

Holzinger, Katharina

Working Paper

Optimal Regulatory Units: A Concept of Regional Differentiation of Environmental Standards in the European Union

Preprints aus der Max-Planck-Projektgruppe Recht der Gemeinschaftsgüter, No. 1999/11

Provided in Cooperation with:

Max Planck Institute for Research on Collective Goods

Suggested Citation: Holzinger, Katharina (1999) : Optimal Regulatory Units: A Concept of Regional Differentiation of Environmental Standards in the European Union, Preprints aus der Max-Planck-Projektgruppe Recht der Gemeinschaftsgüter, No. 1999/11, Max-Planck-Projektgruppe Recht der Gemeinschaftsgüter, Bonn

This Version is available at:

<https://hdl.handle.net/10419/274134>

Standard-Nutzungsbedingungen:

Die Dokumente auf EconStor dürfen zu eigenen wissenschaftlichen Zwecken und zum Privatgebrauch gespeichert und kopiert werden.

Sie dürfen die Dokumente nicht für öffentliche oder kommerzielle Zwecke vervielfältigen, öffentlich ausstellen, öffentlich zugänglich machen, vertreiben oder anderweitig nutzen.

Sofern die Verfasser die Dokumente unter Open-Content-Lizenzen (insbesondere CC-Lizenzen) zur Verfügung gestellt haben sollten, gelten abweichend von diesen Nutzungsbedingungen die in der dort genannten Lizenz gewährten Nutzungsrechte.

Terms of use:

Documents in EconStor may be saved and copied for your personal and scholarly purposes.

You are not to copy documents for public or commercial purposes, to exhibit the documents publicly, to make them publicly available on the internet, or to distribute or otherwise use the documents in public.

If the documents have been made available under an Open Content Licence (especially Creative Commons Licences), you may exercise further usage rights as specified in the indicated licence.



Gemeinschaftsgüter: Recht, Politik und Ökonomie

Preprints
aus der Max-Planck-Projektgruppe
Recht der Gemeinschaftsgüter
Bonn
1999/11

Optimal Regulatory Units:
A Concept of Regional Differentiation of Environmental
Standards in the European Union

von
Katharina Holzinger



**Optimal Regulatory Units:
A Concept of Regional Differentiation of Environmental
Standards in the European Union**

Katharina Holzinger

September 1999

Optimal Regulatory Units: A Concept of Regional Differentiation of Environmental Standards in the European Union¹

1 Introduction

For the European Union (EU) the accession of the Central and Eastern European Countries (CEEC) means incorporating a large group of economically weak states, whose political preferences for environmental policy are relatively low. In this respect, the challenge of the Eastern enlargement is quantitatively and qualitatively different from earlier enlargements.² The EU is confronted with a dilemma: on the one hand it cannot sacrifice its achievements in environmental protection; on the other hand it would be wise not to demand too much of the accession countries in terms of strict environmental protection in order not to place too great a burden on the developing economies. It is doubtful whether full compliance with the environmental *acquis communautaire* is feasible at all, or at least within the usual timespan. Imminent Eastern enlargement therefore raises the question as to whether the EU will be able to continue its traditional approach of harmonising environmental policies whenever different national policies are at odds with the aims of the internal market. A more flexible approach, allowing for some regional differentiation, may be more appropriate.

The existence of environmental policy at the European Union level is usually considered justified for two reasons. First of all, in cases of transboundary pollution the European Union is the appropriate level for political action. Secondly, different national environmental standards may create barriers to trade and distort competition within the internal market. While these arguments suffice to justify the shift of some regulatory competencies to the European Union, it is questionable whether complete harmonisation of environmental standards throughout Europe is the right approach for solving these problems. Those in favour of harmonisation argue that uniform standards are justified in order to prevent distortion of competition and environmental dumping and to secure the EU's goal of guaranteeing similar living conditions to all its citizens. But these arguments are disputable. From the viewpoint of ecological requirements, cost efficiency, and citizens' political preferences, regional differentiation of environmental standards is the better solution. In view of the Eastern enlargement the following questions must be raised again: i.e. under which circumstances are uniform environmental standards appropriate, when is regional differentiation preferable, and what could a normatively reasonable and politically feasible alternative to the classical harmonisation approach look like.

1 I am grateful for the comments on earlier versions of this paper which I have received from Reinhard Zintl, Raymund Werle, Fritz W. Scharpf, Christoph Knill, Adrienne Héritier, Bruno S. Frey and Christoph Engel (in reverse alphabetical order so that the "zeds" are not always discriminated against). I have also benefited from exchanging ideas with participants at the Max Planck Institute for the Study of Societies in Cologne, June 9, 1998 and at the conference "Europa zwischen Integration und Ausschluß", Vienna, June 5-6, 1998, where the paper was presented under the title: "Harmonisation or Regional Differentiation? International Environmental Goods and Multilevel Governance in the European Union".

2 For a detailed discussion of this challenge see Carius, von Homeyer and Bär 1999.

In order to establish criteria for evaluating the appropriateness of harmonised or differentiated standards I will start with some normative considerations of the adequacy of uniform standards from ecological, economic and political points of view. Two economic models dealing with problems of multi-level governance will also be considered: fiscal federalism provides a principle for allocating the competencies for environmental policy to the appropriate level of political authority in a hierarchically organised federal system. According to the modern concept of functional federalism, environmental policy functions should be performed in flexible jurisdictions which are not solely organised along given political lines (section 2). Secondly, I will deal with the political economy of European environmental policy. The goal of the internal market leads to a dilemma. On the one hand market segmentation is undesirable, on the other hand it may be necessary in order to achieve more ambitious environmental goals. The interests of the member states diverge. While rich states generally want harmonisation of standards at a high level of protection, poor states prefer harmonisation at a low level of protection or no harmonisation at all (section 3). Thirdly, I will give an overview of the European Union's previous attitude to environmental harmonisation. Because of the priority it attached to competition, the Community started out with an approach of strict legal harmonisation. This was not very successful in practice, however, mainly because of the diverging interests of the member states. As a consequence of this and of the importance given to the principle of subsidiarity in the Maastricht Treaty, European environmental policy has allowed for some differentiation in recent years, but there is still no attempt to develop an explicit concept of regionalisation (section 4). Finally, I will propose a concept for controlled regional differentiation of environmental standards. It combines normative principles derived from fiscal and functional federalism with feasibility considerations, including existing legal restrictions, administrative practicability, and ways of dealing with distributional conflicts (section 5).

2 Uniform European Standards from a Normative Perspective

2.1 Harmonisation or Differentiation of Environmental Standards?

Do environmental norms throughout the European Union need to be harmonised? In this section I will try to answer this question from ecological, economic and political points of view.

The ecological point of view

What can be said in favour of uniform environmental quality standards from the viewpoint of the environment? In the European Union there is a wide variety of ecological regions, where the scope of "an ecological region" depends on the respective environmental media or pollutant. There are regions that bear a great burden of industrial pollution as well as those that still have a relatively clean environment, and there are others still with very poor conditions as far as specific natural resources such as water or forests are concerned. These different ecological conditions require a differentiated response.

Different ecosystems react differently to a particular level of pollution content or concentration of pollutants. For example, a particular level of nitrogen pollution has different consequences depending on the nature of the ecosystem. Does it consist of nitrophobe or nitrophil species? How diverse is the system? What is the proportion of the nitrophobe species and what is their function within the system? How many other species depend on the nitrophobe species? Are there substitutes? What are the biotic (competitors, parasites) and abiotic (e.g. energetic, chemical, mechanical) factors which determine the ecosystem? Is it a constant or inconstant, a

stable, elastic or sensitive ecosystem?³ Theoretically, each system has its own optimal nitrogen load; in practice, it is hard to say what the optimal level is. Fine tuning of standards, so that they fit each ecosystem, is of course impossible. But the argument shows that there is no ecological necessity for uniform standards. From an ecological point of view what is needed is an adjustment of quality standards to the requirements of ecosystems.

From a human perspective however the demand for uniform ambient quality standards does not make sense either – not even in the light of the European Union's objective of guaranteeing similar living conditions to its citizens (see Eckrich 1994: 187ff.). Nobody wants to live in a completely "equalised" environment – especially since this probably would not lead to a very high quality (see also Weinstock 1983: 2). The uniform quality standard would have to be set somewhere between the high pollution levels of industrialised areas and the low pollution levels of areas which are still undeveloped. Industrialised regions would have to reduce, or at least not increase their level of pollution, thus in the long run shifting economic activities into other regions where environmental quality is still better than the standard. These areas would then be allowed to deteriorate. This does not make much sense. A combination of highly polluted areas and ecological recreation areas would be preferable to an "equalised" environment. Ecological diversity which is an ecological goal in its own right would suffer as a result of uniform quality standards.

For other types of standards,⁴ like emission, product composition, or production process standards, the argument is valid *a fortiori* because they are supposed to be calculated and set in accordance with quality standards. Thus differences in the amount of emissions in a given area as well as differences in the absorption capacity of the environment must be taken into account. For example, if we look at a region with relatively clean air, a relatively high absorbing potential, and a small total of emissions from large combustion plants, why should the same emission standard for large combustion plants apply in areas where the opposite is true?

Therefore, from an ecological point of view, uniform standards are generally inadequate. Only under specific circumstances are uniform emission reduction goals a reasonable solution, namely if it is supposed that there is already too high a level of emission for *every* ecosystem or if the world as a whole is seen as the relevant ecosystem (e.g. greenhouse gases). Even in this situation, however, uniform reduction goals may be a bad solution – not for ecological reasons, but because of efficiency or distributive justice.

The economic point of view

There is a great variety of economic activity and economic development across Europe. Some regions are highly industrialised, some are still agrarian; some have a high level of economic welfare, some have a low level; in some countries population density is high, in others it is low. As a result different member states and regions have different environmental problems

3 A constant system suffers only small variations in climatic conditions over time, an inconstant one suffers large variations; a stable system shows only relatively small changes as a reaction to exogenous influences, a sensitive one reacts strongly and irreversibly, an elastic one reacts strongly, but soon returns to its original state. See for ecosystem function for example Kötzli 1983, 54ff., 76ff.; Remmert 1992, 290ff.; Schulze and Mooney 1994, 347ff.

