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Working Paper

EU environmental principles: Implementation in Germany

Wuppertal Papers, No. 105

Provided in Cooperation with:
Wuppertal Institute for Climate, Environment and Energy

Suggested Citation: von Seht, Hauke; Ott, Hermann E. (2000) : EU environmental principles: Implementation in Germany, Wuppertal Papers, No. 105, Wuppertal Institut für Klima, Umwelt, Energie, Wuppertal, https://nbn-resolving.de/urn:nbn:de:bsz:wup4-opus-10776

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EU environmental principles: Implementation in Germany

Wuppertal Papers

Nr. 105 · Juli 2000
ISSN 0949-5266

NRW.

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1. Introduction

Over the years the European Union (EU) has adopted a number of principles which guide EU environmental policy-making. Some of them have already been implemented in many Member States some time ago, but the different national approaches and lessons learned have only been communicated to a limited extent. This hampers the chances of current EU Member States to fully benefit from such foreign experiences in their own approaches to environmental issues and to the implementation of EU law.

Furthermore, currently several Eastern European countries aim to join the European Union. One of the core issues in the ongoing negotiations with the accession candidates are shortcomings with regard to environmental protection. National laws and provisions have to be improved in order to adapt to current standards in EU Member States. A central question is which approaches national governments should use for such improvements. An aid to this is to look at the positive and negative experiences and approaches in Germany, an EU Member State that has a long record with regard to environmental protection and the implementation of environmental principles.

Thus, in this paper the implementation of EU environmental principles in Germany will be discussed, referring especially to the water management sector and energy policy.[1] The illustration of how the principles *can* be implemented and what possible sticking points there are can help other countries to improve their own national environmental protection provisions. Furthermore, it can help to identify potential gaps between accession candidates and EU Member States with regard to environmental policy.[2]

Certainly, the findings are not only of interest for Europeans. Principles, such as the precautionary principle and the principle of sustainable development are high on the agenda worldwide. Accordingly, lessons that can be learned from German practice will also be valuable for policy-makers outside Europe.

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[1] What has to be noted is that it is not always that obvious which principle(s) a certain environmental act or activity implements. Thus, the choice of examples listed in the subsequent sections partially had to be based on the interpretations of the authors.

[2] However, due to the complexity of German environmental policy, not all issues related to German environmental policy and principles will be discussed in a fully comprehensive way.

Introduction to German environmental policy

Germany has often been regarded as a European and international leader in environmental protection. German environmental policy was in many cases the starting point of EU/EEC environmental policy: Germany introduced substantial environmental protection legislation earlier than other EU/EEC countries. This resulted in calls from German business for conditions of equal competition. They demanded that competitors in other Member States should be subject to the same environmental requirements and thus the same presumed costs (Schleicher, 1997: 44).

However, in the recent past Germany was not equally supportive of an ambitious EU environmental policy. The conservative-liberal coalition government, in power from the beginning of the eighties till the end of 1998, was increasingly seen as blocking, rather than pushing, at the European level (Hey, 1999: 65). Germany also repeatedly failed to correctly implement EU Directives. Some directives were implemented too late or in a formally incorrect way;[3] in other cases substantial elements were missing.[4] Environmentalists are hoping for a change since the social democrats and the green party took over power at the end of 1998. After more than one year, however, not many did judge that there was already a substantial improvement on Germany's role in EU environmental policy (see, for example, Hey, 1999).

Despite progress in certain areas and an overall high standard of environmental protection (after major efforts and investment now also in the new German Länder)[5], the environmental movement and concerned scientists also increasingly criticised the *domestic* environmental policy of the conservative-liberal coalition government. For example, in its annual report the *Sachverständigenrat für Umweltfragen*, a leading group of German experts, described the environmental successes in 1998 as rather modest (Baratta, 1999: 1295). Especially since the German recession at the beginning of the 1990s and the debate on the impact of environmental protection on the location of industry (Boehmer-Christiansen, 1994: 34) environmental progress was limited. As Witt (1999: 61) put it, at the end some people were not even disappointed anymore, because they did not expect any substantial progress. Unfortunately, also at the national level the change in government did not yet bring the expected push for environmental policy. Against the background of high expectations many people are deeply disappointed about the progress (not) made.

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[3] This is the case, for example, with regard to European Directives on ground and drinking water (80/778; 76/464) (Dehmke, 1994: 161-171; Möbs, 1991: 123-124).

[4] For example, with regard to directives in the field of air pollution (80/779; 89/427) the European Court ruled that Germany has not adopted the measures necessary to ensure compliance with the corresponding standards (Koch, 1991: 94)

[5] For further information see, for example, Brickwedde (1998).

Thus, this paper should not be seen as an overview of how environmental principles have been implemented by an unchallenged environmental leader, hoping for an overview of best-practice only. Although there are many very good and innovative approaches, the deficits with regard to German environmental policy are also partially reflected by the implementation of environmental principles.

The principles that are subsequently dealt with are the precautionary principle, the polluter pays principle, the principle of correction at source, the principle of sustainable development, the subsidiarity principle and the principle of integration. Furthermore, the principle of co-operation and the principle of prevention will be briefly discussed. Introductions to the principles can be found at the beginning of each corresponding section.

