that superficial strategies only result in shifting problems or have too narrow a range of effects (e.g., catalytic muffler and sewage treatment facilities). It became obvious in the empirical analyses that it has only been possible to achieve unanimity in cross-border cooperation employing generally accepted (usually only technical) strategies. This underlines the significance of the "state of science" and the "state of technology". The integration of non-technicians (e.g., ecologists and social scientists) in cooperation committees⁸ and the creation of "problem-solving identities" in cross-border study groups are strategies that can result in innovation, so that the cooperation is no longer limited to agreements on the lowest common denominator but also continues to develop into an innovation pool.

⁸ The WWF Auen Institute in Rastatt, Germany provides a good example of such an interdisciplinary group.

4.3 Institutions, Decision-Making Mechanisms, and Conflict-Solving Mechanisms

The institutional integration of cross-border regions has been and will be in the future contrary to national and communal sovereignty claims. Simply demanding to merge areas does not seem to promise any success and even could be counterproductive.⁹ Even if such mergers could be implemented, they cannot be termed meaningful since they only create new borders.¹⁰ The only suitable method is **multi-faceted and cascade-shaped cooperation in a multi-level system**. This means that the spatial borders of cooperation must be problem-oriented and flexible. The model discussed using the term "variable geometry" is more oriented to a multi-faceted set of joint authorities and study groups (inter alia) with differing compositions and less to fixed structures of administrative units. Cooperation in a multi-level system means that specific problems can and must be treated in different cooperation structures. For example, the issue of commercial zoning can be dealt with in governmental conferences (large area development perspectives, information and participation rights), in planning commissions (optimization proposals of specialists), in communal conferences (agreement on details and synergy effects), and in public meetings with participation of the general public. The linkage between these levels is established by individuals, personal networks, and in public debate.

The most recent recommendations for regional cooperation across (German) state boundaries in agglomeration regions are in this sense: Scharpf/ Benz (1991) for Hamburg and Schleswig-Holstein, the articles in the volume by Hoffman/ Dill (1993) for Berlin and Brandenburg, and Fuerst/ Mueller/ Schefold (1994) for Bremen and Lower Saxony.

Networks as an Opportunity

The case studies demonstrated that specific (production and coordination) tasks can also be accomplished relatively successfully using "soft" cooperation structures and mechanisms, i.e., with networks. But it has become clear that conflicts or problems with asymmetrical constellations of interests have only been treated very insufficiently until now. Strong institutions and fixed procedures for solving problems are necessary to do this. **Consequently different types of problems require different treatment mechanisms and structures**. There is no general ideal institutional solution, because the basis of informal networks, personal relationships based on trust, would be destroyed if these network-type committees were delegated very controversial political topics to deal with. These committees have safeguarded themselves against such by not dealing with such conflicts, for example the spatial planning commission and the regional conferences (cf. Scherer/ Mueller, 1994). In committees that are prepared to deal with such controversial topics (e.g., the Upper Rhine Development Commission) on the other hand, an innovative problem-solving climate could thrive. But such a problem-solving climate is a precondition for the pragmatic and rapid implementation of new concepts and projects (cf. Blatter, 1994b).

These insights lead to the conclusion that cross-border cooperation structures and mechanisms in institutions have to be differentiated. The existing cooperation committees have already started to implement this in their structures, for example, by usually distinguishing between three

⁹ As happened with the publication by the Karlsruhe Chamber of Commerce in its provocative scenario of a merger between Alsace and Baden to a "Euregio" (cf. IHK Karlsruhe Chamber of Commerce, 1993).

¹⁰ Such new territorial political units are only objectively meaningful where there are obvious unequal relationships between the socio-economic interrelationships and the size of the political-administrative units.

organizational levels. The upper level is composed of meetings of delegates involving legitimate political representatives, who can make general decisions. A "standing commission" functions below this as the preparatory and coordinating management level. Finally there is the level of study groups, which takes care of the concrete conceptual and operative tasks. The less controversial the topic, the more important is the conceptual ability of the study groups, especially when external specialists and those affected are integrated into the project.