4 The system of environmental standards used in the EU is quite complicated. Quality standards regulate the level of a particular pollutant "falling into" the environmental media air, water, ground ("immission" levels), or its concentration in these media. Quality norms are sometimes aims, sometimes obligatory limit values. Emission standards regulate the emission of a pollutant or noise from a source, which may be mobile (products, like cars or planes) or immobile (e.g. plants or homes). These are mostly limit values, which prescribe a maximum amount or maximum concentration of emissions. Product composition (or product quality) standards regulate the contents of a particular product, e.g. the sulphur content of oil. Production standards may be emission norms or process norms, e.g. the use of a certain filter technology.

and different levels of pollution as well as different costs of pollution reduction and, in particular, different capacities for meeting the costs of an environmental protection policy.

From an economic perspective, the optimal level of environmental quality is achieved when the marginal costs caused by environmental pollution equal the marginal costs of pollution reduction.⁵ Since both the level of pollution and the costs of environmental protection differ as a consequence of different levels of economic development, the result of this trade-off also differs. The optimal level of environmental quality is therefore different for different member states and/or regions of the European Union. A decentralised solution with different standards may be preferable to a uniform standard because it might induce more innovation in the area of clean technologies.

Thus, from the point of view of cost efficiency, uniform standards are also inadequate. There are, however, other economic justifications for the harmonisation of standards. First of all, divergent national environmental standards may distort competition. Secondly, harmonisation of standards would eliminate trade barriers in the internal market. Thirdly, harmonisation of standards can avoid the costs of market segmentation. I will deal with these arguments in section 3.1.

The political point of view

From a democratic point of view too, the harmonisation of environmental standards must be seen as inappropriate, as long as "democratic" means that political decisions represent the will of the people. In the member states it is the citizens who have the right to decide on the quality of the environment in their country. They decide, in a democratic way, the level of pollution they are willing to accept, usually through their representatives, sometimes in direct-democratic procedures. The preferred environmental quality in each country depends on the information the voters have and their preferences. The preferences will be a consequence of ecological conditions, which include the level of pollution and the absorption capacity of the environment (Eckrich 1994: 116), and of economic factors such as the level of economic development, the costs of pollution reduction, and the evaluation of environmental damage. The results of the decision making processes will vary among the member states. If a country opts for a very low quality of environment, and therefore lax standards, perhaps because of a high preference for economic development, this is just as legitimate as a decision in favour of high environmental quality and strict standards (Eckrich 1994: 12ff.; Weinstock 1983: 6).⁶

But there are limits to the autonomous decision making of political jurisdictions with regard to environmental standards. The non-existence of pollution control in one state may cause negative external effects for other states. In this case neighbouring states may have a right to demand stricter standards. But they may also have an obligation to compensate the polluting state for its increased costs, depending on whether states are seen as having a basic right to pollute or as having a basic right to enjoy a clean environment. In a federal system like the European Union a second reason for restricting the autonomy of a state may be the idea that environmental protection is a merit good. The central political level might think that the level of protection decided on by a particular member state is not sufficient for securing a minimum of environmental quality or health. The citizens of that state are considered to have "false preferences" because they are not fully informed or are unable to evaluate the negative effects of

5 As in the case of the ecological optimum, it is almost impossible, of course, to determine the economically optimal level empirically. This does not concern us here since the purpose of this section is the theoretical discussion of normative criteria which can be used to judge whether harmonisation or differentiation is more appropriate.

6 Problems of aggregation of political preferences in democracies are left aside here; the positions on environmental policies held by national governments generally distort the preferences of the public.

pollution correctly, and thus the decision should be made for them. Or the central level decides that there should be uniform standards in order to provide similar living conditions for all citizens. Environmental legislation in the European Union is in fact often based on these reasons. But whether these are valid arguments in democratic societies is open to question (see Eckrich 1994: 185ff.). Do the other states or the central level have a right to impose their will on such a country? Or, on the other hand, do they even have a moral obligation to do so?

Consequently, we see that for ecological, economic and political reasons harmonisation of environmental standards is not necessary. A certain minimum level of environmental quality may however be considered desirable in cases where this is seen as a merit good for all European peoples. The optimal scope of the areas in which the same standard should be applied is given ecologically by the ecosystems or ecological regions, economically by areas of similar costs of pollution or pollution reduction, and politically by political borders. There are numerous overlaps in all these areas which thus gives an idea of the practical difficulties involved in optimal standard-setting according to the principles developed above.

2.2 *The Adequate Level of Action: Fiscal Federalism*

Although there is no need for harmonisation throughout the Union, this does not mean that there should not be an environmental policy at the European Union level. There are good reasons for having some legislative competencies for environmental policy at the EU level of political action. As we have seen above the borders of the political units and the ecological and economic regions are not congruent. There are overlaps and spillovers, or, in other words, cases of transboundary pollution. Some environmental problems affect more than one member state, for example the pollution of the river Rhine or air pollution in general, some affect the whole of the EU or even the whole world, as in the case of greenhouse gases.

Transboundary or global environmental problems cannot be optimally solved at the level of the nation state. The incongruence of the geographical scope of environmental problems and jurisdictions leads to externalities or internalities. As a consequence, the decisions on environmental protection taken by the jurisdictions are not efficient. In the environmental field it is normally negative externalities which cause underprovision of the public good "clean environment", in other words, in regulation at too low a level of protection.

A normative solution to the problem of externalities is given by the *principle of fiscal equivalence* which was developed by Mancur Olson (1969). Olson's question was - when is a public good provided efficiently by a jurisdiction? His answer was - the provision of a public good is efficient, if the users of the good, the taxpayers, and the decision-makers are identical. In his theory the scope of the jurisdiction can be determined by three factors:

- a) a population with homogenous preferences for the public good
- b) regions with similar costs for the provision of the public good
- c) the geographical scope of the public good (sometimes)

In the environmental field the last factor is especially important. The scope of an environmental good, or of the corresponding public bad, is determined in most cases by biological or physical conditions and cannot be influenced by humans. For environmental regulation this means that the jurisdictions have to be adjusted to the scope of the environmental good (the ecological region) in order to achieve efficient solutions. Consumers' preferences and costs of provision are of secondary importance. If there are different preferences for the level of protection or different costs for achieving the same quality of the environment in two regions with

respect to the same environmental problem, then, according to Olson, each of the two regions should make its own decisions – provided there are no spillovers.

Based on the equivalence principle the following allocation of political responsibilities for environmental policy is usually deemed desirable (for example Schneider and Sprenger 1990: 24; Kahlenborn and Zimmermann 1994: 38; Eckrich 1994: 148ff.): local problems, including for example noise levels, municipal wastes, local air pollution, small bodies of water, and soil protection, should be solved at the local level. Mobile sources of air pollution and noise, hazardous wastes, and nature conservation should be dealt with at the national level. Trans-boundary air pollution and global problems, such as the climate problem and biodiversity can be best tackled at the European Union or the United Nations level. The Rhine, the North Sea, and the Mediterranean should be regulated by institutions specifically created for that purpose.⁷

But such a static allocation of responsibilities is only a partial solution to the spillover problem if there are rigid political borders and a hierarchical federal system, where the upper level incorporates a certain number of jurisdictions at the lower level. The boundaries for collecting and treating waste can be chosen arbitrarily and therefore waste problems can be managed by existing jurisdictions, whereas the scope of air or water pollution is determined by physical facts which would require the creation of new jurisdictions. There may be economic justification for each county to build its own biological waste treatment plant. But the same need not be true for an incinerator, where joint operation by several countries may be the most efficient solution to the problem of the economies of scale. Some problems affect some, but not all the member states of the Union. Others affect only parts of some of the member states. For example, a problem of conservation in the Alps may affect the non-EU member Switzerland and the EU members Austria, France and Germany, but only parts of the latter two states. Whereas the southern German state of Bavaria is interested in a solution to the problem the matter is of no concern to the northern German state of Lower Saxony.

Such examples show that opportunities for partial co-operation are needed and should be permitted, and not only for reasons of ecological scope but also for economic or preferential reasons. Olson's principle tells us that only those levels directly affected by the problem should take the decision, but not the ones above or below the affected region.⁸ Therefore a more flexible approach to allocating political responsibilities or building jurisdictions would be useful.

2.3 *A Variable Geometry Approach: Functional Federalism*

Two theoretical approaches which imply the need for a more flexible concept for the allocation of political responsibilities are the modern theories of functional federalism and of institutional competition among jurisdictions.⁹ Compared to fiscal federalism, these theories are more interested in regulation than in provision of classical public goods, and more interested in the evolution of institutions and the dynamics of institutional competition than in the static allocation of legislative competencies. But Olson's basic idea, the principle of equivalence, is retained.

7 Zimmermann and Kahlenborn 1994, 227-238, develop a very detailed concept for the allocation of political responsibilities for environmental regulation in the EU.

8 In many member states of the EU, municipalities are not allowed to co-operate without the consent of the central level of government. In the case of spillovers, it is typically the next level up which takes responsibility for a specific function (see Eichenberger 1996, 119).

9 For the theory of functional federalism see for example Eichenberger 1996; Frey 1996; Frey and Eichenberger 1996; Straubhaar 1995; for the theory of institutional competition Long and Siebert 1991; Kerber 1998; Vanberg 1998.