2. EU environmental principles and their implementation in Germany

2.1 The precautionary principle

Introduction

The precautionary principle evolved out of the German socio-legal tradition. It made its way into English as the translation of the German *Vorsorgeprinzip* (Boehmer-Christiansen, 1994: 31). It has been included in virtually every recent treaty and policy document related to the protection and preservation of the environment. A prominent example is principle 15 of the 1992 Rio Declaration adopted at the United Nations Conference on Environment and Development, which also explains the basic concept of "precaution" (Freestone and Hey, 1996: 3):

> *"In order to protect the environment, the precautionary approach shall be widely applied by States according to their capabilities. Where there are threats of serious irreversible damage, lack of full scientific certainty shall not be used as a reason for postponing cost-effective measures to prevent environmental damage."*

Following a corresponding proposal of Belgium (Himmelmann, 1997: 38), the 1992 Maastricht Treaty incorporated the precautionary principle in the Treaty establishing the European Community (TEC). It is listed in Article 174 (2) (former Article 130 r) TEC, which includes the following principles of EU environmental policy: the principles of precaution and prevention, the principle, that damage should, as a priority, be rectified at source, and the principle that the polluter should pay. However, as for the other principles, no detailed definition of the precautionary approach is given in the TEC. In the absence of a generally accepted definition of precaution, this leaves some room for future controversy.

Implementation in Germany

The *Vorsorgeprinzip* is long established in Germany. The idea can be traced to the very first draft of new clean air legislation in 1970 (Wey, 1993: 207) and today is included in numerous important environmental acts (Rehbinder, 1991: 7; Schmidt and Müller, 1987: 3). The 1984 report of the Federal Government to the Parliament provides a relatively complete definition of precaution/*Vorsorge*. It states that the principle

> *"… commands that the damages done to the natural world (which surrounds us all) should be avoided in advance and in accordance with opportunity and possibility. Vorsorge further means the early detection of dangers to health and environment by comprehensive, synchronised (harmonised) research, in particular about cause and effect relationships …, it also means acting when conclusively ascertained understanding by science is not yet available. Precaution means to develop, in all sectors of the economy, technological processes that significantly reduce environmental burdens, especially those brought about by the introduction of harmful substances."*[6]

However, there is no final clarification as to the exact content of the principle (Rehbinder, 1997: 04/015). It needs to be politically implemented according to the specific conditions of the environmental sectors and issues at stake.

The *Vorsorgeprinzip* plays a major role in German environmental policy-making. Sometimes it is even referred to as the central principle of national environmental policy (see e.g. Rehbinder, 1991: 1). It can be seen as incorporating other principles (Tünnesen-Harmes, 1994: 5). For example, Cameron and Abouchar (1996: 39) state that *Vorsorge* can mean to internalise pollution externalities (polluter pays principle). The principle that activities may not result in a significant deterioration of environmental conditions/*Verschlechterungsverbot* (Rehbinder, 1997: 04/22) and the principle of correction at source (Kloepfer, 1989: 75) are also referred to as special forms of the *Vorsorgeprinzip*.[7] However, despite the importance of the *Vorsorgeprinzip*, it has to be emphasised that the German approach is not purely precautionary. As Boehmer-Christiansen (1994: 35) points out, it is rather that

> *"… the policy outcome will reflect the balance of power of political forces and motivations at work in individual cases, for the state has many functions other than that of environmental protection."*

In German administrative practice, *Vorsorge* is strongly linked to the development of cleaner technologies. The demand, that technologies have to reflect the state-of-the-art technology/*Stand der Technik* or even best state-of-the-art technology, has been incorporated in numerous German acts (see e.g. Heimlich, 1998). Courts play a major role with regard to the interpretation and adequate implementation of this demand. Unless the *Stand der Technik* has been defined by federal ordinance, administrative courts decide disputes over it in specific cases, and whether the demand of precaution has been satisfied (Boehmer-Christiansen, 1994: 52).

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6 English translation taken from Boehmer-Christiansen (1994: 37).

7 Furthermore, the sustainable use of resources is sometimes regarded as being part of the *Vorsorgeprinzip* (Rehbinder, 1991: 10). However, it is not exactly clear as to how the *Vorsorgeprinzip* relates to the principle of sustainable development. It could be that one principle incorporates the other, but the two concepts could also merge in the future (Rehbinder, 1997: 04/033-04-034; see also section on sustainable development).
Also, there is a strong link between the principle of precaution and the principle of prevention. This relationship is dealt with as part of section 2.6.