Functional Differentiation of Institutions

This **functional differentiation** would now have to be substantially **expanded** and the **respective institutions and mechanisms have to be optimized** regarding their special function and tasks. The institutions can be improved using this objective. New mechanisms are to be introduced in the area of solving conflicts, because the biggest deficiencies are still here. The temporal differentiation between initiation of the different cooperation institutions and mechanisms is also important. Most tasks of cross-border cooperation (in environmental protection) have a mixed character between a production or development problem and a distribution problem (cf. Benz, 1994). First the question arises what has to be done and then the question who has to contribute what. "Separate treatment of these two problems not only makes sense analytically, but is also useful for practical reasons" (cf. Benz, 1994: p. 263). The experts in the informal study groups should first define the necessary measures, and only then should the questions of burden distribution be dealt with on a "higher" cooperation level.

Before the possibilities of preventing and surmounting conflicts are discussed, a few considerations and proposals about improving the decision-making capability of the central representation committees and the ability to reach a consensus of the production-oriented study groups are presented below.

Decision-rules

The **decision-making capability of the sectoral commission and the governmental conferences** are restricted by the unanimity rule. Until recently it was almost unthinkable that national participants would comply with a decision of an international committee against their own interests. However, the Maastricht Treaty introduced majority rule in some fields of the EU, that provide a stronger basis for this majority principle. It is not so easy to apply this to bi- or tri-lateral regional cooperation. However, the creation of a pluralistic round table composed of independent participants from various levels and systems could actually become an idea capable of discussion in the long term with an intermediate step in which the national "blocks" of the various participants of a sub-region would have to be eliminated. In addition to (qualified) majority decisions, arbitration resp. mediation could also be a way out of dead-end situations. Such arbitration procedures are contained in older treaties (e.g., development of the upper Rhine and cross-border sewage treatment facilities at Lake Constance), although they have never been used. However, the "shadow of the hierarchy" might stimulate the participants' readiness to compromise. Another possibility for surmounting decision-making blockades is an "arena switch". As became clear in the case studies, there are a number of overlapping committees in border regions with respect to the territory for which they are responsible. They have different members with respect to sectoral responsibility, territorial integration, and the levels included. When a decision cannot be reached in one committee, the topic could be shifted to another "arena" where new perceptions and interests or the exclusion of them might result in a consensus. However, this presupposes a hierarchical

constellation between the two "arenas" for decisions about regulations (e.g., emission values), that necessarily must be binding for all. Otherwise the arena switch can only fulfill an initiation or negotiating function (cf. the case study about boat exhaust fumes at Lake Constance, Blatter, 1994a). In projects in which not everyone necessarily needs to participate, the same effect as an arena switch can be achieved when the non-participating sub-regions does not obstruct the other by refraining from cooperation.

Cost-Benefit Distribution

There are also a few (theoretical) possibilities to achieve cooperation even given asymmetrical cost-benefit distribution. For example, this can be achieved by **cost-sharing**, compensation payments, or "package deals". However, all these possibilities to balance asymmetrical constellations have proved to be difficult to implement. The financial participation of those affected by environmental damage in the protection measures of the causer can be a suitable option (perhaps the only one) for those affected under certain circumstances. It can even be the only option to improve the situation when the costs for the measure to the causer are fewer than one's own repair costs. However, the violation of the causer principle undermines the norm-oriented strategy about the establishment of standards and rules about "fair" and "neighborly" behavior and corresponding acts by the causer. It also provides egoistically-oriented protagonists a stimulus to practice damaging behavior, because this is a strategically clever initial position for cost-sharing negotiations.

Compensation payments, that the causer could pay to the person suffering damages, are easier to find (for example, the company operating the Leibstadt nuclear power plants pays the bordering Germany community, Dogern, for a few infrastructure facilities). This is not without problems from an environmental policy viewpoint, because its selective application does not lead to the desired result (stopping the pollution) and only takes organized interests into consideration. They cannot solve conflicts of values (cf. Oikos, 1994).

This same applies in part to some "**linkage deals**" or "**package deals**" that means the mutual externalization of costs and prevent the internalization of these costs. For example, this especially applies to exports of waste products to "less strict" sub-regions. In addition to these normative problems of package solutions, there are also substantial obstacles that practically restrict the use of this strategy.¹¹ Package solutions only seem to be applicable within one policy field (equivalent participants), whereby such a package is then usually not formally sealed by a contract, but rather in the sense of an informal expectation that "the next time" project with the opposite distribution of costs and benefits will be accepted by all (cf. local public transport projects at Lake Constance and the DSRK recommendations for protecting the ground water at the upper Rhine). This means that mutual trust and the continuity of contacts and participants are of great significance.

