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Helmut Karl and Omar Ranné *

European Environmental Policy between Decentralisation and Uniformity

The Idea of Environmental Federalism

Does the European Union require a common environmental policy? While there are a number of arguments in favour of shifting competences for environmental policy to the European level, there are also fields in which decentralised policies appear to make more sense. The following article reviews the pros and cons of centralism and decentralism in European environmental policy and concludes that the Union must integrate elements of both options into its constitutional order.

Only twenty-five years ago, in 1972, a conference of the Heads of State and Government of the European Community concluded that a common environmental policy was needed, and since then some hundred items of legislation on this area have been enacted. Also, environmental policy was built into the Treaty by the Single European Act of 1987 and finally became part of the Treaty on European Union of 1992 (Maastricht Treaty). The latter requires Union policy to aim at preserving, protecting and improving the quality of the environment at a high level, protecting human health, prudent and rational utilisation of natural resources and promoting measures at international level to deal with regional or worldwide environmental problems.¹ This extension of competences will almost certainly lead to further centralisation. On the other hand, the Principle of Subsidiarity² seems to limit the European authorities' powers by allowing activities "only if and in so far as the objectives of the proposed action cannot be sufficiently achieved by the Member States and can therefore, by reason of the scale or effects of the proposed action, be better achieved by the Community". Moreover, it is emphasised that the diversity of situations in the various regions of the Community should be taken into account. So the Treaty reflects a striking ambivalence concerning the locus of regulatory authority.³ However, this should not come as a surprise, since the question if centralisation or decentralisation is the preferable option for dealing with a particular environmental problem has to be decided by considering a number

of factors, and the answer might differ from case to case.

The purpose of this paper is twofold. First, we draw a rough sketch of an adequate institutional order for European environmental policy from an economic perspective.⁴ Second, we confront this blueprint with reality and especially with some current developments in order to identify important emerging problems. Our starting point is the discussion of some important results developed in the theory of environmental federalism and the closely connected concept of institutional competition. These will help us to separate the arguments influencing the decision on how different responsibilities should be divided between the Union and the member states.⁵ Then we shall turn to some specific fields of environmental policy in Europe. After a cursory look at Union activities regarding air and water pollution and nature

¹ See Article 130r.

² See Article 3b.

³ This resembles the American experiences described by M. L. Cropper and W. E. Oates: *Environmental Economics: A Survey*, in: *Journal of Economic Literature*, Vol. 30, 1992, pp. 675-740, here p. 694.

⁴ See also K. W. Zimmermann and W. Kahlenborn: *Umwelt-föderalismus: Einheit und Einheitlichkeit in Deutschland und Europa*, Berlin 1994, pp. 207; and H. Karl: *Europäische Umweltpolitik*, in: P. Klemmer (ed.): *Kompodium der Europäischen Wirtschaftspolitik*, Munich 1997 (forthcoming) for a comprehensive overview of European environmental policy.

⁵ We shall neither consider explicitly whether the member states should delegate competences to regional authorities (which will often be appropriate and will be mentioned occasionally) nor whether political action is justified in the first place (with market failure and superiority of a concrete political mechanism as necessary conditions). However, our restriction does not belittle the importance of those questions.

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protection, our attention will be focused on waste management.

Fiscal Equivalence

An important reference point for the optimal design of the institutional structure in environmental management is provided by the principle of fiscal equivalence. It is realised when there is "a match between those who receive the benefits of a collective good and those who pay for it".⁶ This guarantees, as far as possible, the inclusion of all advantages and disadvantages in a political decision – the optimal regulatory authority is neither sender nor recipient of (technological) externalities.⁷ Since environmental quality and environmental goods are collective goods with a spatial dimension, i.e. they affect a delineated geographical area, a straightforward application of the principle seems to be possible. However, a perfect spatial overlapping of benefits and costs requires creating a specific governmental unit for every particular environmental good or system – probably a solution that would prove too costly and complex.⁸ So we content ourselves with a less ambitious procedure and take jurisdictional boundaries as given. Then the competences for mainly local, regional or national public goods (i.e. their benefits are mainly confined to one member state) are left to the national politicians, while regarding the responsibility for goods with transboundary effects an assignment to the Union has to be considered. In the following paragraphs we will illustrate why fiscal equivalence as the guiding principle of an efficiency orientated environmental policy in Europe supports a decentralised approach, and then turn to some of the (alleged) difficulties voiced by the advocates of centralisation.

The Case for a Decentralised Approach

In many cases the major part of the costs and benefits of environmental protection will be confined to one member state. Since these costs and benefits

are likely to vary substantially across countries, the optimal level of environmental quality will also vary. Centralisation or harmonisation⁹ aiming at an average ambient level of environmental quality in the Union will induce welfare losses due to oversupply of the public good in some nations and undersupply in others. The differences can be attributed to quite a few factors.¹⁰ The regeneration of environmental resources and the natural assimilative capacity are subject to regional conditions that vary from one region to another. Also, the environmental potentials and the causes of pollution or degradation differ substantially, and the valuation of the environment is likely to vary widely depending on preferences, income levels, cultural differences, population density and so on.