A prominent example of a functional federalism approach is the suggestion by Bruno S. Frey and Reiner Eichenberger for organising the European Union according to their concept of so-called FOCJ. FOCJ are **F**unctional, **O**verlapping, **C**ompeting **J**urisdictions (singular FOCUS). They are jurisdictions in the sense that they have enforcement power and the right to tax. Two main characteristics of the concept are important here. First of all, political units can be created on a functional basis, which means they are defined by a certain task. In contrast with the theory of fiscal federalism, in this concept the adjustment of jurisdictions to externalities, economies of scale, and preferences is flexible and occurs endogenously.¹⁰ Secondly, geographical overlaps of FOCJ which perform the same function are permissible. They may, for example, provide a different amount or quality of the good or service. For example, two or more school-FOCJ or several social security systems could co-exist in a given territory (in fact, independently of the territory), each providing their members with a different kind and quality of schooling or social security. The members can choose which FOCUS they wish to belong to according to their preferences; entry and exit are generally free.¹¹ This means that the jurisdictions compete with each other as in a market. The performance of a FOCUS is tied to the preferences of its members in a second way. There is political competition within each FOCUS. The members decide the policies of a FOCUS by choosing representatives or by direct-democratic procedures.¹²

The first characteristic (Functional) allows for jurisdictions which can be flexibly and endogenously adjusted to the scope of the environmental problem in question. Generally speaking, there would be a FOCUS for each environmental problem whose scope would have to be determined by the ecological requirements of biological and physical facts in order to avoid externalities. For each environmental task there would be at least one FOCJ (in the case of global problems), some (for regional problems) or many (for local problems). Several local FOCJ could merge if this was more efficient economically, as in the example of the incinerator mentioned above. In practice it would not suffice to have one FOCUS for air quality in a particular region and one for water quality and so on: hence, for example, different bodies of water or different air pollutants have different scopes, a separate FOCUS for each lake or river, for SO₂ and NO_x, for CO and dust would be needed.¹³

The second characteristic (Overlapping), however, is not applicable to environmental policy in general. In most cases in environmental policy the geographical overlap of FOCJ which perform the same function will not work. It is simply not possible to have two FOCJ working in the same area, each offering a different quality of air. You cannot regulate all the sources of emissions in a given area by two different standards at the same time. It is possible to imagine a system which would allow the FOCJ to "buy" higher or lower emission reductions from as many sources (regulatees) as they wished. The amount of reduction bought would depend on the constraints of their budget, which in turn would be determined by the number of members and the tax rate. But then, the overall result would be an average quality of the air, where the

10 In this respect, functional federalism is similar to the theory of clubs (Buchanan 1965).

11 Members of a FOCUS can be individuals, or other FOCJ, especially the smallest territorial political units, the municipalities.

12 Frey and Eichenberger argue strongly in favour of direct democracy (Eichenberger 1996, 115; Frey 1996, 318f.).

13 This is not the place for a discussion of the pros and cons of the FOCJ concept, but some of the problems become immediately apparent. Firstly, the individual would be a member in hundreds and hundreds of FOCJ. This would lead to an information overload for the member, who has to directly decide the policies of each FOCUS. Secondly, there would be high transaction costs, for example administrative costs of registration and voting in so many single-issue FOCJ. Thirdly, even if one thinks of a representative system, how are single-issue FOCJ to be coordinated, when the policies they offer are not independent in substance? And who is liable for the uncoordinated collective result? While geographical spillovers are avoided by the design of the FOCJ, functional spillovers are probably less manageable in a system without a body with overall responsibility. For a discussion of these arguments see Frey 1997, 20ff.

members of the high-quality FOCUS were paying voluntarily more and the members of the low-quality FOCUS less for this average quality to be achieved. Why should anyone want to be a member of the high-quality FOCUS? Using another example, it would be possible to have two competing FOCJ for the collection and treatment of waste in the same region, where one FOCUS, for example, separates wastes and another does not. However, the lower quality treatment system will cause negative externalities for the others, but will be cheaper for the members. Rational individuals would become members of the low-quality FOCUS. Thus, a "race to the bottom" could be expected. Competition among FOCJ may work in cases where exclusion is possible, but it would not be a sensible solution in cases of non-excludable public goods.

The principle of equivalence provides a rule for the optimal allocation of tasks to different levels of government. But it is too rigid because it accepts the given hierarchical structure of existing jurisdictions. FOCJ allow for more flexibility, but the idea of geographically overlapping and competing jurisdictions performing the same function is not applicable in most cases of environmental protection. What is needed, is a conception which uses the normative rule developed by Olson, but which allows for a more flexible design of jurisdictions, without sacrificing a high level of environmental quality to the principle of competition.

3 The Political Economy of Environmental Integration in Europe

3.1 *The Dilemma: Environmental Goals versus Competition Goals in a Single Market*

The fact that the primary goal of the European Union is the creation of an internal market and that this has consequences for the question of whether environmental standards should be harmonised or differentiated within the Union has, until now, largely been ignored. Is it possible for the existing jurisdictions - in practice, the member states - to adhere to their own national standards in a territory which is conceived of as a common market? Three common market arguments in favour of harmonisation are usually given.

- First of all, harmonisation allows the costs of market segmentation to be avoided (Eckrich 1994: 122ff., 175ff.). These costs include, for example, information costs faced by an exporting industry that has to find out about norms and rules in other countries; costs of multiple certification procedures; diseconomies of scale because several variants of a product have to be produced. There may also be a centralisation advantage for the public administration. The development and adoption of uniform standards at the EU level avoids the costs of searching for a regulatory solution having to be paid repeatedly.
- The second justification for harmonisation is avoidance or elimination of trade barriers. Different product standards in member states directly influence the functioning of the internal market and may result in technical barriers to trade.
- Thirdly, if a government decides to impose environmental production standards, this will imply more costs for those affected. For an industry that exports its products to other states without a similar regulation, the measure results in foreign competitors having a competitive advantage. Environmental policies may result in substantial differences in

production costs between member states. This is often said to distort competition which should be avoided through uniform standards throughout the internal market.

In order to secure a common market, basically two strategies can be pursued. Either the mutual recognition of environmental standards can be enforced, or the standards can be harmonised throughout the whole area. Mutual recognition is more or less the strategy used in GATT negotiations and the World Trade Organisation. The European Union has used both mutual recognition and harmonisation, the former as a basic rule (Eckrich 1994: 96), the latter in cases where national standards had previously been justified on health and environmental grounds. Thus, in the environmental policy domain, the strategy of harmonisation was pursued by the EU. But total harmonisation and mutual recognition are only two measures at opposite ends of a whole range of different harmonisation measures which have been used in the European Union.

Mutual recognition creates or maintains the common market and it maintains competition between regions with different standards. A diversity of national standards exists which result in competitive advantages or disadvantages. This may be considered to be distortion of competition. However, this situation can also simply be seen as a competitive advantage, resulting from natural circumstances or the political preferences of voters.¹⁴ The exploitation of comparative advantages is desirable for reasons of allocative efficiency. But if a high level of protection leads to higher costs and competitive disadvantages for the regulated industry, a state has no incentive to maintain such a standard. In the case of a mutual recognition rule the domestic market cannot be protected from similar, but non-regulated and thus cheaper, products from abroad. If the domestic consumers do not respond in an environmentally friendly manner and buy instead the cheaper products, competition leads to the explicit or implicit abolition of the stricter regulation. In this situation the result will be a "race to the bottom" of protection levels.

Whereas national standards are designed to correct the market results of the national markets, harmonisation creates both a common market and market correction at the European level. Harmonisation restrains rather than promotes competition as far as the environmental qualities of products and production are concerned. In the case of total harmonisation, the result is a uniform standard. As shown above, this is not desirable, neither for ecological, nor for political or economic reasons. It must be added that harmonisation of quality, emission, product composition, or process standards does not lead to identical competitive conditions. In combination with geographical, technological, and production specific factors, neither uniform standards nor differentiated standards are competition neutral (Zimmermann and Kahlenborn 1994: 195f.; Weinstock 1983: 7; Schneider and Sprenger 1990: 30f.).

Thus, environmental policy in the European Union is faced with three solutions to the dilemma: either, ecologically reasonable, economically efficient, and politically desirable regional differentiation is permitted, resulting in market segmentation and sacrificing the advantages of the greater free market; or, mutual recognition aimed at eliminating market segmentation is enforced, in which case the environmental goal – a high level of protection – may not be achieved; or environmental standards are harmonised throughout the European Union in order to make use of the welfare benefits of the greater market, but at the expense of standards being

14 Whether an environmental measure can be judged to be leading to competitive distortion or not depends on the individual circumstances. In a state in good ecological condition, say with a very low amount of SO₂ emission, if no need is seen for imposing production standards as far as SO₂ is concerned, the state is only using its comparative advantage. If a number of states pollute a body of water with heavy metals to the same extent, and if one of the states imposes no control measures while the others do, this would clearly be distortion of competition.

inefficient because they are not adjusted to ecological and economic requirements and to the preferences of citizens.

3.2 *Diverging Interests of Member States*

Apart from normative considerations, the interests and strategic goals of member states also play a role in the problem of harmonisation of environmental policy in the Union. The relevant question here is who has an interest in harmonisation and why? Who would prefer mutual recognition? In line with some other authors (Rehbinder and Stewart 1985: 9; Scharpf 1994: 482) I will distinguish two classes of member states and call them the *rich states* and the *poor states*.

The rich states are highly developed and industrialised and are therefore burdened with substantial pollution problems. They also have a high level of economic welfare and political pressure from the public to introduce strict pollution control measures, thus the government has a strong political preference for a high level of protection. This results in high costs for environmental protection measures.

The poor states have a low level of economic development and industrialisation and therefore economic welfare is relatively low. Some of these countries have few problems with industrial pollution, but many problems with ecological resources like water shortage or deforestation. However, some others, especially the potential accession countries in Eastern Europe, have substantial problems with industrial pollution. However, none of these countries recognise environmental problems as being very important. Hence there is no political priority for pollution control. Moreover, there is a high preference for economic development. Thus, the costs imposed upon industry by environmental policy are low.