Legitimization of Cross-Border Cooperation

It is presupposed in these considerations that these general, intersectoral cooperation committees will not be able to solve conflicts with contradictory interests, such as the construction of a nuclear disposal facility that only benefits one side but only is threatening for the other. Such topics should be externalized to be dealt with in specific procedures. However, the general

¹¹ A detailed analysis of these obstacles can be found in Meyer, 1994.

cooperation committees should be capable of surmounting gradual differences of interests and especially to produce intersectoral focal points (general orientation decisions), location decisions, and facilitate coordination (between sectoral committees). These are not easy tasks and require a powerful decision-making mechanism. But in addition to the ability to make decisions, acquiring the **legitimization** for such tasks is a pressing necessity. Legitimization is primarily acquired by filling committees with directly or indirectly elected persons, whereby the partially only indirectly elected political head of the executive have a controversial position here. This legitimization aspect restricts the openness of these "general cooperation committees", because the orientation decisions cannot be made by randomly composed or self-appointed committees.¹² However, legitimization can also be created by transparency, openness, and participation possibilities. The cross-border committees have an enormous deficit in this respect, that should be reduced using "communicative instruments" (Blatter/ Fiebig, 1991) that include effective participation chances. While more attention should be paid to clarity, political representation and consequently more "unity" and "ability to act" in filling committees, openness and wide-ranged participation should be in the foreground in the cooperation process. The temporal sequence of the integration of the cross-border and intersectoral interests and participants is also pivotal. For successful environmental protection, it seems important that a cross-border, environmentally-oriented "advocacy coalition" (Sabatier, 1993) first be created, that creates specific problem definitions, "path dependencies" and pressures/ constrains and afterwards cooperates intersectorally (with the users/ causers or their administrative advocates). That would be another temporal sequence as it is normal today: Nowadays before one meets in the international round, each national group of participants matches their positions to speak with one national voice.¹³

While these representative cooperation committees are to be given the capability to bring about cooperation in projects with zero sum character (i.e., the benefits of one partner correspond to the costs of the other) or at least in projects with unequal profit (e.g., the locating of a company or institution that affects the whole cross-border region positively, but provides the most advantages at its actual site), **study and project groups** are mainly involved with taking care of "positive sum games" (e.g., the coordination of infrastructure facilities) in the most **innovative, smooth, and efficient** fashion possible. To do this, it is necessary to create identification with a mutual objective, a high degree of interaction, and mutual trust. Little turnover in personnel, language ability, and the acceptance and promotion of "social events" to strengthen personal relationships and mutual understanding are the starting points with which the networks can be strengthened.¹⁴ The informal character of cooperation enables an open definition of tasks that continues to develop and flexible integration of external participants (environmental organizations, users of the environment, environmental helpers). These two possibilities should be taken advantage of to a greater extent. They not only strengthen ability to achieve consensus and innovation, but all improve the implementation of cross-border measures.

¹² It is not by chance that there are debates about the legitimization of the "Euregio committees" at the upper Rhine and Lake Constance, because besides individual politicians only selective interest groups are integrated in it. On the other hand, there are no legitimization problems in the classical EUREGIO (Gronau), because the Regional Council sponsored by the community is composed of indirectly elected members of the communal parliament (statements made by Jens Gabbe at the AEGEE Conference, "Europe of the Regions" in Constance on 18 November 1994).

¹³ Whether these recommendations can be generalized appears to be a very interesting question from a theoretical viewpoint and is probably to be evaluated rather skeptically. The dissolution of territorial units and their replacement with intersectoral integration tasks tends to make the positions on the supraordinate levels irreconcilable. Group or intersectoral conflicts become more acute. Theoreticians of federalism emphasize that the decentralized units in multi-level political institutions in the group and sectoral interests perform integrating tasks.

¹⁴ It must be made clear that such networks always run the danger of becoming isolated cliques, and then are no longer open to other opinions or innovations. Generally there is always a middle path. However, first a few steps must be made to create the "social adhesive" in border regions that lets cooperation function smoothly.

"Production-oriented committees should not be used to deal with problems that involve a completely one-sided constellation of causers and those affected and consequently result in substantial conflicts, because this would result in tension and finally in a "blockage" of these cooperation channels. The solution of such problems should be dealt with by one's own procedures and institutions. However, these can be initiated and institutionalized by the general cooperation committee.