An even more sceptical view must be taken of the harmonisation of regulatory parameters, a policy pursued with uniform emission limit values, the prevailing instrument of European environmental policy. By neglecting all the differences in natural endowment normally neither will identical quality standards be realised nor will firms in different countries be faced with identical costs,¹¹ so that this course of action will not be successful even in this sense. Moreover, information about local patterns and preferences required for differentiated activities is most likely to be missing and difficult to obtain on the European level. Another disadvantage of centralisation can be seen in the presumably higher administration, implementation and control costs – especially because in the EU new administrative authorities would be needed, and national routines would have to be replaced.¹²

Additionally, and probably more important, the case for a decentralised approach is supported by dynamic factors.¹³ In a setting with autonomous governments and open markets for goods and factors mobile citizens and firms can migrate to locations offering them an optimal mixture of public goods and tax burden thereby maximising their utility. This process, also called "voting by feet",¹⁴ will limit the room for

⁶ See M. Olson: The principle of 'fiscal equivalence'. The division of responsibilities among different levels of government, in: *American Economic Review, Papers and Proceedings*, Vol. 59, 1969, pp. 479-487, here p. 483.

⁷ See B. Huckestein: *Umweltpolitik und Föderalismus. Ökonomische Kriterien für umweltpolitische Kompetenzen der Europäischen Gemeinschaft*, in: *Zeitschrift für angewandte Umweltforschung*, Vol. 6, 1993, pp. 330-339, here p. 331.

⁸ In individual cases (e.g. river systems, lakes), though, establishing a special functional organisation responsible for the management of the public good might be a viable alternative. Some authors see more room for fostering competition among jurisdictions by federalism based on "functional overlapping competing jurisdictions". See BS Frey and R. Eichenberger: *Competition among Jurisdictions: The Idea of FOCJ*, in: L. Gerken (ed.): *Competition among Institutions*, Basingstoke and London, 1995, pp. 209-229.

⁹ Harmonisation means the movement toward identical standards or regulations, and is therefore closely connected with centralisation. Product standards relate to the characteristics of a good, while process standards relate to the way in which a good is produced.

¹⁰ See H. Karl and P. Klemmer: *Coordination Problems between the Regional and Environmental Policy in the FRG*, RWI-Papers No. 39, Essen 1995, p. 13; or H. Siebert: *Economics of the Environment*, Berlin 1995, p. 170.

¹¹ This last point seems to lie at the heart of the demands for harmonisation. However, from an economic viewpoint cost differentials are the very reason for the division of labour.

¹² See K. W. Zimmermann and W. Kahlenborn, *op. cit.*, p. 214.

politicians and bureaucrats to follow selfish motives and force them to act more flexibly. Moreover, it can be regarded as a device for restricting rent-seeking activities by powerful interest groups, and constrains politicians to give more attention to people's preferences. In order to attract mobile factors of production (especially financial capital and skilled labour) while increasing the productivity and income of the immobile factors owned by the inhabitants, the advantages and disadvantages of alternative environmental regulations have to be taken into account. Thus, decentralised environmental policy leads to an institutional competition between the member states that can be described as a discovery and control procedure setting incentives for searching for innovative solutions and imitating superior institutions. It ensures the best possible utilisation of knowledge and ideas spread among the heterogeneous individuals and not obtainable on the central level. By the way, a high regional environmental quality may be an important "soft" factor for locational decisions of firms and skilled employees, and this positive effect should not be neglected.¹⁵ Moreover, decentralisation may limit the negative consequences of wrong political decisions that are sometimes unavoidable in view of fundamental uncertainties about future developments. On the one hand, this is simply due to the fact that autonomous governments will try a wide range of different measures, increasing the chances of finding a satisfactory way. On the other hand, allowing citizens to draw comparisons with other arrangements facilitates the detection and correction of mistakes.

To sum up, a competitive regime of decentralised decision-making in environmental policy enhances static and dynamic efficiency, and can bring about solutions not even considered beforehand. However, this view may be criticised for being too optimistic; some popular reasons for scepticism will be discussed below.

Transboundary Externalities

The first important argument in favour of competences for supra-national authorities refers to the existence of spillovers (transboundary externalities) caused by stationary or mobile sources and products. In other words: in these cases realising fiscal equivalence implies dispensing with decentral environmental policy. If pollutants are transported across national borders (negative externality), the recipient nation bears the costs while the government of the country where the polluters are resident lacks

an incentive to internalise the damages. If the benefits of a public good extend over the borders of the financing country (positive externality) it will probably be supplied on a smaller scale than optimal from the community's point of view. It is true that in both cases negotiations are possible and may lead to efficient results, but both transaction costs and strategical behaviour such as increasing emissions to force higher compensations are severe obstacles. Another drawback consists in the fact that a bargaining solution would often comply with the victim-pays-principle which is generally considered unfair. Consequently, it can be seen as the task of the EU to encourage collaboration and enforce a European-wide commitment to the polluter-pays-principle. In the literature several instruments targeting transboundary externalities are discussed (e.g. transfrontier diffusion norms, liability law), and the EU should further their imposition.¹⁶

A second related area in which shifting competences to the European level seems to be a reasonable recommendation is the protection of global environmental media. Here, reaching international agreements will be necessary, and it might prove advantageous if the Union member states participate as a coalition and pre-coordinate their bargaining.

Finally, especially in nature protection network externalities might necessitate European activities. Sometimes the quality of the (regional/ national) public good nature or animal protection in one country depends on its provision in another country. For example, protection of migratory animals or genetic exchange might be seriously interfered with by the isolation of habitats. It follows that combined European efforts can support the development of a more efficient network of protected areas.