In rich states there is political pressure to reduce pollution. However, these states realise that if they impose stricter standards they provide a public good for neighbouring states in cases of transboundary pollution, and that there is a competitive disadvantage for their own industry where export goods are concerned. There is an incentive for these states to demand harmonisation measures since the other states must then share the burden. As far as stricter product standards are concerned, the rich states are also interested in harmonisation if they are not permitted to impose their own standards on imported products. Otherwise the incentive for harmonisation diminishes because the imposition of a state's own standards on import goods protects that state's industry against foreign competition in the domestic market. In general, rich states in particular are interested in the harmonisation of environmental control policies. Moreover, if harmonisation takes place at their own high level of pollution control, rich states may have comparative advantages in the field of environmental protection goods and services - a special environmental industry has developed and is interested in finding a broader market for its goods and services.

Poor states are less interested in harmonisation. They feel no necessity to impose a strict pollution control policy and they would like to benefit from this competitive advantage. Harmonisation would require stricter standards, which would be demanded by the rich states, whereas the poor states want to protect their industry against the additional costs of such pollution control measures. In the case of product standards, they have an interest in harmonisation - at a low level of protection - as long as rich states are allowed to exclude their more polluting and cheaper products. If exclusion for environmental reasons is forbidden, poor states have no incentive for harmonisation at all.

As shown in section 2, harmonisation throughout the EU is only justified if the whole Union is considered to be one single ecological area. It is not justified on the basis of competition interests when political preferences or economic factors are different. But an analysis along the lines of positive political economy shows that in each situation there is one group of member

states which is interested in harmonisation. In most cases this is the group of rich states; only in the case of product standards, and when protectionist measures are allowed, are the poor states in favour of harmonisation. Whenever some states have an incentive for advocating harmonisation at the EU level, there are always other states which are strongly opposed to the harmonisation proposed. The EU's policy-making system, where decisions are basically reached by negotiations between member states, had, and still has, to cope with this situation. In the next section we will see how successful the Union has been in managing its conflicting goals on the one hand, and the conflicting interests of member states on the other.

4 Environmental Standard-Setting in the European Union: From the Beginning to Eastern Enlargement

4.1 Phase I: The Harmonisation Illusion

The strong incentives some member states have for advocating harmonisation may have been one of the reasons why the harmonisation goal was dominant during the first two decades of a common environmental policy. Another reason was the aim of creating a common market which was as free as possible of trade barriers and of competition distortion. Thirdly, at the beginning of the seventies environmental policy was a brand-new policy domain, where ambitious European officials were very concerned to give environmental protection a high priority. As a consequence European environmental policy attempted to harmonise environmental standards as far as possible. The legislation included transboundary and local noise, air and water quality standards, emission standards for industrial facilities and products, composition standards for hazardous substances and chemicals, nature conservation rules, and more.

But the limits of the harmonisation approach soon became clear. As mentioned above, in each case where there were countries interested in the harmonisation of a certain policy, there were countries opposed to it. And since the Union was a consensus-based system, compromises had to be found. In most cases European environmental policy decisions took years to be agreed, and very often the compromise eventually arrived at at least partially undermined or counteracted the harmonisation effort. The following gives an idea of the ways in which a directive or regulation aimed at harmonisation became a non-harmonised European environmental policy.¹⁵

- In many environmental decision-making processes the harmonisation fiction was abandoned. Instead of *total harmonisation* one of the measures of incomplete harmonisation was used (see also Eckrich 1994: 93ff.). Initially, most product standards followed the concept of *optional harmonisation*, where both European and national standards co-exist. Manufacturers choose the standard according to which their products are to be licensed. The member states are obliged to accept the European standard but not other national standards. Deviations upwards or downwards from the European limit value are possible, but deviation upwards is generally¹⁶ less attractive for competitive reasons. Other forms of incomplete harmonisation are *alternative* and *partial harmonisation*. *Minimum harmonisation* - where only standards which are stricter than the European standard can be employed and enforced nationally- has rarely been used. This approach is

15 A more detailed account is given in Holzinger 1991: 305ff. and in Holzinger 1994: chapter 2.

16 Deviation upwards might be attractive, for example, if an industry in that member state has a competitive or technological advantage in a particular clean technology.

especially desirable from the viewpoint of the environment, but it allows trade barriers to exist.

- The standards used have often been guidelines or objectives rather than strict limit values. Guidelines permit some deviation in both directions.
- Many directives contain explicit exceptions for certain member states, which have not had to comply to the norm at all, or which could comply later, or could comply to a less strict norm.
- Often the fixed time limits for achieving a certain quality standard are very long. Depending on their interests, the member states have implemented the directive at an earlier or later stage, with the result that national differentiation has been uncontrolled. There have sometimes been explicit derogation periods for certain countries. In this way, there has always been a "Europe of multiple speeds".
- Vague statutory terms in the directives have given further opportunities for deviation. Member states have been given considerable freedom in the interpretation of crucial aspects of a directive.
- Transposition from European to national law and the implementation of the regulations provide additional leeway. The European Commission is obliged to monitor the correctness of the transposition. In cases of non-compliance, it can initiate an infringement procedure which can lead to an application to the Court of Justice. But because the procedure takes so long and the outcome is open using this way is, in any case, worthwhile for a member state which does not want to implement a certain directive (in time). Monitoring the application of the directives is almost impossible for the Commission. However, a great number of infringement procedures resulting from complaints of individuals in member states shows that deviation from the wording and the meaning of the European legislation during the implementation phase is the rule rather than the exception.

As we have seen, national differentiation of European environmental protection policies emerges from the policy formulation process as well as from the implementation process. The political background for this is the divergent environmental and economic interest of member states. For some of them, there is always an incentive to deviate from the Union's policy. During the decision-making process member states try to gain leeway for the implementation phase and they are thus interested in vague statutory terms, long periods of time, and so on. During the national implementation process they make use of this room for action. Beyond the fiction of a harmonised environmental policy there has always been a reality of uncontrolled re-nationalisation.

4.2 *Phase II: Turning Away from the Ideal of Harmonisation*

Since the mid-eighties a change in attitude towards the harmonisation approach has taken place within the European institutions. This may be the result of a growing realisation that harmonisation is often inadequate, or that it has not been very successful in practice. It might also be a consequence of the growing opposition of member states and regions within member states to the harmonisation efforts of Brussels. While all three factors may have played a role, the latter has probably been the most important one. Meanwhile, subsidiarity, regionalisation and a more differentiated approach to environmental regulation seems to have become the dominant philosophy, although this is more prevalent in political programmes than in day-to-day policies. The departure from the ideal of harmonisation was marked by several steps.

In 1985 the so-called "Delors list" was created within the context of the internal market programme. It listed all the legislative matters for the future creation of the common market by mutual recognition and not by harmonisation. This list included many environmental matters.

With the adoption of the Single European Act in 1987 a chapter on environmental policy and the principle of subsidiarity for environmental matters was introduced into the European treaties. Article 130r explicitly mentions regional differentiation of environmental regulation. Article 130t, like Article 100a (4), allows for more stringent national measures as long as this does not interfere with the functioning of the internal market. But this did not change behaviour, at least not in the short term. At the end of the eighties some very ambitious directives were adopted which harmonised emission standards for cars, large combustion plants, and waste incineration plants.

The Treaty of Maastricht introduced the principle of subsidiarity at the general level in Article 3b. It is doubtful whether this is of much consequence for the practice of European policy-making. But the Treaty also made provision for institutional changes. The *committee of the regions* was founded; an opting-out of European policies was permitted, for example for the United Kingdom in case of the Social Charter, and for European Monetary Union in general. The Schengen agreements extended and deepened the co-operation between some member states and then gradually became integrated into the Treaty.

The *Fifth Environmental Action Programme* of 1992 was written under the political shadow of Maastricht. It stresses both the subsidiarity principle and the use of less rigid forms of regulation. The so-called *principle of shared responsibility* requires the regulators to co-operate with all the relevant actors in society, and in particular with those subject to regulation. The overall tenor of the programme is that the traditional command-and-control approach should be complemented by new and more co-operative instruments.

In the following years a series of directives was adopted, whose aim was not the harmonisation of standards but rather the use of common procedural rules which require co-operation with the regulatees and allow for national differentiation of policies. Examples are the Access to Information directive, the Eco-Label directive, the Eco-Audit regulation, and the Integrated Pollution Prevention and Control directive.¹⁷ But this procedural type of regulation has goals which are different from those of standard-setting. Its aim is not to secure a particular quality of the environment but to create an incentive structure for environmentally friendly behaviour. Therefore we cannot expect these new instruments to be able to solve the dilemma of the creation of a common market on the one hand, and the normative appropriateness of differentiated environmental standards on the other. But we can expect the new instruments to lead to even more uncontrolled, nationally differentiated outcomes of European environmental policy than was the case with command-and-control instruments. This is especially true in cases where the directive gives a lot of leeway.

The latest step in the direction of a Europe of differentiated integration is provided for in the flexibility clauses of the Treaty of Amsterdam.¹⁸ Flexibility means closer co-operation of a group of member states in a certain policy area, or, in other words, it allows collective deviation from common policies. Such a group must consist of at least a majority of the member states. It can be initiated by the member states or the European Commission. The group must remain "open", that is, other member states must be allowed to enter at a later time. Therefore flexibility has to be seen as a form of temporally differentiated integration. The establishment of so-called *closer co-operation* is decided by the European Council with a qualified majority. If a member state demands it "for reasons of national policy", the Council has to decide unanimously. This means that *de facto* each member state has a right to veto an intended closer co-operation. Only the members of the group itself can decide the matters for co-operation, using

17 For more details see the chapters of Hines 1999 and Knill and Lenschow 1999.

18 Article 11 of the consolidated version of the Treaty establishing the European Community.

the procedures provided for by the treaties. Several restrictions apply to policies pursued through intensified co-operation, of which two are especially important for environmental policy. First of all, this co-operation must not have negative effects on trade within the Union and it must not distort competition. Secondly, it must further and protect the goals of the Union. In environmental policy this means that no decision may be made in favour of standards which are at a lower level of protection than those already set by the European Union.¹⁹

It remains open whether this movement away from the harmonisation of standards as the primary tool of market creation, away from centralisation and complete integration, and away from command-and-control instruments will lead to ecologically, economically, and politically adequate regionalisation. But, in view of the Eastern enlargement of the European Union, it becomes fairly obvious just how difficult maintaining the policy of complete harmonisation would be in the future.