Conflict prevention is possible using **planning cooperation and by requiring that information be provided at an early stage**. A strengthening of cross-border spatial planning is to prevent unsuitable utilization ideas in the future and perhaps also to defuse existing opposing zoning ordinances (e.g., at the Upper Rhine). A few steps have already been made at the Upper Rhine. A more far-reaching strategy in this direction is the "Upper Rhine Structural Model", that is currently being worked out by the Upper Rhine/ Lake Constance Regionalverband (regional planning authority) and the Swiss canton of Aargau (cf. Hey/ Betz, 1994).

Participation-Friendly Procedures

Spatial planning cannot prevent all conflicts. Conflicts involving infrastructure facilities, locations, and technologies have to be solved and legitimized according to a general and the most **participation-friendly procedure** possible in border regions in the same way this is done in regions within a single country. In border regions, it is a question of giving the foreign citizens and institutions the same participation rights both before the decision is made as well as to appeal it (in court) as citizens and institutions of the own country have. Concretely this means informing and allowing the participation of "representatives of the public interest" in licensing procedures and the admittance and equal treatment of foreign plaintiffs in court (concerning the legal aspects, see Reh binder, 1987; Woehrling, 1987; and Wildhaber, 1987). In these strategies, which have already been implemented to a great extent, it is a question of **reducing the filter effect of borders and granting equal rights to the population of border regions** as the population in regions within countries has (concerning the most recent developments and the practical problems, see Droste-Hülshoff, 1994). In addition to making rights of the border population to defend itself equal, a mechanism for solving conflicts between the sub-regions and their political representatives must be found in border regions. This is especially the case because contrary to the cross-border (potential) damage, the other side does not benefit (taxes from companies or infrastructure services), so that there is always a negative cost-benefit balance for those affected. Consequently in addition to the defense rights, a mechanism must also be installed that can initiate a **benefit compensation** (corresponding to the horizontal and vertical financial compensation payments) and make them binding. This means transfer payments of the causers to those affected at least matching the amount of damages. The ecological steering effects are then the result of the fact that this means an internalization of costs, which leads to renouncing some matters and to ecological improvements. Experience from the Basel and Geneva regions demonstrates that such regional cross-border transfer payments are possible. However, cross-border conflicts not only arise from unequal cost-benefit relationships, but are often the result of different values in the sub-regions. This then means that even a normal and correct procedure in a region with less appreciation of environmental protection (weaker environmental standards) does not bring about the necessary legitimization in the other sub-region with a higher estimation of environmental protection. Because it is a question of a conflict of values, purely financial negotiations are not appropriate. Rather it is a question of creating arbitration procedures such as mediation (cf. Schnell, 1993). Because these procedures are currently being introduced in a few western countries in location conflicts parallel and preparatory to the normal decision-making procedure, they are also realistic

conflict-solving mechanisms for the border regions. The final jurisdiction about the decision would remain at the sub-regional/ national authorities (cf. Oikos, 1994).

4.4 Instruments and Cooperation Intensity

In conclusion the stronger operative aspects of cross-border cooperation in environmental protection must be mentioned. On one hand it is a question of the expansion and modernization of the use of instruments, and on the other hand the question about which cooperation form or cooperation intensity is appropriate to cross-border environmental protection measures.

The demand for **expanding and modernizing the range of instruments** available to the state is derived from the debate about and research into successful environmental protection (cf. Scherer/ Blatter/ Hey, 1994: p. 22-23). This means that the "classical" instruments of public infrastructure and services (e.g., sewage treatment plants) and legal instruments (e.g., emission limits) should be expanded by the increased application of economic and knowledge-based or communicative instruments and in this way the government actions are modernized. This demand can also be applied to cross-border cooperation, especially since the more modern and "softer" instruments (money and knowledge) can be used region-specific more easily than legal standards, which sometimes face opposition between the standardization within a country and across borders (e.g., boat exhaust emissions; cf. Blatter, 1994a). However, it must be emphasized that these softer instruments are not a substitute for "hardware measures", public infrastructure tasks and legal norms, but rather are only to achieve an improved control effect and assure acceptance (cf. Blatter/ Fiebig, 1991).