Summarising, the existence of spillovers implies the violation of fiscal equivalence in a purely decentralised political system, and consequently the institu-

¹⁵ On the concept of institutional competition see W. Kerber and V. Vanberg: *Competition among Institutions: Evolution within Constraints*, in: L. Gerken (ed.), op. cit., pp. 35-64; and L. Gerken: *Institutional Competition: An Orientative Framework*, in: L. Gerken (ed.), op. cit., pp. 1-31. The aspect of creation and disclosure of knowledge by competition between jurisdictions is also pronounced by M. Vihanto: *Competition Between Local Governments as a Discovery Procedure*, in: *Journal of Institutional and Theoretical Economics*, Vol. 148, 1992, pp. 411-436. The line of argumentation is very much in the spirit of Nobel Laureate F. A. von Hayek.

¹⁴ See C. M. Tiebout: *A Pure Theory of Local Expenditures*, in: *Journal of Political Economy*, Vol. 64, 1956, pp. 416-424.

¹⁵ See P. Klemmer: *Harmonisierung der Umweltpolitik in der EG*, in: *Wirtschaftsdienst* 5/1991, pp. 262-268, here p. 268.

¹⁶ For an overview see H. Siebert, op. cit., p.196.

tional competition approach might bring about unsatisfactory results. However, it will not always be necessary to transfer all competences (definition of quality standards and choice of instruments) to the European level, and there are other forms of transnational cooperation leaving more room for national characteristics.

The Regulation of Production Methods

A popular view mainly expressed in the richer member states but also by both the European Commission and the European Parliament regards different levels of environmental regulation concerning processes and production methods as distortions of competition in the Common Market. Countries imposing lower standards are accused of granting their industries indirect subsidies or being engaged in "ecological dumping".¹⁷ A more stringent regulation in one country will often induce higher abatement and production costs – at least for some industries – and might lead to a decline in competitiveness on international markets seemingly reducing national welfare.¹⁸ Moreover, since firms or internationally mobile capital might react by relocation politicians are supposed to be inclined to fix excessively lax standards. The attempt to attract firms or capital and create jobs might set in motion a destructive competition for the lowest standards. It is argued that in order to prevent this "race to the bottom" a central agency has to supervise the national standard-setting procedures; the easiest and apparently fairest solution seems to be harmonisation. Alternatively, sometimes trade restrictions are discussed, though rather seldom for the Common Market, but regarding trade with third countries.

In this context, one might distinguish between two views: in public opinion or in politics usually differing levels of regulatory parameters, e.g. the altitude of effluent fees or emission limit values, are considered distortive, while in contrast the theoretical literature

concentrates on the degree of internalisation of externalities.

The first view, often expressed by the demand to "level the playing-field" is seriously flawed and can easily be rejected. As mentioned above, the optimal level of environmental quality will vary from country to country, and moreover, even uniform levels of environmental quality will normally require differentiated charges, since environmental conditions like absorption and assimilation capacities also differ. So in this case different levels of regulation are not distortive, but a reflection of differing scarcities that must be mirrored in relative factor prices. Harmonisation induces inefficiency and impairs the international division of labour, because countries richly endowed with environmental capacity are prevented from making use of their comparative advantage.

The theoretical view is more sophisticated. It argues that centralisation is necessary because national policy-makers do not take into consideration all the opportunity costs of environmental degradation. The selected instruments do not lead to a complete internalisation, i.e. the marginal damages of pollution still exceed the marginal benefits – the observable comparative advantage is not "real", but only the outcome of a political failure. However, as long as no spillovers exist the disadvantages (welfare losses) are borne by the respective member states' electorate, while the trading partners even profit, because they can specialise in less polluting industries. In this case we can see no really convincing reason for intervention, though admittedly a distortion of competition at the expense of some industries can be confirmed. But the relevant information about costs and benefits of environmental protection in one particular member state is most likely to be missing in other countries or at the central European level. So it is impossible to detect an inadequate internalisation. This information problem also increases the danger that the issue will only be misused as a pretext for protectionist interests.

In the last few years another line of argument gained some interest; it can be traced back to the strategic trade policy models developed in the so called "new" international trade theory. These models show that subsidies for firms competing on international oligopolistic markets can improve national welfare by shifting rents from foreign to domestic firms.¹⁹ The same idea can be applied to our subject by replacing subsidies by cost reductions due to suboptimal internalisation.²⁰ However, "strategic ecological dumping" cannot be seriously recommended,

¹⁷ See H. Karl and O. Ranné: *Öko-Dumping – ein stichhaltiges Argument für ökologische Ausgleichszölle?*, in: *Wirtschaftswissenschaftliches Studium*, 1997 (forthcoming) for a closer analysis of the concept of "ecological dumping".

¹⁸ This statement is rather problematic, since it only holds true if one defines welfare in terms of "traditional" statistical concepts as the gross domestic product. Otherwise, if we take into account the welfare effects of improved environmental quality a more stringent (optimal) regulation nevertheless implies increasing welfare. By the way, most empirical studies see only a small influence by environmental protection costs on the competitiveness of industries.

¹⁹ In the traditional models firms compete on perfect markets with prices equal to marginal costs, so that no rents are earned. Thus, subsidies will only distort allocation and lead to welfare losses for the subsidising country.

because it relies heavily on problematic assumptions, and a successful realisation by a national government would require too much non-obtainable information.²¹ So again, the costs in terms of welfare losses will probably fall on the country refraining from internalisation.