The *Stand der Technik* requirement as part of the precautionary principle encourages investment and promotes technical change (without requiring previous proof of da mage). Furthermore, it stimulates applied/industrial research and promising export markets (Boehmer-Christiansen, 1994: 51). National technical standards have significantly contributed to the fact that a German industry for environmental goods flourished and at the beginning of the 1990s accounted for about 20% of the related global market (see Umweltbundesamt, 1997: 60-61). Limits to the application of the *Stand der Technik* requirement are set by the principle of proportionality/*Grundsatz der Verhältnismäßigkeit* which basically demands that the environmental gains must be in proportion to the costs of protection measures (Rehbinder, 1991: 11).[8]

Generally, it is important to note that according to German experience strengthening environmental standards in order to implement the idea of precaution (or simply the aim of environmental protection) can help to ensure positive economic development and employment. This is also valid at times of economic problems: For example, during the recession of the early 1980s Green Keynesianism was practised in Germany in order to foster economic development. *Investitionshilfen/* State aid for investment in environmental protection measures was provided, a central aim being the positive development of markets for environmental protection equipment and services. In 1985, the *Kreditanstalt für Wiederaufbau* and the *Deutsche Ausgleichsbank* alone co-financed environmental investments at over DM 9.5 billion. It is estimated that these aids created almost half a million jobs (Boehmer-Christiansen, 1994: 47). In the past few years, substantial employment effects can also be linked to the environmental upgrading of facilities in the new German *Länder*. In 1994, for example, DM 3.8 billion were invested in this part of Germany (Umweltbundesamt, 1997: 59).

The example of *Investitionshilfen* raises the question as to what role the state/ government plays. This has been summarised by O'Riordon and Cameron (1994). They noted that, for the Germans,

> *"… precaution is an interventionist measure, a justification of state involvement in the day to day lives of its* länder *and its citizenry in the name of good government."*

In the field of *water management* the precautionary principle is reflected in Article 1a (1) of the federal Water Management Act/*Wasserhaushaltsgesetz* (*WHG*), which requires authorities to ensure that every negative impact that *can* be avoided *has* to be avoided, independent of the current use or quality of water bodies (Salzwedel, 1998: 15/018). The idea of precaution, together with the principle that resources should be used sparingly, is also taken account of in Article 1a (2) *WHG*:

[8] In the past, the term *Stand der Technik* itself was nearly exclusively linked to technical considerations. Economic considerations were not very important. However, in the recent past there were some attempts to change this (Heimlich, 1998).

> *"Everyone is obliged, when carrying out measures which might affect a water body, to act with the necessary care depending on circumstances, to avoid water pollution and any other detrimental changes in its properties, and to achieve the desired sparing use of water, taking into account the natural water cycle."*[9]

These objectives apply to all water bodies. Furthermore, *WHG* Articles 26 (for surface water), 32b (for coastal water) and 34 (for ground water) relate to the principle of precaution. They contain certain prohibitions aimed at the protection of water resources:

> *"Substances may be stored or disposed of [along a watercourse, or a coastal water*[10]*] only in such a way that there must be no concern about [harmful*[11]*] pollution of the water or any other detrimental changes in its properties [or water flow characteristics*[12]*]. The same applies to the transport of liquids and gases through pipelines.*
>
> *A permit for the emissions of substances into ground water may be granted only if there is no concern about detrimental pollution of the ground water or any other detrimental changes in its properties."*[13]

In practice, furthermore Article 7a *WHG* is particularly relevant. This Article incorporates the idea of precaution by basically requiring that emission permits may only be granted if the pollution load is as low as the state-of-the-art technology allows. It also implements international and EU law (Salzwedel, 1998: 15/018).

As outlined, German water management takes to a substantial extent account of the *Vorsorgeprinzip*. For decades, however, this element was largely missing in the energy sector. Apart from some exceptions,[14] environmental concerns and principles did not play a major role in energy policy (see e.g. Friedrich-Ebert-Stiftung, 1997: 3-4). For example, the aim that energy supply should be environmentally acceptable, was only recently included in the federal Energy Management Act/*Energiewirtschaftsgesetz (EnWG)* (Obernolte and Danner, 1999: I B1-2). Predominantly economic objectives, such as cheap, reliable and sufficient energy supply, did prevail and were reflected in energy law.

Today, environmental concerns are among the core issues of the ongoing debate about the restructuring of the German energy sector and the *Vorsorgeprinzip* is now reflected by Article 2 (4) *EnWG*. This article *inter alia* demands that environmental damage should be minimised.

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9 Translation taken from Kraemer and Jäger (1998: 192).
10 Relating to surface or coastal water, respectively.
11 'harmful' only in relation to ground water.
12 'or water flow characteristics' only in relation to ground water.
13 Translation taken from Kraemer and Jäger (1998: 192).
14 See, for example, the comments on the retrofitting programme for large combustion plants at the end of this section.

In practice, the idea of *Vorsorge* is also taken account of by the introduction of new energy taxes:[15] A central objective of these taxes is to reduce the threat of global warming, even so there are still a few people who challenge the theory of human-induced climate change.[16] However, though the taxes are a credible and important first step in the right direction, it has to be acknowledged that the climate benefits of these taxes will probably be moderate. This is mainly due to their relatively low rates and the fact that they do not directly relate to the specific emissions of greenhouse gases caused by different sources of energy (see e.g. Schmidt, 1999). Furthermore, future cost reductions in the wake of increased competition in the energy sector might outweigh the increased costs due to the energy taxes.

In addition to the *EnWG*, medium-sized and large power stations or combustion plants are subject to the Federal Immission Control Act/*Bundes-Immissionsschutzgesetz (BImSchG)*. Article 5 (2) of this act requires the application of the precautionary principle with regard to the construction and operation of such facilities. In order to fulfil that demand, facilities have to reflect the state-of-the-art technology.

Article 5 (1) no. 4 *BImSchG* also demands that operators have to use the heat generated by their plant or allow others willing to do so to use it (if feasible and reasonable). This energy-efficiency demand can be seen as a precautionary measure with regard to the threat of global warming.