4.3 *The Eastern Enlargement and Uniform Standards*

If the previous approach of complete integration is applied to the next enlargement, the potential accession countries will be required to comply with the present environmental law of the European Union at the time of accession and will hence have a lot to make up in order to achieve the required level of protection.²⁰ In future they will have to comply with the same strict environmental standards as the present member states do.

It is a fact that the Central and Eastern European countries (CEECs) also have a lot to catch up with in terms of economic development. It must therefore be considered legitimate for the population and politicians to give priority to economic goals and hence it seems doubtful whether they can achieve the ambitious goal of a traditional *acquis communautaire* for environmental policy.²¹ Most of the accession countries are industrialised and are burdened with considerable industrial pollution. But their industry and the technologies used are mostly outdated and environmental protection technology is unsatisfactory. Furthermore, some of these countries are due to accede in as little as four or five years' time, which means that the catching up has to take place very quickly.

The real problem, of course, is not the transposition of the strict European law into the member states' laws. In some instances, the accession countries have even stricter laws than the European Union. The real problem is implementation. Traditionally, the implementation deficit in these countries is much greater than in most member states of the Union, even if we take into account the fact that there are some great sinners among the latter. In a political culture where administration and industry were used to having a strict environmental law but almost no enforcement of it, it will be no easier to ensure the correct application of European law than anywhere else.²² In addition, setting up of a measurement and monitoring system for air and water quality etc. is very expensive and may lead to too high a burden for the public budgets.

Another consideration is environmental policy-making within the European Union after the enlargement. The accession will alter the balance between those states which are interested in a high level of protection, and those states which would prefer a lower level of protection or no policy at the Union level at all. It is not yet known exactly how the balance will change, because the voting weights and the majority requirements will be subject to reform before the

19 See Janning 1997 and Epiney 1999.

20 See Soveroski 1999 for the procedures and experience with previous enlargements.

21 For some countries an account is given in part III of this volume.

22 See Knill and Lenschow 1999.

accession takes place. On the basis of the present rules, there would be a clear majority of member states which are not very ambitious in the environmental field. At present each of the three groups of environmental front-runners, the laggards, and the countries in between, holds about one third of the votes and can thus act as a blocking minority.²³ After the enlargement, the front-runner group would lose its blocking minority position, and the front-runners and the in-betweens together would not hold enough votes for a qualified majority. On the other hand, the laggards account for almost a simple majority, and together with the in-betweens, they possess a qualified majority. Of course, this is highly speculative, since up to now there has not been a re-distribution of votes among the enlarged Union's members, and it presupposes that all the accession countries will belong to the laggard group. However, there may be a tendency for member states to adopt harmonised standards at a lower level of protection than before the enlargement. This is even more important now since, under the terms of the Treaty of Amsterdam additional environmental matters are subject to the co-decision procedure and thus qualified majority voting.

Complete environmental integration into the Union within a few years is neither feasible nor reasonable for the Eastern European states. It seems not only predetermined but also sensible that the ambitious aim of complete integration cannot be achieved and that this aim will probably be partially abandoned during the accession negotiations. Furthermore, once the CEECs have become EU members there is the risk that the harmonised level of protection will be lowered in the future. Against this background it seems much better to allow a temporal and sectoral differentiation of environmental policy. On the one hand, this would not put too high a burden of environmental costs on the poorer Eastern states before they have a chance to catch up economically with the West. On the other hand the environmental front-runner states would be able to maintain or introduce a higher level of protection.

5 Optimal Regulatory Units for Environmental Policy in the European Union

5.1 *The Proposal*

In this section a concept of a European Environmental Policy will be developed which allows for more flexible integration of member states and regional differentiation of environmental requirements. Most importantly, the allocation of legislative responsibilities to the EU level has to be considered very carefully. The only environmental problems which should be regulated at the EU level are those whose geographical scope make it necessary, or where EU regulation is needed in order to preserve the internal market. The allocation of legislative competencies to different levels of action or jurisdictions should be firmly based on the principle of subsidiarity.

Basically there are three levels of action in the EU which are full political jurisdictions: the EU itself, the member states, and the subnational jurisdictions, like the German Länder, regions, counties or municipalities. Since the geographical scope of environmental problems does not always fit neatly within political borders, an ecologically adequate solution must not only take into account the existing levels of action but also seek to create the following co-operation possibilities

²³ For a discussion of the model and a calculation of voting power in European environmental policy see Holzinger 1997.

- between several, but not all, member states;
- between member states and non-member states;
- between member states and subnational jurisdictions of other member states;
- transnational co-operation between subnational jurisdictions;
- subnational co-operation between subnational jurisdictions.

Optimal Regulatory Units (ORUs), formed by co-operation between existing jurisdictions, should be introduced as units of political decision-making to function parallel with jurisdictions determined by current borders and levels of action. The question now is which level of action and which form of flexible co-operation is appropriate for dealing with a particular environmental and economic problem.

There is no need for a detailed discussion of all the possible levels of co-operation mentioned above. Instead, I will primarily examine the EU level. Co-operation among some member states (or among members and non-members) and subnational as well as transnational co-operation between subnational jurisdictions can be treated briefly, since some of the problems either simply do not exist at lower levels or they are the same as at the EU level.

1. The European Union level

The EU can be considered a multi-functional ORU for all environmental problems which need to be solved at this level. This ORU is responsible for correcting market failure through regulation.²⁴ There are three possible reasons why the correction of market failure should take place at the EU level. First of all, the geographical scope of the environmental good covers the area of the whole of the EU or an even greater area. In this case, the EU has to be seen as a single ecological area and therefore as an ecological ORU. Secondly, the environmental problem has to be tackled by product norms, as the use of different national product standards would put the internal market at risk. Thirdly, different national product and production standards lead to distortion of competition within the internal market and to environmental dumping. Trade barriers and competitive distortion as a result of national standards may both be considered as the economic spillovers of national regulation. The problem arises because a political decision has been made that the EU will be a common market. This means that it will be a single economic ORU, at least in some respects.

The EU as a single ecological ORU

Examples of environmental problems which extend outside the EU are carbon dioxide emissions or other greenhouse gases, nitrogen oxide, sulphur dioxide, or similar long-range air pollutants. For ecological reasons regulation of these pollutants should take place at the EU level. In some cases, the EU must be chosen as the appropriate level of action for economic reasons as well, as in case of nitrogen oxide emissions from cars, which must be regulated by product standards. In the case of global or EU-wide environmental goods, single member states will not take the necessary protection measures because they cause positive externalities and put a burden on the national population and domestic economy. The problem needs to be solved by the co-operation of all the members of the ORU.

But even if the EU is the appropriate level of action it need not follow that standards, like emission reduction goals or emissions standards for particular sources, have to be harmonised. It is necessary, however, for all the members of the ORU, i.e. all member states, to reach a common decision on environmental quality with regard to particular pollutants. Since the EU is

²⁴ Among many other tasks, of course.

a single ecological ORU, different quality goals cannot exist side by side. But member states need not all make the same size of contribution towards achieving the desired quality level. While some states or subnational jurisdictions may do more, others may do less.²⁵

What is different here is how the cost is shared. It is difficult to say what an equal share of costs in environmental policy would be. If for example, there is a common pollution reduction goal and each of n members contributes $\frac{1}{n}$ to the overall reduction, is this an equal share?²⁶ In any case it does not seem fair. Or is it an equal share if each member meets $\frac{1}{n}$ of the costs? Equality does not seem to be the appropriate principle here. A fairer distribution principle might be equity: i.e. each member reduces its pollution in proportion to its contribution to the pollution, for example reducing its share either of the overall pollution or the pollution per capita or the pollution per unit of GDP by the same percentage. Or, each member tightens its emission limit values per source by the same percentage. This would not necessarily be the same as using uniform standards. Therefore, regardless of whether the costs of pollution prevention are shared according to the principle of equality or of equity, it will not be achieved by harmonising emission standards for products or processes. In addition, an element of redistribution may be desirable for economic reasons. Poor states, for example, could contribute less to pollution reduction than they would be required to on the basis of their share of pollution. Regional differentiation would then take place as a consequence of distributional considerations. But it may also take place as a consequence of preferences. States which have a preference for a higher level of protection could be expected to contribute a greater share of the costs relative to their share of pollution if their preference was made mandatory for all members.

But it must not be forgotten that states which contribute more to pollution reduction than others produce a positive externality for the others. Are states really ready to meet a greater share of the costs if they are interested in a higher level of protection? Are rich states willing to do more in order to take some of the burden off the poor states? In the case of greenhouse gases there seems to be an agreement along these lines, but it has not yet been implemented. Also, rich states could finance improvements in the poor states in cases where the marginal costs of improvement are significantly lower than in the rich states themselves, thereby obviating expensive improvements in the rich states.

Leaving the distributional questions aside, what then could regional differentiation look like? Three forms of regional differentiation could be practical solutions: minimum harmonisation, the formation of groups of member states using different standards, and regulation allowing multiple speeds. All three forms of differentiation divide the EU into subgroups comprising of 1 to n member states, where the subgroups or sub-ORUs use different standards at the same time.

Minimum harmonisation means that there is a community wide standard with which every state must comply as a minimum. It differs from total harmonisation in that individual member states are allowed to do more. This concept has always been used in European environmental policy, mainly in the area of quality standards. But, in cases where Europe has to be seen as a single ecological ORU, different quality standards do not make sense. Minimum harmonisation could still be used however, for emission or other instrumental standards. But one must remember that there is little incentive for a country to take further measures as long as it must accept foreign products which only comply with the minimum standard. This is true whether these are product or production standards. The incentive may be greater if foreign products which do not comply with the stricter national standard can be excluded, resulting in partial market segmentation.

²⁵ This concept is similar to a bubble solution. But I am not talking here about tradeable permits.