Harmonisation of Product Norms

Country-specific standards for products may (intentionally or unintentionally) act as barriers to trade between member states and lead to market segmentation by restricting market access or increasing costs for foreign producers.²² Usually, product regulations control negative consumption and disposal externalities or negative health impacts for the consumer himself. In the latter case, information and labelling requirements will often be sufficient, perhaps in connection with certain minimum provisions. On the other hand, if consumption or disposal adversely affects third persons a demand for transnational measures can exist even in the case of purely national externalities: producers often decide about the environmental characteristics of their products regarding consumption and disposal, e.g. by the composition of materials. However, they have no incentive to consider the externalities if they are not reflected by the prices in the importing country. In this case it might be efficient to harmonise product norms, especially if the analysis includes transaction costs. A second argument concentrates on the advantages of mass production on the Common Market. They might vanish if every member state introduced specific

product standards for environmental purposes. Nevertheless, one should not only consider cost reductions and economies of scale. If the consumers' willingness to pay varies substantially due to heterogeneous preferences, allowing different standards will be the better solution. Moreover, sometimes diverging national standards are not a serious problem, because producers are only forced to carry out small adjustments or install add-ons, so that cost increases are not substantial.²³

Contribution to Equality?

Another point often advanced by supporters of the centralist position is motivated by distributive considerations. Environmental quality influences the quality of life (or welfare) of the Union's citizens. So uniform quality standards on a high level for national environmental goods are regarded as a step toward removing disparities between the inhabitants of richer high-standard and poorer low-standard countries. We do not want to reject the value judgement in this argument, but draw the attention to some of its implications. Environmental quality is only one element amongst others in a function representing the "quality of life". So different combinations of environmental quality and income per capita might represent the same level of well-being. Logically, demanding converging welfare or regional equity in the EU does not imply making every single determinant uniform. Also, the costs of overriding preferences must not be neglected. If the inhabitants of poorer member states are forced to sacrifice material goods in order to meet obligations imposed by European environmental policy they incur a loss of welfare. In practice, community financing, e.g. through the Cohesion Fund, will compensate them at least partly by subsidising specific environmental investments.²⁴ But, from an economic point of view, if the removal of regional income disparities is intended a more efficient solution would consist of unrestricted transfers. In our opinion, Europe-wide only minimum standards targeting severe environmental and health risks might be defensible on ethical grounds while the extent of measures beyond this minimum are to be left in the hands of national politicians. However, it is not clear why one should expect a systematic and sustained lack of such minimum standards in European democracies, and why the European Council or other European institutions offer better political mechanisms for revealing collective preferences in the member states.²⁵

In some areas, e.g. waste and sewage treatment, coordination of environmental infrastructure might

²⁰ For an overview see A. Ulph: Strategic Environmental Policy, International Trade and the Single Market, in: J. B. Braden, H. Folmer and T. S. Ulen (eds.): Environmental Policy with Political and Economic Integration: European Union and United States, Cheltenham 1996, pp. 235-256; or for a short summary H. Karl and O. Ranné, *op. cit.*

²¹ See among others M. Rauscher: Strategic Environmental Policy in Oligopolistic Markets, Fondazione ENI Enrico Mattei, Nota di Lavoro 65.95, Milan 1995, who concludes "environmental policy should be used to improve environmental quality but not to fiddle about with international trade in oligopolistic markets".

²² See K. W. Zimmermann and W. Kahlenborn, *op. cit.*, p. 200; or H. Karl: Zentralität und Dezentralität in der Europäischen Umweltpolitik aus ökonomischer Sicht, in: K. W. Zimmermann, K.-H. Hansmeyer and W. Henrichsmeyer (eds.): Umwelt und Umweltpolitik in Europa – zwischen Vielfalt und Uniformität, Bonn, p. 166.

²³ See K. W. Zimmermann and W. Kahlenborn, *op. cit.*, p. 204.

²⁴ Grants for specific environmental purposes can be justified by grantor preferences and the under-supply of European public goods (i.e. spillovers) in the recipient countries.

²⁵ The line of reasoning has a striking resemblance to the discussion about merit goods. Commission bureaucrats and politicians in the richer member states claim to be better informed about the "true" or "long-term" preferences of other people.

help the realising of cost reductions due to economies of scale, especially for the smaller member states. Probably bilateral or multilateral negotiations by the respective partners would also lead to satisfying results, but a European approach might additionally save transaction costs.

Other Reasons for Closer Cooperation

European activities may also be justified in basic research concerning ecological systems or environmental problems, if these have a transnational dimension or are considered identical in all member states. In the former case research is a European public good, in the latter cost savings seem possible by avoiding "unnecessary" parallel research in many member states. However, especially the second line of argumentation is superficial: since the results of research as well as the best research strategies are unknown, no single approach can be called unnecessary. On the contrary, the more heterogeneous (due to different regional priorities) the activities, the more probable is the detection of new knowledge. Like in other areas, competition is the best device for enhancing efficiency in research, and it cannot be substituted by decisions by "well-informed" European politicians or bureaucrats.

Combined efforts are also important in connection with classification, labelling and packaging requirements in order to improve the supply of information for European customers and producers. These are necessary conditions for a successful liberalisation, and again joint action might be the most efficient way.