Another measure linked to the idea of precaution is the extremely effective *Stromeinspeisegesetz*/Power Feed-in Act. It provides the basis for the feed-in of electric power from regenerative sources in a way that does not require the government to spend public money on it. The act forces energy companies responsible for the grid to pay fixed minimum prices for regenerative electric power. These prices are above the normal market price. In the past, the sales price of electricity derived from wind energy was set at 90% of the domestic price. This allowed for a substantial growth of this sector. In 1999, 1,569 megawatt (MW) new capacity were installed in Germany (total world wide capacity: more than 10,000 MW; total capacity in Germany: 4,443 MW) (Hinsch, 2000: 12; Europe Environment, 1999: I 5). By now, some 13,000 jobs depend on the German wind industry (Europe Environment, 1999: I 5). As another positive side effect, the growth has also reduced dependence on energy imports.

The Power Feed-in Act is related to the idea of precaution, because it supports the development of alternatives to fossil fuels. These alternatives can allow to reduce the

[15] In order to allow for smooth structural adaptations, the rates will be raised in predictable small steps in the years ahead.

[16] In science, such climate sceptics are a small and not very credible minority. There is now broad international scientific consensus on the theory of serious human induced climate change (Oberthür and Ott, 1999: 10).

dangers of global climate change and local risks to human health (resulting from combustion related local air pollution). Furthermore, they can improve the basis for the phase-out of nuclear power, thus reducing nuclear risks.[17]

Another successful example of how the *Vorsorgeprinzip* can be applied in the energy sector is the retrofitting programme of large combustion plants in West Germany. The programme was started in the 1980s as a response to worries about acid rain and dying of the forests, although the assumed causality was not fully established at that point. Over a 10 year period the programme allowed the sulphur dioxide emissions of large combustion plants to be reduced from 1.9 to 0.3 million tons (Mt), of nitrogen oxides from 0.96 to 0.25 Mt, and of particulates from 0.1 to 0.02 Mt. Furthermore, the investment reduced unemployment and recycled money within the German economy (Boehmer-Christiansen, 1994: 54).

2.2 The polluter pays principle

Introduction

The polluter pays principle is listed in Article 174 (2) (former Article 130 r) TEC. Sands (1995: 66) states that the principle

> *"… refers to the requirement that the costs of pollution should be borne by the persons responsible for causing the pollution and the consequential costs."*

However, he also notes that the

> *"… precise meaning of the principle, and its application to particular cases and situations, remains open to interpretation, particularly in relation to the nature and extent of the costs included and the circumstances in which the principle will, perhaps exceptionally, not apply."*

The principle is clearly important for the effectiveness of environmental protection, because it provides a direct incentive for potential polluters not to pollute. This reduces the need to introduce additional environmental protection measures. Furthermore, the implementation of the principle is conform to the idea of a market economy, where ideally economic players should pay for all the costs they cause (see e.g. Rehbinder, 1997: 04/048).

[17] Currently, the government intends to amend the act. This is *inter alia* aimed at ensuring that the production of regenerative power has a future in the liberalised European energy market and that the Power Feed-in Act is fully compatible with EU rules on competition.

Implementation in Germany

The polluter pays principle is usually translated as the *Verursacherprinzip*. However, this German term, which will be discussed subsequently, literally means the principle of causation or responsibility (Boehmer-Christiansen, 1994: 33; Kahl, 1993: 25-26). It does not only relate to pollution, but to all environmentally damaging or negative activities and does not only address the allocation of costs (Kloepfer, 1989: 83-89). The counterpart to the *Verursacherprinzip* is the "common burden" principle/*Gemeinlastprinzip*, which means that the general public has to pay for the costs of environmental protection (Rehbinder, 1997: 04/047).

Not only the charges for polluters can be regarded as being compatible with the *Verursacherprinzip*, but all traditional measures of interventionist environmental policy. Examples are standards for products, permits or the prohibition of actions. It also includes liability in terms of civil law, especially the Environmental Liability Act/*Umwelthaftunggesetz* (applies to large plants, such as power stations or steelworks) (Kloepfer, 1989: 84; Rehbinder, 1997: 04/051-04/052).

The *Verursacherprinzip* plays an important role in German environmental policy. Nevertheless, it is not taken account of in full. In its strictest form, the principle would require that all costs to third parties or the general public, resulting from environmentally damaging activities or products, have to be paid by the one or the ones responsible. External costs thus would be internalised. It would also require paying compensation for the use of the environment. In German political practice, however, only those costs for environmental protection measures are to be taken account of which result as a consequence of the environmental policy of the state (Rehbinder, 1997: 04/050). In some cases, not even this less ambitious concept is fully implemented.[18]

It is problematic that with regard to some environmental problems, such as dying forests, it is impossible to identify exactly who caused what damage. A possible solution is presented by concept of collective responsibility, which the German legal system allows for. This can mean the introduction of funds into which companies of the relevant sector pay. Collective responsibility can be seen as a special form of the "polluter pays" principle (see e.g. Kahl, 1993: 24; Rehbinder, 1997: 04/053).