²⁶ This may not even be possible for technical reasons or because some members produce less pollution than its reduction share would be.

The formation of groups of member states using different standards has already been proposed by Weinstock in 1983 (p. 37). More recently, a similar suggestion was made by Scharpf (1994: 486f., 1996: 124f., 1999: 153ff), who proposes the formation of two groups of member states using two different standards, stricter ones for developed countries, less strict ones for less developed countries. In general, groups may be formed according to several different principles. First of all, fixed groups could be formed according to the countries' gross national products per capita, e.g. a group of poor, a group of middle, and a group of rich countries. The richer the states, the stricter the environmental standards would be. This solution would only be for purely distributional purposes. Its disadvantage is that it does not take account of spillovers which occur in cases where the EU is a single ecological ORU. It does not seem very fair if, for example, a state which causes a substantial amount of negative externalities for its neighbours (or, more generally, which contributes more than average to the problem) is required to undertake much less than the neighbours. But this may be accepted for purely distributional reasons.

Secondly, the composition of the groups could vary according to the environmental problem to be solved. Again, there are two possibilities: either each member state is assigned to one of two or more groups using different norms in a certain policy; or there is one European standard but a group of member states is allowed to employ stricter standards on a voluntary basis. The latter concept differs from minimum harmonisation in that it applies to groups of states and not only to individual member states. A group of member states with similar preferences could more easily maintain a higher level of protection against the market forces. A greater market share might mean that these states would be less vulnerable to competitive disadvantages. Such a solution could be based on the new opportunity for closer co-operation provided for by the Treaty of Amsterdam.

A third form of differentiation could be European regulation which allows for multiple speeds. Individual member states or groups of member states would be allowed to comply with the EU standards at a later stage. When they should comply would depend on several factors such as their economic capacity, the state of the environment in terms of the problem to be regulated the standards used before compliance with the EU standard, the distributional goals, and so on. The time by which each member state or group of member states must comply with the EU standard could be given as a fixed date, or other rules could be applied, for example states would have to comply when they reach a certain gross national product per capita. Basically the concept of multiple speeds means the same as derogation periods, which has always been widely used in EU environmental policy.

There is another important question related to the concept of a differentiated EU environmental policy. Who decides the levels of protection, the standards, or the derogation periods, which will apply to each of the groups of member states? Should the decision be taken by the EU - using the usual procedures? Or is it the subgroups which should decide the standards? Both fiscal and functional federalism tell us that all the members of each ORU should decide. Therefore, in cases where the EU has to be considered a single ecological ORU, we can conclude that it is the EU as a whole which must make the decisions on the overall quality goals, as well as the minimum standards, differentiated standards, or the derogation periods for the sub-ORU. In addition, each member state should participate in the whole system in some way. As far as minimum harmonisation is concerned, the individual members or groups of member states which are striving for stricter regulation should decide on the stricter standards by themselves if mutual recognition is the basic rule. However, if the front-runners are to be allowed to protect their markets against products from states using only minimum standards, again it is the EU which should decide.

If a product causes negative externalities so that the market outcome is not pareto-efficient and must therefore be regulated, and if different national product standards are considered to be trade barriers, then the product standards must be harmonised throughout the EU. Protection of national markets would not be allowed in order to avoid the costs of segmentation of the internal market. This situation may overlap with the situation discussed above where the EU is a single ecological ORU. For example, in the case of car emissions, the EU is a single ecological ORU because the gases cause wide-ranging air pollution; and it is a single economic ORU because products are concerned. The same is true for noise emission standards for aeroplanes. On the other hand, the environmental problem may be local or regional, like noise from lawn-mowers. However, since this product is traded throughout the internal market without barriers, standards must be harmonised.

If market segmentation is to be avoided at all costs, total harmonisation is the only solution. The practical problem here is the interests of member states. Whenever they opt for different levels of protection, negotiations in the Council will be difficult and the result will not usually be optimal from an environmental point of view. But once again there are intermediate solutions between total harmonisation and the complete nationalisation of the problem. Here too, minimum harmonisation, the formation of groups of member states, and multiple speed solutions are possible. The groups of member states resulting from the three concepts need not form a geographical unit of territory if there is no ecological reason for it. The question here is, which rule to apply to regulate trade between the different groups. There are again two ways of dealing with the problem: mutual recognition or allowing trade barriers.

Mutual recognition avoids market segmentation. A "race to the bottom" is ruled out since standards are fixed for the two or more groups. Because the whole regulatory concept is agreed by all concerned, no single state is allowed to adapt its standard downwards or to change groups of its own volition. There is therefore no more regulatory competition. There are competitive advantages or disadvantages for the industries concerned *between* the groups, but not *within* the groups themselves. If the groups are formed in accordance with preferences and distributional considerations, such a system leads to an advantage for the poor states. In a way it is discrimination against the rich states, but they accept it voluntarily because they prefer the stricter standards. The worst scenario is that this solution may work like minimum harmonisation, because there is a limit to downward competition and the stricter standards may not be enforceable. If stricter standards lead to more expensive products, and if consumers act perfectly rationally and not in an environmentally friendly manner, then only those products which comply with the less ambitious norms will be bought. But what consumers buy will also depend on the other qualities of the products. Moreover, the degree of competitive disadvantage suffered by the group employing the stricter standard will depend on its market share. It does not follow *a priori* that only the products which comply with the least ambitious standard will survive.

In addition, consumers can be informed about the different standards and the different environmental qualities of the products. In countries which have a high preference for environmental protection and which therefore apply stricter standards, there might also be some willingness to pay for a higher level of protection. There need not necessarily be a dissonance between consumer action and voter action. Information regulation is unlikely to be successful as long as the standards affect only negative externalities which do not have any direct effect on the consumer herself, as in the case of car emissions. It will be more successful if the standards affect qualities of the product which do have an effect on the consumer herself, as in the case of noise from lawn-mowers.

Allowing trade barriers between the groups would lead to partial market segmentation. The market is divided into two or three areas, but there are not 15 to 20 national standards. The

environmental goal is achieved at different levels of protection according to the preferences of each group. This applies in instances of local or regional environmental problems. Whenever the problem is such that the EU is the ecological ORU, the level of protection achieved is the result of the aggregate effects of the different standards. The only difference here is the level of contributions made to the solution. This solution makes it more difficult for the states which use the less stringent standards to export products. But it does not discriminate against the front-runner states or group. It could even result in further states adopting the stricter standards. The more members the groups have, or, the larger their market share is, the more easily this will work.²⁷

Both solutions involve a trade-off between the conflicting goals of a common, non-segmented market on the one hand, and a high level of environmental protection on the other. Mutual recognition retains more of the first goal, trade barriers permit more of the second goal. Mutual recognition makes it easier for the poorer states to gradually catch up economically, because there is nothing to prevent them exporting products which are less environmentally friendly. As far as product standards are concerned decisions about quality goals, the grouping of member states, different standards and trade rules should again all be made by the EU as a whole because the EU is to be regarded as a single economic ORU.

The EU as a single economic ORU: distortion of competition

As we saw in section 3, distortion of competition is not in itself a valid argument for the harmonisation of environmental standards. Neither uniform nor differentiated standards will ever be strictly competition neutral. Competition conditions are influenced by many factors. A particular environmental standard may give a particular company, or a particular economic sector or member state, a competitive advantage or disadvantage compared with another standard. This may or may not be regarded as distortion depending on the specific circumstances.

As far as environmental policy is concerned it only makes sense to talk of distortion of competition where there is excessive environmental dumping. This might be the case, in the first instance, if a member state uses very lax standards which lead to much cheaper production processes and products *and* if there are serious environmental spillover effects. This state thus has a competitive advantage at the (environmental) expense of its neighbours. Secondly, lax standards which are legitimately set on the basis of economic considerations and political preferences may cause (economic) spillovers, even if the environmental problem is local or national in scope. If the cheaper products are traded throughout the entire internal market in a regime of mutual recognition, the more ambitious environmental goals of the other states will be undermined as a result of the competition. In both cases regulation at the EU level is justified.

Again, the total harmonisation of standards is not necessary. Minimum harmonisation would suffice to prevent dumping. Also, several groups of countries with different standards could be formed. For states or groups which want to use standards that are stricter than the minimum level, the same problems will arise as those discussed above— depending on the particular trade regime. In a mutual recognition regime, if the minimum level is much stricter than the level preferred by the "dumping state(s)", some form of compensation for the loss of this "natural" advantage could be considered. But it should only be considered in the second instance where environmental externalities are absent. Another solution could be that "dumping states" are allowed to use standards below the minimum standard but protectionist measures against products from such states are also allowed. This might be more practicable for product standards than for production standards, since goods cannot always be easily identified as having been produced to a particular production standard.

²⁷ An example of such an effect in the area of regulation of international financial markets is given in Genschel and Plümper 1997.

2. Member states as an ORU

In order to solve environmental problems which affect only some, but not all, the member states, an ORU consisting only of the affected member states could be created, for example for the protection of the water quality of the rivers Rhine and Danube, the Mediterranean and the North Sea. An ORU of this type would only be set up because of the ecological scope of the problem. The common market does not play a role here, since the economic ORU is the EU as a whole.²⁸ The decisions on the level of protection, the type of standards, whether uniform or differentiated, and so on, should, in this case, be taken by the members of the ORU, and not at the EU level. First of all, this is in accordance with the equivalence principle and keeping with the problem itself, and, secondly, finding an agreement might be easier among a smaller number of members.

In principle the creation of such ORUs could be based on the flexibility clauses of the Treaty of Amsterdam. However, the so-called "closer co-operation" requires that at least half of the member states participate, a condition which will not often be fulfilled. It may not be possible for member states to co-operate on the basis of the Treaties of the EU, but on the basis of other treaties. There are examples of this, in particular the Rhine regime. However, the advantage of co-operation within the framework of the European Treaties is that existing institutions and procedures can be used.