Finally, a function of the Union consists in coordinating environmental policy with other European policies, above all the Common Agricultural Policy and European Regional Policy. These activities are interconnected by objectives, instruments and action scopes, and the interdependencies should be taken into account by appropriate internal or external coordination procedures.²⁶

Competitive Federalism

Passing in review the pros and cons of centralism and decentralism in European environmental policy, it seems obvious that the Union must integrate elements of both options in its constitutional order. However, decentral responsibilities should be regarded as the "default position" – presumed advantageous unless proven otherwise in specific cases.²⁷ This judgement is based on the static and dynamic efficiency considerations presented above. But like

competitive processes on markets for private goods that only provide favourable results under certain restrictions, the rivalry among jurisdictions can only work in the desirable direction (better fulfilment of citizens' interests) if constrained by a set of "competition rules".²⁸ Besides general requirements like e.g. democratic decision procedures and transparency as well as open markets for goods, factors and people, some specific rules for environmental purposes seem to be necessary. Here, priority must be given to the regulation of (significant) transboundary externalities, because they might steer the competition process in the wrong direction by rewarding member states that do not use improved practices, but only shift burdens to the citizens of other countries. Other important tasks for the European level include improving the supply of environment-related information about products and production processes, and harmonising classification and labelling schemes. Furthermore, in order to avoid distortions of competition on the Common Market or strategic environmental dumping one might deliberate about a general rule requiring full internalisation of purely national externalities in the member states. But due to information problems detecting inadequate internalisation in a member state will be beyond the bounds of possibility for authorities in other member states or at the Union level. So instead of harmonising or allowing trade restrictions the protection of national environmental goods should be left to the political process in the respective countries.

A Critical View of Union Legislation

We shall now survey very briefly Union legislation in selected areas and offer some critical remarks from the environmental federalist perspective.²⁹ The criticism will apply to both the question of the appropriate distribution of competences and the choice of

²⁶ See H. Karl and P. Klemmer, *op. cit.*, for an analysis of the interconnections between German regional and environmental policies.

²⁷ In principle, this has been done in the Maastricht Treaty by the incorporation of the Principle of Subsidiarity. But in reality it does not limit the growing involvement of Brussels in nearly every field of economic policy. See H. D. Jarass: *Subsidiarität in Europa nach Maastricht*, in: K. W. Zimmermann et al. (eds.), *op. cit.*, pp. 123-137.

²⁸ See W. Kerber and V. Vanberg, *op. cit.*, pp. 48.

²⁹ European legislation can either take the form of regulations (generally applicable by member states and directly binding in national law), or of directives (binding on member states but applied through national legislation, thus leaving the form and methods to member states). Nowadays, environmental policy legislation is based on Article 100a, or Articles 130r to 130t of the Treaty on European Union.

instruments. A more detailed account will be given of waste management, because we feel that this is an area where quite a few undesirable developments are emerging due to misconceptions of decentral decision-making.

Water Quality Management

Several items of Union legislation have been approved dealing with the protection of surface and underground water. Quality standards exist for bathing and drinking water or fresh water suitable for fish life; the member states are only allowed to set tougher norms. Additionally, the discharge of substances is controlled by limit values and requirements for sewage treatment plants. Moreover, the Union became active on the protection of international seas such as the North Atlantic, the North Sea and the Mediterranean by participating in negotiations and adopting directives on the dumping of waste at sea.

An assessment of these activities calls for a differentiated examination. For inland waterways and groundwater regional or national authorities are presumably the most efficient alternative, since the effects of pollution are spatially limited, and the assimilation capacities and optimal quality levels will vary significantly from region to region. Decentral competences allow for a closer orientation towards people's preferences and further the choice of efficient instruments in the respective circumstances as well as innovative approaches. However, decentralisation is obviously not in line with the opinion of European officials. For example, only recently the European Commission decided to lodge an application before the European Court of Justice against Portugal for its failure to fully respect the Nitrates Directive.³⁰ Aiming at safeguarding the quality of drinking water and combating eutrophication, the directive sets out to lower excessive nitrate levels in surface waters and groundwaters caused by agriculture. Also, a Reasoned Opinion was sent to the United Kingdom for an inadequate application of a Community directive for the protection of groundwater.³¹ The Commission points out that the decision reflects its "general concern that the vital Community's groundwater resources should be fully

protected in accordance with the Directive". We do not even try to assess the appropriateness of the respective provisions, but in our opinion the national (or regional) character of the objectives rules out that the European Union is the competent institution. Both the definition of quality standards and the choice of the adequate instruments should be left to the member states. Nevertheless, harmonisation is justified by equity concerns and evoking the danger of distortive competition. For a refutation we refer to our arguments on harmonisation earlier in this paper, because this is a perfect example for the dubious conclusions one reaches by accepting these justifications without reservation.

Turning to transfrontier river systems a different picture emerges, because in this case cooperative solutions are optimal. Though calling in European authorities seems unnecessary at first glance, since usually only a few of the member states are involved, their participation might prove useful: the transboundary pollution of rivers can be classified as unidirectional, i.e. pollutants are transported from an upstream country to a downstream country. Consequently, negotiations will only be successful if the downstream country compensates the upstream country for restricting emissions. As mentioned above, this solution is often considered unfair as well as rejected for setting wrong incentives. So, the Union may play an important role by supplying a general framework for negotiations that supports the agreement upon diffusion norms or common activities. However, the union's approach of introducing uniform emission standards is not capable of controlling transfrontier pollution directly, above all because it does not limit the number of emission sources. Moreover, it unnecessarily limits the room for the member states to look for more efficient instruments.