A specific problem is posed by the situation in Eastern Germany. Numerous companies went bankrupt as a result of the economic restructuring processes that followed reunification. Many left heavily contaminated sites. In such cases, the *Verursacherprinzip* normally cannot really be applied, because polluters do not exist anymore. It is often left to the state, possibly assisted by money from the European Union, to take over financial responsibility.

[18] This the case, for example, with regard to sewerage were subsidies are a regular feature (Kraemer and Jäger, 1998: 312).

Talking about special cases, it has to be added that German practice showed that full application of the *Verursacherprinzip* is not always in the best interest of the environment. For example, past attempts to stop ship-owners to illegally dispose of their oil at sea by identifying the polluters were not very successful and the costs of trying to identify polluters were extraordinarily high. These are conditions were it might be advisable to organise environmental protection, i.e. the environmental friendly disposal of oil, on the basis of the Common Burden Principle. In the case of oil from ships, this can mean that the government organises and pays for a disposal and cleaning service at the harbours which is free of charge for shipowners (see Keiter and Staupe, 1996: 7).[19]

A very important example of the application of the *Verursacherprinzip* in Germany is included in Article 8 of the Federal Nature Protection Act/*Bundesnaturschutz-gesetz (BNSchG)*. This Article does require that anybody who is responsible for an operation of relevance to nature and landscape (and which requires permission by the authorities) must avoid negative consequences to nature and landscape.[20] If avoidance is not possible, compensation is required (Rehbinder, 1997: 04/052). For example, negative impacts on landscape caused by a new power station, road or waterway may have to be compensated by planting trees in the area around it. In practice, Article 8 *BNSchG* very much helps to ensure that local environmental conditions do not deteriorate substantially.

In the *water management sector*, the *Verursacherprinzip* has been introduced in several ways. First of all, Article 22 (1) of the federal Water Management Act requires that

> *"Whoever introduces or emits substances into a water body or affects a water body so that its physical, chemical, or biological characteristics are altered is liable to compensation for damages others suffer as a result. If several parties have caused such effects, they shall be jointly liable."*[21]

The liability is unlimited in time. Furthermore, the operators of installations must compensate damages even if they are operated in accordance with the law and any conditions imposed by the competent authorities (Kraemer and Jäger, 1998: 195).

An act based on the *Verursacherprinzip* is the federal Effluent Charges Act/ *Abwasserabgabengesetz*, which establishes a water pollution tax (Salzwedel, 1998: 15/084). Revenues have to be used for measures to improve water quality (Kraemer and Jäger, 1998: 221).

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[19] Another point worth mentioning is that the common burden principle allows unwanted consequences of events such as incipient bankruptcy to be overcome (Boehmer-Christiansen, 1994: 34).

[20] This can be seen as an application of the idea of precaution.

[21] Translation as given in Kraemer and Jäger (1998: 194-195).

Furthermore, most *Länder*-governments introduced taxes or charges for the abstraction of water from ground and surface water bodies (Salzwedel, 1998: 15/085-15/089).[22] Though not linked to pollution as such (and the polluter pays principle in its strictest sense) this clearly can be regarded as an application of the *Verursacherprinzip*, because the taxes and charges are related to resource depletion and possible other adverse environmental side-effects resulting from water abstraction.

The introduction of effluent charges and water resource taxes has resulted in substantial benefits. First of all, it provided an impetus to reduce water use and to limit pollution. In addition, it provides a source of finance, which allows carrying out various water management activities. It also created the need for continuously updated information and documentation, which provided an opportunity to strengthen the information base for administrative purposes. Furthermore, it introduced many elements of control and enforcement usually associated with revenue raising, thus helping to formalise and intensify communications between the administration and water users (Kraemer and Jäger, 1998: 225).

There are also sewerage charges for the provision of municipal sewerage services. These charges are supposed to cover the related costs. Thus they could be regarded as another good example for the application of the *Verursacherprinzip*. However, in practice, subsidies are a regular feature with regard to sewerage (Kraemer and Jäger, 1998: 297 & 312).

Serious deficits exist with regard to the implementation of the *Verursacherprinzip* in the German *energy sector*, which heavily depends on fossil fuels (Baratta, 1997: 1116-1138). Besides other effects, combustion of these fuels produces greenhouse gases and local and regional air pollution. The resulting damages are predominantly external effects the polluters do not pay for (see e.g. Seht, 2000; Hohmeyer, 1989). Furthermore, production and use of German coal are highly subsidised, a fact which certainly cannot be regarded as an application of the *Verursacherprinzip* (Baratta, 1997: 1131).

Nuclear power implies external environmental costs as well: Past uranium extraction in Eastern Germany left large, heavily contaminated areas. Estimates are that billions will have to be spend for the clean-up (Baratta, 1997: 1133; Masuhr *et al*, 1992: 62). Furthermore, it is unclear whether nuclear facilities and the facilities to store nuclear waste are sufficiently secured and insured. This relates to the controversial question of how large the risks involved really are (see e.g. Seifried, 1991: 54-55). Insufficient security and insurance would mean that substantial external costs could arise in the future.

[22] In most of the *Länder (States)*, revenue is primarily used to compensate farmers for land use restrictions (Salzwedel, 1998: 15/089).

The new energy taxes introduced in Germany are a first step towards a better implementation of the *Verursacherprinzip* in the energy sector. However, it has already been stated that the environmental effects of these taxes will probably be rather limited.