Such transnational ecological areas will sometimes include states which are not members of the EU. For example, the ecological problems of the Alps, mentioned above, generally affect the non-member Switzerland too. In such cases an ORU consisting of both member states and non-member states should be possible. Here again the question arises as to whether such an ORU should be created on the basis of the EU Treaties or outside the Treaties. If only one or a few member states and more non-members are affected it seems natural for the co-operation to take place outside the Treaties. If the numbers are the other way around however, a form of functional association within the Treaties should be considered instead.

3. Transnational co-operation of subnational jurisdictions

The next step is to consider co-operation in cases where the problem does not affect several member states in their entirety, but only in parts, as in the earlier example of Lower Saxony not being interested in the solution of the environmental problems of the Alps. Transnational co-operation between subnational jurisdictions, like regions, *Länder*, or municipalities, may be desirable for ecological reasons. Such ORUs could include both member states and subnational units, or subnational units only. As with purely member state ORUs, they are only justified on ecological grounds. No spillovers should exist. In addition, ORUs which consist (partly) of subnational jurisdictions should not be allowed to create trade barriers. Again, the decisions should be taken by the members themselves.

There is no provision for co-operation of this type in the European Treaties. Usually, co-operation among jurisdictions at different levels of government simply does not take place. In such situations the competencies are generally shifted up to the next level of government. There is no doubt that co-operation of this type is needed, but establishing it as ORUs is difficult. Should they be based on the European Treaties or should they be formed outside the Treaties? Is it at all possible for a subnational jurisdiction to become a party to an international agreement? In general, international law excludes this. However, transnational co-operation between

²⁸ However, if the environmental problem or its regulation has effects on the functioning of the internal market, then once again the EU should be the responsible ORU. For example, the erection of trade barriers cannot be allowed.

neighbouring communities can take place under a Council of Europe convention.²⁹ Thus, it might be easier within the EU for such co-operation to be facilitated and for decision-making procedures to be found for it.

4. Member states and subnational jurisdictions

Member states and subnational jurisdictions should decide their own environmental policies whenever there are no ecological or excessive economic spillovers. Examples are local or regional air quality standards (e.g. smog regulations), protection against noise from non-mobile sources, quality standards for small bodies of water, or waste management. Nothing needs to be regulated at the EU level as far as these problems are concerned. They are best decided by the member states or by communalities and counties. The creation of functional ORUs should also be possible at the subnational level. Co-operation between several counties or municipalities, for example in the area of waste management, should be permitted.

A consequence of the concept developed above might be that there will not be very many legal responsibilities left to the nation state.³⁰ From an ecological point of view there are simply not many environmental problems which can be adequately dealt with at the national level. Many more problems would be better solved by subnational or transnational ORUs adjusted to the scope of the problem. And yet there is also a wide range of problems which have to be solved at the EU level either as result of their ecological scope or because of their economic effects on the functioning of the internal market. However, some legal competencies already exist at the EU level where there is no necessity for them. For example, the quality of local bodies of water used for bathing need not be decided at the European level. In such instances giving the legal responsibilities back to member states or subnational units should be considered. In general, the allocation of legal competencies should be flexible and open to change at any time, in accordance with scientific knowledge and data. However, where the EU is the appropriate level for tackling an environmental problem, the Union should be given the necessary capacities for monitoring and sanctioning, in case enforcement in the member states is not sufficient. It is not the place here for a discussion of the issue of the democratic deficit in the EU. But one must remember that EU decision-making is still intergovernmental in character and is thus not sufficient democratic legitimation for far-reaching environmental policies.

5.2 *Comparison to existing EU law and to other conceptions*

There are many concepts which deal with a more flexible structure for the future European Union, such as multiple speed Europe, concentric circles, differentiated integration, variable geometry, flexible integration, avant-garde, and Europe à la carte.³¹ The concept developed above differs from all of these in that it is not a general concept, but relates exclusively to environmental policy. In this section, I will briefly compare my proposal to the prevailing law, to functional federalism, and to some of the concepts just mentioned.

Under European primary law individual member states have been able to deviate from commonly set environmental standards since the Single European Act of 1987 introduced environmental policy into the Treaties. This even applies to matters concerning the functioning of

29 European Outline Convention on Transfrontier Co-operation between Territorial Communities or Authorities (no. 106) and explanatory report, Convention opened for signature on 21 May 1980, Council of Europe publications

30 See also Zimmermann and Kahlenborn 1994: 239.

31 For an overview see Giering 1997

the internal market. The Treaty of Amsterdam also provides for collective deviation in the form of closer co-operation.³² But the directions which deviations may take are restricted - member states or groups of member states are allowed to strive for a higher level of protection but not to use lower ones. In the proposal developed above the EU itself may introduce differentiated standards. There is a single and commonly defined level of protection but this may be implemented by the use of regionalised standards. These standards are thus not "deviations", they are merely either above or below average. This is conceptually different from a commonly set standard and deviations from it. In the past secondary EU law has occasionally provided for minimum harmonisation and there have been many exceptions. In practice the result was also "regionalisation". But the underlying concept was the uniform standard. Positive, intentional, commonly decided differentiation would be a new approach.

Essentially, the concept developed here is based on the idea that co-operation of member states or jurisdictions should take place within the Treaties. Under existing law this would not be possible for all the forms of ORUs proposed here. The Treaties do not provide for transnational co-operation of subnational units, nor for co-operation with non-members. Whilst introducing such provision does not seem to pose a problem in the former case, for example on the basis of the convention of the Council of Europe mentioned above, the functional integration of non-members might threaten the concept of the Union. In all other cases the substantial conditions for creating ORUs and sub-ORUs are the same as for "closer co-operation". In particular, there is compliance with the condition which stipulates that trade barriers must not be erected and that there must be no severe discrimination of trade and among citizen.

However, compared with the proposed creation of ecological ORUs, the establishment of closer co-operation is subject to far more formal restrictions. Whereas "closer co-operation" under the Treaty is an *ultima ratio*, the formation of ORUs ought to be normal procedure. Whereas closer co-operation requires at least a majority of member states, ORUs should be created and justified on the basis of ecological facts and economic considerations, so that spillovers are minimised regardless of the number of member states involved. Whereas further member states must have open access to "closer co-operation", it is not desirable for ecological ORUs if the boundaries were correctly drawn from the outset. It is desirable, however, in cases where the EU is a single ORU and there are sub-ORUs which use different standards for distributional reasons. Voluntary membership of a sub-ORU which uses stricter standards should be possible at any time, whereas membership of a sub-ORU which uses less strict standards is not permissible in order to prevent the overall quality goal being undermined. As far as decision-making is concerned, "closer co-operation" follows the same rule as the ORU concept - decisions should be taken only by members. The establishment of "closer co-operation" is decided in an intergovernmental way, i.e. by the EU as a whole. The creation of ORUs below the EU level need not be subject to a Council decision. But member states should at least be obliged to notify the Commission of their intention to create an ORU, so that the Commission and other member states or jurisdictions can investigate whether the new ORU will cause any ecological or economic spillovers and whether it should have additional members.

The proposal for a differentiated environmental policy differs from fiscal federalism in that it is more flexible than the allocation of competencies to two or three hierarchical levels. Neither is it the same, however, as functional federalism. It differs in some important aspects from the FOCJ concept of Frey and Eichenberger. First of all, the boundaries of ORUs in my conception are not completely flexible. They are determined by the internal market, ecological facts, and existing political borders. Membership is also not determined by competition, but primarily by the scope of ecological and economic spillovers; political preferences are of secondary importance. Since the environmental goods provided by the ORU have the property of non-

32 For a more detailed account of the existing law and an evaluation of the opportunities for more flexibility see Epiney 1999.

excludability, individuals face a collective action dilemma. The provision of these goods cannot rely on competition. Ecologically defined ORUs have to be monopolies. Secondly, only jurisdictions may be members of the ORU, individuals only belong to them indirectly. Thirdly, political decision-making follows the procedures normally used by jurisdictional members, which may be directly democratic, but will mostly be of the representative democracy type. At the level of the ORU itself, the procedures for decision-making among the jurisdictional members will be provided by the EU Treaties, at least where the ORU is the EU level. At other levels, EU procedures could be adopted or the procedures might simply be negotiations.

Unlike the concepts of flexible integration, differentiated integration, and Europe à la carte, the proposal for a differentiated environmental policy aims to work within the Treaties and to keep the *acquis communautaire*. It does not call into question the idea of a coherent European Union which in principle is fully integrated, nor the idea of the internal market. It is also completely different from the idea of a Europe of concentric circles, since there is no fixed membership in a group which is more or less close to the core of Europe. ORUs are functional units and membership may vary considerably according to the specific function or environmental problem to be dealt with. The same is true for the avant-garde conception. Even if there were an avant-garde contributing more to protecting the environment against a specific problem, there would not be a fixed set of avant-garde member states.

The proposal which is made here is closest to the concepts of a multiple speed Europe and a variable geometry Europe. The reasons underlying the call for greater flexibility in integration, or in other words, for creating ORUs, are to be found in the different ecological needs, and different capacities and political desires to contribute to the solution of the problem. The approach is sectoral and based on the Treaties. The aim is the creation of functional regimes. While the overall scope is basically determined by the member states, non-members may be included if this makes ecological sense. The concept differs from variable geometry only in two respects. Firstly, decisions are taken by the member of a specific ORU, not generally by all members of the Union. Secondly, it is restricted to environmental policy.

6. Conclusion

In the second section we saw that the harmonisation of environmental standards is not necessary either for ecological, economic, or political reasons, and that uniform standards are only desirable under very specific conditions. Standards should be adjusted to the scope and needs of the ecosystem, to protection costs, and to the preferences of the population. But there are good reasons for having some legal responsibilities for environmental policy at the EU level of government. Transboundary pollution requires a supra-national response. Olson's principle of equivalence may serve as a first normative guideline for the allocation of legal competencies to different levels of government - EU, national, sub-national. It does not prove to be flexible enough, though, in the case of environmental policy. Functional federalism provides a more flexible approach, but it does not seem entirely appropriate either. Firstly, an enormous number of environmental jurisdictions would be necessary. Secondly, for environmental problems, the boundaries of a jurisdiction must be determined by ecological facts and cannot be subject to competition. Thirdly, interfunctional spillovers are difficult to deal with.