In the question about the cooperation form or intensity, the prevailing current opinion is that a model of very strong integration and consequent centralization and hierarchization is not desirable on any level (European, national, agglomeration). Rather the idea of a decentralized and "**autonomy-preserving**" (cf. Scharpf, 1994) **cooperation** is promoted according to the principle, "So much together as is necessary, so much independently as is possible." Although substantial problems arise from this (weaknesses of decision-making, lack of transparency, and complexity), the advantages seem to outweigh the disadvantages and other alternatives do not have any chances of being implemented. The same applies to cross-border regional cooperation. International treaties do open up more integrative cooperation forms (joint authorities) to the communal and regional participants. However, the following pattern seems to be establishing itself in the regions investigated and thus sufficient for most tasks: strong integration in preparatory activities for decision-making, i.e., mutual financing of reports, inter alia; coordination of objectives and programs, but separate implementation when possible of the concrete "hardware" measures. On the other hand, the selling, i.e., public relations work, of the initiated projects and programs should be structured jointly to strengthen the mutual identity internally and externally.

5 Recommendations to Political Actors

5.1 Recommendations to the European Union

The European Union has created substantial problems for the border regions with its strategy of continental integration through liberalization and mutual recognition without a previous alignment (harmonization) of norms and standards. The freedom of the mobile factors (labor, capital) has quickly outpaced the coordination possibilities of the administrative system, so that a lack of control has arisen that can result in substantial confusion in border regions. Because the EU precipitated the increased interactions and interdependent relationships between the regions, it also has the responsibility to help the border regions in overcoming this problem. The primary and most important help is the insight that the liberalization objective is a mid- and long-term goal, and that the **protective function of borders must be recognized** and only dismantled at a slow pace. Furthermore the EU must help border regions to **surmount the character change from borders as barriers to borders as contact zones** (Ratti, 1993) **in both a socio-cultural and a political-administrative sense**. The objective cannot be the "open border", because this endangers the concept of identity of the sub-region and its continued existence. Rather the objective should be the concept of the **"border as a filter"** (cf. Ratti, 1993: p. 244), that ensures a balanced mixture between openness and self-determination/ differences. The guarantee of autonomous, independent action is of eminent significance for progress in environmental protection, in order not to become caught in the "Politikverflechtungsfalle" ("trap of political interrelations, interaction, interdependence"; Scharpf). The result would be decision-making blockades and agreements on the lowest common denominator.

Border regions could serve as **transmission belts or innovation hinges** for ecological progress. However, this function cannot be always guaranteed. It became obvious in the case studies that an functionalistic shortcut (abbreviation) according to which the environmental policy integration would automatically follow the socio-economic one had little basis. Differences in the norms (environmental consciousness) and in specific interests and also a deficient interaction system result in a substantial lack of actions. There are various approaches for the EU here.

While the **alignment of values and standards** (or the tolerance of others) is being improved by the general strengthening of international communication, specific promotion strategies can also ensue from the EU such as they have already been considered in the INTERREG II program: sponsorship of language programs, exchange programs, as well as cross-border media reporting. The EU has realized that socio-cultural aspects are at least as important as the "hard" economic or infrastructure aspects. This should now find more universal application in its programs.

However, the role of the EU is more important with respect to the other two obstacles: contradictory interests and deficient interaction systems. By **making financial means available** for cross-border cooperation projects, the implementation of such projects is triggered, as the INTERREG program demonstrates. This reduces distribution problems, because even projects with not totally symmetrical cost/ benefit relations become "positive sum games" for all regional participants thanks to the

external funds. However, it would be desirable to avoid using the funds for questionable projects (for example, the fact that in INTERREG I more than three times the amount of funds in Spain and Portugal were used in road construction, which is incompatible with protecting the environment, than in all other projects together; cf. Leubuscher/ Hager, 1994: p. 60) and to concentrate these funds on more specific problems. On one hand, this necessitates a more thorough evaluation of the INTERREG program and the requiring of an environmental impact assessment for cross-border measures (for all measures, not only for the large projects affected by the national EIA laws), so that present phenomenon such as collateral effects and ecologically questionable infrastructure measures are avoided. More innovative environmental protection measures would also be promoted by evaluation and EIAs, while at the moment mostly end-of-pipe measures benefit from EU funds (cf. Leubuscher/ Hager, 1994: p. 62). On the other hand, it could be considered whether the INTERREG money can be specifically routed to problems in which there is hardly any chance of successful cooperation due to a great asymmetry of interests within the cross-border region (for example, protecting the "Auen" on the Upper Rhine; Blatter, 1994). This could reduce the redistributive character of such problems between the participating regions: The person downriver profits from the (terminated activities) of the person upriver without having to directly pay for this, which he would find unjust (violation of the causer principle). With the European money the cost-benefit relationship is balanced for the person upriver, so that it is easier for him to comply with the wishes of such a measure. Prevailing projects tend to be characterized by cooperation in dealing with problems that have balanced structures of interests. This might be suitable for the initial stage of cooperation, in which the INTERREG money primarily serve the purpose of reducing the transaction costs between the partners to achieve "positive sum projects". As soon as these transaction costs are no longer very high due to the creation of communication networks and institutions, the projects should pay for themselves and the INTERREG money should no longer be used for reducing transaction costs. Rather it should be used to reduce distribution problems. Overall it can be seen that the EU must pledge itself to more central control and selective sponsorship when allotting funds. However, these should be procedural means of control (EIAs and evaluation studies) and the setting of objectives (e.g., taking on projects with asymmetrical constellations of interests). The concrete selection and shaping of projects should be left to the regions.