2.3 The principle of correction at source

Introduction

Article 174 (2) (former Article 130 r) TEC also demands that damage should, as a priority, be rectified at source. Basically, this means that negative environmental effects should be prevented at the earliest possible stage. Due to the given wording "as a priority", other concerns have to be very important to allow for an exemption (Himmelmann, 1997: 42).

In practice the principle means, for example, to develop environmentally friendly technologies and products. This can be much cheaper than having to spend money on expensive measures to rectify environmental damages resulting from inadequate technologies and products.

The European Court also referred the principle of correction at source in a decision on the import of waste. Based on the principle of correction at source, the Court ruled that Belgium was allowed to prohibit storing waste from other Member States or Belgian regions in Wallonie (Kahl, 1993: 23).

Implementation in Germany

The environmental principle of correction at source can be translated as *Ursprungsprinzip* (Kahl, 1993: 22). In Germany, the latter is seen as part of the *Vorsorgeprinzip/*precautionary principle (Kloepfer, 1989: 75; Kahl, 1993: 22).

There also is a connection between the principle of correction at source and the polluters pays principle/*Verursacherprinzip*. If the polluter/*Verursacher* would have to pay, this clearly would be an incentive to avoid or reduce environmental damage in the first place. For example, the mentioned taxes or charges for the abstraction of water can be seen as in line with both principles.

With regard to *water management*, the principle of correction at source mainly can be implemented by setting limit values/emission values, rather than quality targets/immission values. The German concept for water management is predominantly based on such emission values, which set minimum standards to emissions. However, additional immission values/quality targets can be fixed to give further orientation (Möbs, 1991).

Experience not only in Germany, but the EU as a whole, has shown that setting emission values was more environmentally effective in the past (Möbs, 1991: 116-117).[23] Furthermore, emission values contribute to fair competition: If such values are set, companies cannot refuse to adopt the same tough emission control measures as companies in other regions by pointing at particularly weak local quality targets. Correspondingly, there is now almost group consensus among Member States that emission values should be the norm (Schleicher, 1997: 44).

Nevertheless, quality targets have their place as they can be used as a safety net. For example, there certainly have to be minimum standards for drinking-water. However, as Schleicher (1997: 46) notes, quality standards should not be used to justify a right to pollute.

The principle of correction at source/*Urspungsprinzip* is also incorporated in the *Bundes-Immissionsschutzgesetz*/Federal Immission Control Act. Its Articles 32-35 enable the state to set detailed environmental standards for the composition of plants, materials and other products. These articles are of high importance in the *energy sector*. The resulting requirements for plants have to be met by medium-sized and large power stations. Furthermore, Article 34 specifically refers to fuels.

Another example for the implementation of the principle is the retrofitting programme for combustion plants in West Germany, which has already been mentioned in the section 2.1 on the precautionary principle. This response to acid rain and dying of the forests can be regarded as an application of the principle of correction at source. However, it has to be stated that the idea could have been implemented more effectively by reducing energy consumption on the basis of energy-efficiency measures or by fostering regenerative sources of power. Nevertheless, the programme was more in line with the principle of correction at source than, for example, spreading calcium carbonate or to plant tree species that can better cope with acid rain.

2.4 The principle of sustainable development

Introduction

Sustainable development has become a major issue in discussions on human induced environmental problems. Probably the most important events related to the principle were the publication of the Brundtland report (World Commission on

[23] This might have been due to the fact that immission values/quality targets have to be fixed more locally, because they have to take account of the local conditions. The problem is that at the local level the negotiating power of single polluters can be quite big, especially if they provide a lot of jobs. The result can be weak targets without substantial environmental effects.

Environment and Development, 1987) and the United Nation Conference on Environment and Development (UNCED, also called the Earth Summit), in Rio de Janeiro 1992 which placed the topic on the international political agenda.[24]

Unfortunately, there still is no internationally agreed definition of the term sustainable development. Many different definitions have been put forward by a variety of authors. The most accepted definition of sustainable development still appears to be the one of the Brundtland Commission:

> *"... development which meets the needs of the present without compromising the ability of future generations to achieve their needs and aspirations" (World Commission on Environment and Development, 1987).*

This definition will also be accepted here. However, it leaves much scope for interpretation, referring especially to discussions about "weak sustainable development" and "strong sustainable development". Both approaches can be seen as arguing for maintaining the total capital stock, but, in contrast to supporters of weak sustainable development, those favouring strong sustainable development emphasise that there are limits to the extent to which environmental capital may be substituted by man-made capital. They argue that certain environmental assets have to be defined as 'critical natural capital '(Rowan-Robinson *et al*, 1995: 270; see also Rehbinder, 1997: 04/030-04/031).

Public participation and access to environmental information are widely regarded as very important for the implementation of the principle. They are referred to as indispensable procedural parameters of sustainable development (Handl, 1995: 42-43).

Sustainable development is also an official aim of EU policy and the European Fifth Environmental Action Programme was already called 'Towards Sustainability' (Commission of the European Communities, 1993). Moreover the goal of sustainable development is now listed in Article 2 of the Treaty on the European Union (TEU).