Finally, cooperation is urgently needed for restricting pollution of the seas and the overuse of maritime resources, rather typical cases of collective goods. Here, transferring competences to the European level might be a promising alternative.

Air Pollution Control

The first cornerstone of European air pollution control is the regulation of emissions from mobile sources, above all the emissions of gases from motor vehicles. Directives lay down source-related emission limit values for several pollutants that are orientated towards American standards. Additionally, the maxi-

³⁰ Council Directive 91/676/EEC concerning the protection of waters against pollution caused by nitrates from agricultural sources. See Press Release (Commission) IP/97/231 of 19 March 1997.

³¹ Council Directive 80/68/EEC on the protection of groundwater against pollution caused by certain dangerous substances. See Press Release (Commission) IP/97/232 of 19 March 1997.

mum content of sulphur dioxide and lead in petrol and fuel oil is limited. The second main field of the European activities deals with pollution from stationary sources like large combustion plants, and particularly power stations. Emission limit values for several pollutants are fixed that are based on the best available technology not entailing excessive costs. Also, in the early 1980s the Community approved directives defining air quality standards for different zones.

In recent years global environmental problems and the protection of the atmosphere moved into the limelight of European environmental policy. The Union adopted several measures to phase out the production and consumption of chlorofluorocarbons and other substances thought to be responsible for the depletion of the ozone layer. At the 1992 Earth Summit in Rio de Janeiro the Union committed itself to stabilising the carbon dioxide output at the 1990 level until the year 2000. In the same year the European Commission prepared a proposal for a carbon/energy tax aimed at reducing carbon dioxide emissions and increasing energy efficiency. However, it has still not been approved by the Council.

Advocates of a more powerful supranational level mainly give two reasons to support their case. First, they draw attention to mobile sources and products (especially motor vehicles) that transport pollutants to other countries. In order to control their emissions while preventing market segmentation common standards are demanded. Second, a need for European cooperation in air pollution control is said to result from the fact that many pollutants cause transboundary externalities.³² The first argument holds true only with some qualifications: since burdens and traffic volumes vary significantly between the member states a need for differentiated national measures (like different tolls or charges) must be included in the analysis. Also, market segmentation costs might be less important than suggested, because producers can rather easily adjust to different norms with the help of add-ons. On the other hand, regarding transeuropean transport services some common regulations can be found necessary. The second point indeed establishes a convincing argument for centralising competences. The transport of pollutants over long distances will often lead to a separation of

those who benefit from using the air as a receptacle of emissions and those who suffer the damages. Consequently, the governments in the emitting areas lack incentives to internalise these transboundary externalities and prefer a "high-stack-policy". The Union can play an important role in developing policy instruments dealing with transfrontier pollution, since common interests in other fields and existing institutions make it easier to realise the necessary cooperation than it is, for example, in international negotiations. While efficiency-enhancing cooperative solutions require a certain degree of centralisation of competences regarding reduction targets for transfrontier emission flows, the choice of the adequate instruments for their realisation might be left to the member states. Then, the inefficient command-and-control approach laid down in several directives on air pollution by fixing harmonised emission limit values could be overcome. Moreover, this policy will often be ineffective, because it does not directly influence the transfrontier flow of pollutants, and neglects the number of emission sources. Above all, if it is possible to impose diffusion norms and control their compliance, a competition between the national governments might be started to look for more efficient instruments. Furthermore, sometimes air pollution only presents a regional problem like in the case of smog, so that the definition and implementation of quality standards should be left to regional agencies.

European cooperation in order to combat climate change and protect global environmental media also seems to be useful. Although global agreements will be necessary in the end, the Union can coordinate the member states' policies thereby facilitating negotiations and reducing transaction costs. Moreover, under certain circumstances the Union can induce international measures by acting as a first mover.³³ Regarding the choice of instruments, on the one hand the Commission proposal for a carbon/energy tax has to be welcomed, since it tries to break away from the old command-and-control routine. On the other hand, quite a few of the specific arrangements can be criticised.

Nature Protection

For the first time nature protection was considered in detail in the Second Community Action Programme on the Environment in 1977. Since then, the Council of Ministers has adopted several directives, e.g. on the conservation of wild birds and habitats. Also, the Union gives financial support to conservation projects for natural habitats.

³² See K. W. Zimmermann and W. Kahlenborn, *op. cit.*, p. 228.

³³ However, up to now the different cost-benefit profiles in the member states have prevented common activities.

European competences for nature protection can be explained by benefit-spillovers or network externalities. Following the "network-approach", the Union has to coordinate the provision of protected areas in the member states in order to prevent the isolation of ecosystems. Moreover, the protection of migratory species (e.g. wild birds) requires cooperation. Also, sometimes protected areas can be considered transnational public goods, i.e. the benefits spill over partly to other countries. In this case, compensation payments might be necessary in order to ensure sufficient provision of the collective good, and again the Union can support member states by accepting the coordination function.