However, the EU level should not only intervene more strongly in the projects, but also in the induced **cooperation structures**. On one hand, criticism must be expressed about the fact that the concomitant INTERREG boards represent a parallel or even competing committee to the already existing Euregio committees in most border regions (e.g., Upper Rhine, Lake Constance, Scheldemond, Benelux Middengebied). This "enriches" the already complex structure of institutions, that are characterized by rivalry. On the other hand, the fact that the regional/ communal levels are often only involved on the margins of the INTERREG programs is of problematic nature (cf. Leubuscher/ Hager, 1994: p. 23-25). The institutions making the decisions should include decentralized units as much as possible, and consequently achieve legitimacy. Besides the horizontal, cross-border cooperation, they should also take vertical coordination in the sub-regions into consideration. The EU could also promote the legitimacy and transparency of the cooperation structures more by setting standards than has been done till now employing public relations through the LACE program in cooperation with the Association of European Border Regions (cf. AEBR, 1994).

Another task for the EU would be the promotion of "**epistemic communities**" (Haas), "advocacy coalitions" (Sabatier), or "picket fence" alliances (Scharpf) with those responsible for environmental protection in the border regions, on the national level, and on the EU level. It has been demonstrated that environmental protection protagonists have a weak position in promoting their interests in border regions in the same way that they have in the national political arena (cf.

Leubuscher/ Hager, 1994: p. 58-59). They are very dependent on horizontal and vertical coalition partners (cf. Blatter, 1994b; Héritier, 1995). Specific workshops for communicating special knowledge and for linking networks are just as important for this as the integration of environmentally-oriented protagonists in formulating EU programs.

There is still primarily a **need for research** into the **conflict solving mechanisms** in border regions. This research must take into account that such conflicts often involve both cost-benefit harmonisation as well as conflicts of values. "Soft" conflict-solving mechanisms such as mediation procedures seem to be especially suitable to border regions, because as parallel mechanisms they do not question the authorities making the decisions (cf. Chapter 4).

5.2 Recommendations to the Border Regions

The aspects listed for the EU to promote naturally apply to the border regions too, in which these recommendations then must be implemented concretely. Supplementary to the explanations in Chapter 4 and to make them more concrete, the following recommendations can be made concerning the **structures** of cross-border cooperation:

It is important to get the contradictory relationship between complexity and transparency under control. The first step necessitates accepting complexity. The various environmental problems have different and changing spatial realms, different instrumental requirements, and different conflict situations. These complex and dynamic problems also require an appropriate institutional answer to deal with them. Different and "soft" cooperation committees, as they can be found in border regions, are not the worst basis for this. It should be accepted that there are different cooperation committees in border regions with respect to the administrative level and with respect to the sectoral and functional authorities. However, this complex interorganizational policy making produces a lack of democracy, because there is no longer transparency and the legitimization of the (mostly administrative) committees is only present very indirectly.