The Union shall set itself the following objectives:

> *"... to achieve balanced and sustainable development …" (see also Article 6 TEC)*

Currently, efforts are underway to develop a comprehensive EU sustainable development strategy.

[24] However, this has not, as yet, let to significant environmental progress. On the current state of the (natural) environment and recent trends see, for example, Baratta (1999: 1255-1302).

Implementation in Germany

The idea of sustainable development, usually translated as *Nachhaltige Entwicklung*, has been at the heart of many environmental debates in Germany, in particular following the UNCED in 1992 and the publication of the influential study "*Zukunftsfähiges Deutschland*" ("Sustainable Germany"; BUND and Misereor, 1996).[25]

However, as in international debates, industrialists, environmentalist and others often referred to different concepts of sustainble development. Furthermore, regarding the scientific debate about environmental principles, there is no agreement on how the concept of sustainable development relates to the long established German *Vorsorgeprinzip*. Both concepts overlap to some extent and some argue that they could merge in the future (Rehbinder, 1997: 04/032-04/033).[26]

Nevertheless, despite ongoing discussions about the concept of sustainable development and its position in environmental policy, the principle has — to some extent and not explicitely — been implemented in German law (in some cases already a long time ago). For example, Article 20a of the Constitution/*Grundgesetz* refers to the idea of sustainable development by requiring that the state should protect the natural preconditions of life, taking account of its responsibility for future generations.

In the field of environmental law, the idea of sustainable development particularly has been taken account of with regard to rules on the use of regenerative natural resources.[27] For example, the Federal Act on Nature Protection/*Bundesnaturschutzgesetz* requires that nature and landscape have to be developed and taken care of so that the natural capacity as such and the related potential for human use is not reduced (Article 1 (1)). Furthermore, non-regenerative natural goods have to be used economically and consumption of regenerative natural goods has to be managed in a way that ensures such goods are always available (Article 2 (1) 3).

Long before the Brundland debate, the concept of sustainability/*Nachhaltigkeit* has been developed in forestry (Haber, 1995). There, it refers to a manner of forest management that aims at a high and stable long-term output. Most trees need a long time to grow. Thus, it was always important to take care of the needs of future

[25] The latter provides an overview of national deficits with regard to sustainable development and identifies possible ways towards sustainability. The authors emphasised the particular responsibilities of Germany as an industrialised nation, referring *inter alia* to its comparatively high per capita emissions and resource consumption.

[26] There is also an obvious connection to the other principles mentioned before. If the *Verursacherprinzip* and the *Ursprungsprinzip* are applied, this will normally contribute to reducing environmental damage and help to preserve the environmental resources future generations might need. Thus, it fosters the ability of future generations to achieve their needs and aspirations, the core idea of sustainable development.

[27] The principle requires that regenerative natural resources are only used or consumed to an extent that allows for their ongoing use in the future (Rehbinder, 1997: 04/031).

generations. In general, the amount of trees cut has to reflect the number of young trees planted, also taking into account potential future losses due to storms and other detrimental effects. Furthermore, application of the concept of sustainability requires that forests have to be managed in a way that the productivity of the ground does not decline in the long-run. Thus, it is not surprising that today Articles 1 and 11 of the federal Act on Forests/*Waldgesetz* demand that forests have to be managed in a sustainable way ('nachhaltig'). As a justification, reference is made not only to the economic, but also the environmental importance of forests.

In the field of *water management*, Article 36b (1) *WHG* demands that ground water reserves have to be taken care of as far as necessary. Furthermore, Article 1a (1) *WHG* states that waters are a part of nature, which have to be managed so that avoidable degradation does not occur. However, this is not a very decisive and clear implementation of the principle of sustainable development. The criticism is supported by the fact that in the past there has already been an over-use of ground water reserves in some German regions. Thus, despite the fact that water consumption is lower than in many other European countries, sustainability considerations need to be better implemented (see Baratta, 1997: 1221).

Rehbinder (1997: 04/032-04/033) emphasises in particular the deficits with regard to the implementation of the concept of sustainable development in German laws on the use of non-regenerative resources. For example, there is no general principle that materials have to be used in an economic way.

In the field of energy policy the new energy taxes mentioned do, in principle, support the concept of sustainable development. This is also valid for the federal Act on Energy-saving/*Energieeinsparungsgesetz*, which aims to reduce the energy consumption of buildings. Both, the energy taxes and the Act on Energy-saving, are supportive of the aim to limit the consumption of non-regenerative sources of energy and to deal with the demand for energy services in a way that does not exceed the carrying capacity of the atmosphere.

However, there are considerable deficits. For example, the rates of the energy taxes have already been criticised as too low to have substantial environmental effects. Furthermore, despite the federal Act on Energy-saving (adopted already 1976) energy consumption of buildings still is much higher than it could and should be. Environmentalists have repeatedly called for a strengthening of the corresponding standards (see e.g. Schäffler, 1999: 8-9).

Articles 1 and 2 (4) of the *Energiewirtschaftsgesetz*/federal Energy Management Act also contain some of the ideas behind the concept of sustainable development. Basically, the Articles require aiming towards an energy system where energy is used in an economic way and that allows for the sustainable use of resources. Nega-

tive environmental impacts of the system are supposed to be minimised. Nevertheless, success in this area has been, so far, limited.