The European goal of the creation of a common market leads to a conflict between undesirable market segmentation by national or regional standards on the one hand, and the goal of keeping a high level of environmental protection on the other. Both of the market creation measures - harmonisation of standards and mutual recognition - have their weaknesses as far as the environmental goal is concerned. The political interests of member states are diametrically opposed. In most cases rich states have an interest in harmonisation at a high level of protection, while poor states prefer mutual recognition or, at least, harmonisation at a low level of

protection. In some cases it is the other way round. Either way there is a group of member states which advocate harmonisation at the EU level. As a result, the harmonisation approach dominated EU environmental policy for almost two decades. However, as there were always a number of states which were not interested in harmonisation, in practice the intended harmonisation often turned into uncontrolled re-nationalisation. A gradual move away from the harmonisation approach began at the end of the eighties, the last step of which is represented by the flexibility clause in the Treaty of Amsterdam. The Eastern enlargement raises the question of whether the accession countries in their present economic situation can afford a complete environmental *acquis* at all. In addition, their accession could result in environmental policies being decided at a lower level of protection in future. Instead of taking such a risk, the introduction of opportunities for flexible integration should be considered.

A concept for a flexible European environmental policy should be designed along the lines of a variable geometry Europe or a multiple speed Europe. Legal responsibilities should be assigned carefully to the EU level. Environmental jurisdictions should primarily be created according to ecological needs. But the main goal of the EU, the creation of a common market, must be fully respected. This means that where products are concerned the EU level has to be the responsible jurisdiction. The economic interests and political preferences of member states should also be taken into consideration. If appropriate, redistributive solutions based on differentiated contributions can be developed, in order to achieve the common environmental quality goals. Environmental jurisdictions within the EU need not consist of all member states in all cases. If it is ecologically desirable, non-member states should participate as well. Legal instruments used within this concept of flexible environmental integration might be minimum harmonisation, the formation of groups of member states employing different standards, and multiple speed solutions.

References

- Buchanan, James M. (1965), An economic theory of clubs, in: *Economica* 32, 1-14.
- Carius, Alexander, von Homeyer, Ingmar and Bär, Stefanie (1999), The Eastern Enlargement of the European Union and Environmental Policy: Challenges, Expectations, Speed and Flexibility, in: Holzinger, Katharina and Knoepfel, Peter (eds.), *Environmental Policy in a European Union of Variable Geometry? The Challenge of the Next Enlargement*. Basel: Helbing&Lichtenhahn (forthcoming)
- Eckrich, Klaus (1994), *Die Harmonisierung des Umweltschutzes in der Europäischen Union*. Frankfurt a.M.: Peter Lang.
- Eichenberger, Reiner (1996), Eine "fünfte Freiheit" für Europa: Stärkung des politischen Wettbewerbs durch "FOCJ", in: *Zeitschrift für Wirtschaftspolitik* 45, 110-130.
- Epiney, Astrid (1999), Flexible Integration and the Environmental Policy in the European Union: Legal Aspects, in: Holzinger, Katharina and Knoepfel, Peter (eds.), *Environmental Policy in a European Union of Variable Geometry? The Challenge of the Next Enlargement*. Basel: Helbing&Lichtenhahn (forthcoming)
- Frey, Bruno S. (1996), A Directly Democratic and Federal Europe, in: *Constitutional Political Economy* 7, 267-279.
- Frey, Bruno S. (1997), *Ein neuer Föderalismus für Europa: Die Idee der FOCJ*. Tübingen: Mohr Siebeck
- Frey, Bruno S. and Eichenberger, Reiner (1996), FOCJ: Competitive Governments for Europe, in: *International Review of Law and Economics* 16, 315-327.
- Genschel, Philipp and Plümper, Thomas (1997), Regulatory competition and international cooperation, in: *Journal of European Public Policy* 4, 626-642.
- Giering, Claus (1997), Vertiefung durch Differenzierung – Flexibilisierungskonzepte in der aktuellen Reformdebatte, in: *Integration* 1997, 72-83.
- Hines, Frances (1999), Co-operation and Shared Responsibility: New Challenges for Environmental Policy in Hungary, Poland and the Czech Republic, in: Holzinger, Katharina and Knoepfel, Peter (eds.), *Environmental Policy in a European Union of Variable Geometry? The Challenge of the Next Enlargement*. Basel: Helbing&Lichtenhahn (forthcoming)
- Holzinger, Katharina (1991), Does Legal Harmonisation really "Harmonise" the National Environmental Policies in the European Community? in: Pal, Leslie A. and Schultze, Rainer-Olaf (eds.), *The Nation-State versus Continental Integration. Canada in North America – Germany in Europe*. Bochum: Brockmeyer, 297-313.
- Holzinger, Katharina (1994), *Politik des kleinsten gemeinsamen Nenners? Umweltpolitische Entscheidungsprozesse in der EG am Beispiel der Einführung des Katalysatorautos*. Berlin: edition sigma.
- Holzinger, Katharina (1997), The Influence of the New Member States on EU Environmental Policy-Making. A Game-Theoretic Approach, in: Andersen, Mikael Skou and Lieferrink, Duncan (eds.), *The Innovation of European Environmental Policy*. Kopenhagen: Scandinavian University Press, 59-82.
- Janning, Josef (1997), Dynamik in der Zwangsjacke – Flexibilität in der Europäischen Union nach Amsterdam, in: *Integration* 1997, 285-291.
- Kahlenborn, Walter and Zimmermann, Klaus W. (1994), Die europäische Umweltunion in Theorie und Praxis, in: *Aus Parlament und Zeitgeschichte*. Beilage zur Zeitschrift Das Parlament B49/94, 33-39.
- Kerber, Wolfgang (1998), Zum Problem einer Wettbewerbsordnung für den Systemwettbewerb, in: *Jahrbuch für Neue Politische Ökonomie* 17, 199-230.
- Klötzli, Frank (1983), *Einführung in die Ökologie*. Bern: Hallwag.

- Knill, Christoph and Lenschow, Andrea (1999), New Environmental Policy Instruments as a Panacea? Their Limitations in Theory and Practice, in: Holzinger, Katharina and Knoepfel, Peter (eds.), *Environmental Policy in a European Union of Variable Geometry? The Challenge of the Next Enlargement*. Basel: Helbing&Lichtenhahn (forthcoming)
- Long, Ngo van and Siebert, Horst (1991), Institutional Competition Versus ex-ante Harmonisation: The Case of Environmental Policy, in: *Journal of Institutional and Theoretical Economics (JITE)* 147, 296-311.
- Oates, Wallace E. and Schwab, Robert M. (1988): Economic Competition Among Jurisdictions: Efficiency Enhancing or Distortion Inducing? in: *Journal of Public Economics* 35, 333-354.
- Olson, Mancur (1969), The Principle of "Fiscal Equivalence": The Division of Responsibilities Among Different Levels of Government, in: *American Economic Review* 59, 479-487.
- Rehbinder, Eckart and Stewart, Richard (1984), *Environmental Protection Policy*, Vol. 2 of Integration Through Law. Europe and the American Federal Experience. Berlin-New York: de Gruyter.
- Remmert, Hermann (1992), *Ökologie*. 5. Auflage, Berlin: Springer.
- Scharpf, Fritz W. (1985), Die Politikverflechtungsfalle: Europäische Integration und deutscher Föderalismus im Vergleich, in: *Politische Vierteljahresschrift* 26, 319-356.
- Scharpf, Fritz W. (1994), Mehrebenenpolitik im vollendeten Binnenmarkt, in: *Staatswissenschaften und Staatspraxis* 5, 475-501.
- Scharpf, Fritz W. (1996), Politische Optionen im vollendeten Binnenmarkt, in: Jachtenfuchs, Markus and Kohler-Koch, Beate (eds.), *Europäische Integration*, UTB, Opladen: Leske + Budrich, 109-140.
- Scharpf, Fritz W. (1999), *Regieren in Europa. Effektiv und demokratisch?* Frankfurt und New York: Campus
- Schneider, Gunter and Rolf-Ulrich Sprenger (1990), Mehr Umweltschutz in der EG – aber wie? Überlegungen zu einer neuen Strategie der Gemeinschaft beim Einsatz umweltpolitischer Instrumente, in: *Ifo-Schnelldienst* 16-17, 15-32.
- Schulze, Ernst-Detlef and Mooney, Harold A. (eds.) (1994), *Biodiversity and Ecosystem Function*. Berlin: Springer.
- Soveroski, Marie (1999), European Community Enlargement and the Development of Environmental Policy, in: Holzinger, Katharina and Knoepfel, Peter (eds.), *Environmental Policy in a European Union of Variable Geometry? The Challenge of the Next Enlargement*. Basel: Helbing&Lichtenhahn (forthcoming)
- Straubhaar, Thomas (1995), Ein Europa des funktionalen Föderalismus: Mehr als ein Denkmödel? in: *ORDO – Jahrbuch für die Ordnung von Wirtschaft und Gesellschaft* 46, 185-202.
- Tiebout, Charles M. (1956), A Pure Theory of Local Expenditures, in: *Journal of Political Economy* 64, 416-424.
- Vanberg, Viktor (1998), *Standortwettbewerb, Demokratie und Rent-Seeking*, paper delivered at the conference "Kooperative Politikverfahren" of the "Institut für Wirtschaft und Politik" at the University Witten/Herdecke, October 8-10, 1998 in Witten.
- Weinstock, Ulrich (1983), Nur eine europäische Umwelt? in: *Zeitschrift für Umweltrecht und Umweltpolitik* 1, 1-46.
- Zimmermann, Klaus W. and Kahlenborn, Walter (1994), *Umweltföderalismus. Einheit und Einheitlichkeit in Deutschland und Europa*. Berlin: edition sigma.