Waste Management

Waste management is one of the most significant areas of environmental spending in the European Union, and waste generation continues to increase, while the siting of new disposal or incineration plants has become more difficult. So it is not surprising that national or common waste strategies as well as trade in waste between member states (and with third parties) are important and controversial political topics. The common policy dates back to 1975 when the Framework Directive on waste³⁴ was enacted standardising important definitions, for example concerning the concepts of waste and waste disposal, and requesting the member states to establish an integrated and adequate network of waste disposal installations. In the following years measures were taken in individual areas, such as waste from the titanium dioxide industry, waste oils and the dumping of waste at sea. Also, the hierarchy of "prevention – recovery/ recycling – minimisation of final disposal" was introduced as a guiding principle of European waste management. Moreover, several directives regarding incineration were drafted and subsequently enacted. They fix emission limit values for several pollutants based on the best available technology not entailing excessive costs and suitable measurement techniques and methods. Additionally, requirements and conditions for the authorisation of new incineration plants are laid down including an obligation to observe certain emission limit values and appropriate combustion conditions. A proposal for a Directive on the Landfill of Waste was rejected by the European Parliament on the grounds that the aspired level of environmental protection was insufficient. Recently, the Commission adopted a new proposal aiming at the harmonisation of environmental and technical standards for the landfill of waste. Scepticism about shipments of waste, and more speci-

fically a common market for the waste management sector, is reflected in the Regulation on the shipments of waste.³⁵ The regulation draws distinctions about the procedures to be applied depending on three criteria. First, shipments within the Community are handled less restrictively than shipments involving other countries.³⁶ Second, the type of waste – whether it is destined for disposal or recovery – plays an important role: shipments of waste for disposal are subject to prior notification to the competent authorities. The member states are empowered to prohibit generally or partially or to object systematically to shipments in order to implement the principles of proximity, priority for recovery and self-sufficiency. In other words, nearly every shipment of waste for disposal can be prohibited. Shipments of waste for recovery are treated less restrictively and attention must be paid to the third criterion, the classification into the green, amber, or red list.³⁷ Waste for recovery listed on the green list is considered rather unproblematic and excluded from most of the procedures of the regulation. Waste listed on the amber or red list is made subject to notification, but shipments cannot be prohibited generally, while objections to specific shipments are only possible in exceptional cases and, in particular, cannot be based on the self-sufficiency argument.

To sum up, in the last years two trends became visible in European waste management: further harmonisation and centralisation regardless of the national (or even local) character of a problem, and support for the growing efforts to reach self-sufficiency in some member states. These policies are usually justified with the help of arguments similar to those mentioned above.³⁸ Differing standards for waste disposal and processing facilities and free trade in a European common market for waste³⁹ are blamed for distorting competition, causing spillovers, being an obstacle for more stringent national regulations and widening disparities by converting the less developed

³⁴ Council Directive 75/442/EEC on waste.

³⁵ Council Regulation 259/93/EEC of February 1993 on the supervision and control of shipments of waste within, into and out of the European Community.

³⁶ In the following we will focus on the intra-Community shipments.

³⁷ These lists have been compiled by the OECD and classify waste with respect to the potential risks.

³⁸ See e.g. Communication on the review of the Community Strategy for Waste Management (adopted 30/07/96) COM (96) 399.

³⁹ We do not discuss trade in waste with developing countries, since it poses serious additional problems and must be viewed with scepticism (e.g. lack of adequate control mechanisms, no political representation of people's preferences).

regions into "pollution havens". However, in our opinion these claims are not very convincing.

As argued earlier, considering differing environmental regulations to be distortions of competition is a widely held, but none the less indefensible view. It neglects differing scarcities of environmental resources that must be reflected in different regulations. This statement holds true in waste management, too. Nevertheless, harmonisation regardless of the national (or even local) character of problems is pursued in the directives on incineration by setting uniform emission limit values, and can also be seen in the proposals regarding landfills.⁴⁰ In view of all the differences in environmental, economic and socio-political conditions this harmonisation orientated according to a fictitious European average will almost certainly lead to welfare losses due to oversupply of the public good "environmental quality" in some member states and undersupply in others. The latter problem is softened, because some scope for national action is usually left by allowing member states to maintain or introduce tougher measures than those agreed at Union level. So the (often poorer) countries that would prefer spending fewer resources on waste management will turn out to be the losers. It is true that in practice varying enforcement deficits in the member states might lead to a *de facto* differentiation of standards. However, on the one hand this kind of differentiation looks more or less accidental, and on the other hand, it will probably support the call for trade restrictions in the high-standard countries.

Like in other fields, in waste management spillovers might justify European activities. Mainly, they will occur in connection with emissions from the incineration of hazardous and municipal waste. Also, the landfilling of biodegradable municipal waste is suspected to contribute to the "global greenhouse effect" by methane emissions. However, emission limit values for single sites neither control the total emissions in a member state nor the total flow of transboundary emissions. In order to reach more efficient solutions while leaving as much room as possible for decentral decisions other instruments, like transfrontier diffusion norms, have to be con-

sidered. The overall objective should be seen in the implementation of internalisation rules for transfrontier emissions in the Union.