Institutionalizing Cross-Border Cooperation

This contradictory relationship between problem appropriate complex institutional settings and transparency is best resolved by forming individual cooperation committees on different levels (state, community) and when necessary in the different sectors (for example in the protection of water bodies). The central Euregio-institution should be structured as a cross-border, public **communal organization**, according to the recommendations of the AEBR (cf. AGEK, 1994). This means a three-tiered structure with a political control level, a management level, and a study group level. The filling of positions in the political control level, the "legislature", is of pivotal significance. This should be done by the communal parliaments in accordance with the proportions of the political parties. This ensures the democratic principles of legitimization of the basic decisions and the protection of minorities. A more far-reaching measure involving elections for this control committee (making it a kind of parliament) is not considered suitable or practical at this time. Directly elected parliaments should remain restricted to the levels where the central decisions are made, and these on the other hand should be determined according to the functional interrelationship range when possible. In no case can the European regional level be considered such a central reference unit today. This has another advantage: the unambiguity and clarity of the

structure is superior to all Euregio-committees composed in a complex manner and avoids the disputes about selective participation and favoring individual interests (as is the case at Lake Constance; cf. Scherer/Mueller, 1994). The basis for a cross-border communal organization founded in law is a treaty between the affected nations according to the Dutch-German-Lower Saxony-North-Rhine Westphalia model (cf. the treaty text in Akademie für Raumforschung und Landesplanung, 1988: p. 226-241).

At the same time, the communal organization should be the office responsible for the INTERREG program.

The societal groups could then be integrated into the procedure, whereby the findings of the comparative international study and the regional studies have pointed out that there is still a conspicuous need for action here (cf. Leubuscher/Hager, 1994; Scherer/Mueller, 1994; Hey/Betz, 1994). The integration of environmental initiatives and organizations in cross-border cooperation has been extremely weak until now, while the economic interests are often already represented in the institution structure and the committee appointments. Changing this practice is **the** central demand made to the border regions, that was obtained from this research project. This demand is based on the fact that the environmental protection and conservation organizations represent a decisive innovation pool for progressive environmental policy in the border regions. They also play an important role in the formulation of environmental problems. A good example of this is the role of the environmental organizations in the Lake Constance region, that strongly influence cross-border environmental policy there indirectly (cf. Scherer/Mueller, 1994).

A **joint administration with offices and "entrepreneurial" management** has proved to be especially constructive for the interplay between several organization levels with different but overlapping responsibilities (cf. Fuerst/Mueller/Schefold, 1994: p. 142; Benz, 1993: p. 113; Schmidt, 1993). It is feasible in border regions that the office of the cross-border communal organization also take care of the administrative tasks of the governmental spatial planning commission and maybe even sub-national conferences (such as the International Lake Constance Conference, for example) and specialist commissions (e.g., protection of water bodies). This would create a joint center of incentives, and at the same time simplify intersectoral, vertical, and horizontal policy coordination. This would also be in tune with the prevailing popular demand for "lean administration".

Motive and Orientation

The **motives and orientation** of participants in border regions are pivotal for their actions. A few remarks shall follow about this. Border regions are sometimes parts of subnational units (as in Germany parts of the Bundesländer), and at any rate parts of national units. Cross-border cooperation (in environmental protection) is consequently caught in the **area of conflict between binding to within and to without**. These conflict cannot be solved with simple solutions, but must be balanced conceptionally and institutionally. Problem-oriented, flexible, and consequently sectorally different spatial boundaries and allocations of jurisdiction across borders as well as a cascaded cooperation-system which integrates different administrative levels should be the organizational models for the regional cooperation.¹⁵ In doing this, it is important **to dismantle distinctive and "finalistic" orientations and arguments**. Both too strong an emphasis on the aspect of cross-border cooperation of the "periphery" as a counteract to the dominance of the national or

¹⁵ The Rhine-Neckar spatial planning organization can be considered as an institutional model. Several (German) states as well as the affected counties and communities participate in it (cf. Schmitz, 1993).

regional centers (the motivation of which is often promotion of regional identity, and which is justified to a certain extent; cf. Leubuscher/ Hager, 1994: p. 10 et seq.) as well as the fear of a secession in the centers of power resulting from a "finalistic" viewpoint are orientations that prevent pragmatic cooperation at borders. The participants in a border region should be aware that new coalition partners can be found across the border and in Brussels through the Euroregio activities, but that on the other hand - primarily due to jurisdiction reasons - the most important cooperation partners will be the regional and national centers as before. Pragmatic and problem-oriented strategies are consequently preferable to ideological proclamations, even when this makes regional mobilization more difficult. The participants in the national and sub-national centers of power should be aware on the other hand, that a centralization of foreign contacts does not do justice to the problems and - oriented to the organizational models from the world of business - that increased horizontal cooperation of the decentralized units also contributes to strengthening the whole (nation or state).

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