Trade in absence of harmonisation is blamed for preventing more stringent national regulations. It is argued that a good long-term strategy consists of keeping strong incentives for prevention and recovery in countries with scarce disposal capacities (i.e. high disposal costs) by not allowing them to export. In high-standard countries like Germany, it is also considered to be a matter of the credibility of one's own relatively strict waste management to prevent so-called "waste tourism". Additionally, liberalisation is accused of inducing a sharp increase in environmental damage and health risks in the poorer member states, high transport risks, and unlawful shipments, unless very strict and expensive control-mechanisms are established. Again, these objections are not fully convincing, especially if the intended policies of setting European-wide minimum standards and implementing common information and control systems are realised. While normatively founded minimum standards prevent extreme outcomes, importing countries can also increase their requirements, if they feel their disposal capacities become scarcer because of imports.⁴¹ If classifications and controls are standardised the costs connected with shipments will be reduced and unlawful disposals rendered more difficult. Regarding transport risks, efficiency calls for internalisation, for example by establishing appropriate liability rules, rather than trade restrictions. Finally, the "keeping high national incentives" argument bears similar drawbacks to the political prescription of a hierarchy of objectives by regarding prevention as an end in itself. But if disposal capacities are less scarce in other member states (and consequently, in the Union as a whole), why not make use of them? Some countries will probably have a comparative cost advantage in disposal and specialise in these activities, but they are not forced to lower their protection level and since their voters are able to exert control the respective member states' decisions should be respected. Also, economies of scale play an important role in the waste management sector and their exploitation might require international markets. Consequently, national self-sufficiency will lead to welfare losses.

Finally, equity concerns motivate the call for trade restrictions and harmonisation in European waste management. This view has been criticised above. Again, if we consider political procedures in the Union member states to be democratic, we have to respect

⁴⁰ For example, Commissioner Bjerregard of the General Direction XI, responsible for Environment, Nuclear Safety and Civil Protection, commented on the Commission's adoption of the new proposal for a Council Directive on the landfill of waste that "the main objective of the proposal is to ensure high uniform standards for the disposal of waste in the European Union (...)"

⁴¹ If they refrain from doing so, the voters (or at least the elected politicians) obviously agree with this mixture of environmental and other goods.

their respective decisions about the scope of public environmental goods. If the objective is seen in reducing disparities between European regions, not harmonisation, but redistribution policy should be taken into consideration, because it is both the more efficient and the more effective alternative.

Apparently, waste management is often viewed as a "special case" that does not lend itself to economic analysis. Then every single action seemingly reducing waste is welcomed regardless of its costs. However, the economic weighting process is important in waste management, too. Facing scarce resources, environmental goals should be realised with the lowest opportunity costs, because this enables society not only to use the savings for other purposes, but also to set higher goals.

Conclusions

Against the background of environmental federalism, analysing European environmental policy leads to a mixed picture. On the one hand, shifting competences to the European level can be reasonable: cases in point are internalisation rules for trans-boundary externalities, or improving the quality of information about environmental characteristics on goods, factor and capital markets in order to ensure the functioning of the Common Market. On the other hand, some problematic trends become visible in the Union that can be traced back to the insufficient limitation of central competences. Here, the most important development is the further harmonisation and centralisation in fields that should be left to national (or even regional or local) politicians. Furthermore, the adherence to inefficient instruments, especially the dominating command-and-control approach, should be abandoned. More specifically, the support for the growing efforts to reach national self-sufficiency in waste disposal must be viewed with scepticism. Looking for an explanation of these developments we come across several possible reasons, such as:

- ☐ Harmonisation of environmental standards seems to conform to a widely held idea of fairness. However, this view is rather problematic. Neither will uniform

emission standards – the most often used instrument – lead to identical environmental conditions, nor is a uniform level of environmental quality necessary or sufficient for a fair (mainly used in the sense of equal) distribution. A lack of information about the costs (disutilities) of harmonisation may be responsible for some questionable decisions.

- ☐ Some powerful interest groups support inefficient activities. For example, firms and trade unions in high-standard countries may demand the "levelling of the playing field", because it increases the costs of their competitors.

☐ Both the European Parliament and the European Commission favour centralism, because they gain competences. In the Council, whose members might resist since they stand to lose power, some high-standard countries bring their influence into play for an upward harmonisation. The representatives of poorer member states losing a cost advantage by harmonisation might "sell" their consent in the political bargaining process.

Consequently, one of the most important points that must be addressed in a future European constitution is the implementation of safeguards in order to prevent (over-)centralisation proceeding.⁴² Following Mueller, several possibilities could be taken into consideration:⁴³

- ☐ explicit and definitive assignment of functions to the Union level in a European constitution, ruling out further centralisation completely,
- ☐ only allowing an issue to be shifted to the European level, if the citizens in at least 50% of the member states agree,
- ☐ establishing a special court with the sole task of preserving the federalist division of functions in Europe,
- ☐ laying down the possibility of holding referenda on decisions about collective goods with a spatially limited dimension.

As long as no effective constraints are imposed on transferring environmental policy competences to the Union level, the trend of further centralisation and harmonisation will remain intact. The European authorities will draw ever more activities from the member states, regardless of economic efficiency considerations that call for a concentration on pan-European interests. On the one hand, this will lead to high frustration costs due to the negligence of diverging preferences, and on the other hand, it will deteriorate the performance of the political process by sacrificing the positive effects of institutional competition.

⁴² This holds true not only for environmental policy, but also in other areas like e.g. regional policy. See H. Karl: Bedarf die europäische Integration einer europäischen Raumordnungspolitik?, in: W. Gick (Hrsg.): Die zukünftige Gestaltung der Regionalpolitik in der EU, Munich 1996, pp. 55-83.

⁴³ See D. C. Mueller: Federalism and the European Union: A constitutional perspective, in: Public Choice, Vol. 90, 1997, pp. 255-280, here pp. 270. We do not consider his first safeguard, however, because we do not consider it persuasive.