For example, the German power supply heavily relies on large condensation power stations that have an energy-efficiency rate of far less than 50%. A resource saving alternative is combined heat and power (CHP), allowing for an energy efficiency rate of up to 85% or more. However, CHP is only used to a very limited extent in comparison to its potential (see Müller and Hennicke, 1995; Seifried, 1991).

It is noteworthy that the process of restructuring the power sector in the east of Germany relied on similar concepts which had been implemented in the west. Despite the chance to foster *inter alia* combined heat and power or energy-saving efforts, the focus was, and still is, very much on new or modernised large power stations with a rather low energy-efficiency rate. Furthermore, power supply in the East will continue to rely to a large extent on brown coal, a source of energy that is known for its particularly negative implications for the global climate and the local environment (Hvelplund and Lund, 1998).[28]

One final comment has to be made. As experience with the federal Energy Management Act illustrates, it is not enough to put the phrase "sustainable development" or related general rules in articles of the relevant acts (see also Rehbinder, 1997: 04/032-04/033). In order to achieve significant effects in practice, more specific provisions are required. For example, the rate of consumption of a specific resource that is still (regarded as) sustainable could be determined. Such provisions do not necessarily have to be part of the law but may, for example, be part of administrative orders.

A push towards sustainable development might result from the national sustainability strategy/*Nationale Nachhaltigkeitsstrategie*. Following the example of the EU and several Member States, e.g. Sweden and The Netherlands, the German government currently is attempting to initiate the process of developing such a strategy. However, it remains to be seen if the process will be successful, how ambitious the result will be and whether it will really have an impact in practice.

2.5 The subsidiarity principle

Introduction

In contrast to principles such as the polluter pays principle or the principle of correction at source, the subsidiarity principle does not only apply to environmental

[28] For information on further environmental deficits in German energy policy see also previous sections; Boehmer-Christiansen (1993); Hvelplund and Lund (1998) or Schäffler (1999).

policy, but to all fields of regulation. According to the definition of Spiering and Albrecht (1990: 399), the idea basically is that only those tasks are dealt with at the higher level(s), that cannot be dealt with at the lower level(s).

Since the 1992 Maastricht summit, the subsidiarity principle has become a very important topic at the European level. The Maastricht treaty implemented this principle in Article 3b (now Article 5) TEC. It is intended to be applied to all policy sectors where the implementation of policy depends on national or subnational institutions (see Himmelmann, 1997: 122-127; Dams and Heide, 1995).

The European Commission takes the view that the idea of subsidiarity has been applied to EU policy-making for a long time, not only since Maastricht (Dams and Heide, 1995: 940-941). With regard to EU environment policy, this view has been supported, for example, by Williams (1996: 189).

However, there is no European wide agreement on what the exact meaning and status of the principle are. In some Member States the term subsidiarity principle even was little known before the Maastricht summit (Dams and Heide, 1995: 940).

Implementation in Germany

Given the fact that the principle of subsidiarity had been established in Germany a long time ago and that it was included in the TEC, mainly due to pressure from Germany (Dams and Heide, 1995: 945), it is particularly interesting to look at its implementation in this country.

It is generally accepted that federalism is closely linked to the principle of subsidiarity: a state and society that is constructed from the bottom to the top. Federalism linked with the concept of subsidiarity means that, in principle, the smaller unit has the primary responsibility (see Dams and Heide, 1995: 939).

Germany is a federally organised state.[29] State duties are distributed between the *Bund*/federal government and the *Länder*/federal states (in addition to EU competence). The Constitution/*Grundgesetz* also guarantees regional/local authorities (municipalities, communities and rural districts) the power of self-government.[30] Powers to enforce many local aspects of national and parliamentary legislation upon the municipalities and local districts has been given to the *Länder* (Hesselberger, 1991; Federal Ministry for the Environment, 1992: 77; Boehmer-Christiansen, 1994: 40).

[29] Historically, the idea to rebuild post-war Germany as a federal state was heavily influenced by the aim to create institutional barriers to totalitarian regimes (Haberl, 1991: 140).

[30] They may regulate local community matters, including environmental issues, on their own responsibility within the limits of the law.

The distribution of legislative and administrative competence is fixed in the Constitution. With regard to *inter alia* nature conservation, spatial planning, and landscape management, the *Bund* is only able to issue outline provisions. This also is the case with regard to water management. Outline provisions must be supported by *Land*-related legislation. This basically means that the *Länder* have to introduce their own laws, i.e. *Landeswassergesetze* in the case of water management (Hesselberger, 1991: 244 & 248; Federal Ministry for the Environment, 1992: 77).[31]

The *Bund* has the "concurrent" legislative competence *inter alia* for waste management, air pollution control, noise abatement and many aspects of transport. "Concurrent" means that the *Länder* have, in principle, law-making competence in these fields only as long as the *Bund* has not adopted acts on the issues at hand (Hesselberger, 1991: 244-247; Federal Ministry for the Environment, 1992: 77).

Furthermore, the *Bund* has concurrent legislative competence with regard to the energy sector and, in particular, nuclear power. Currently, this is a very important competence given the aim of the federal government to phase out nuclear power (first decisions have been taken) and to restructure the energy sector.

As the paragraphs above indicate, for a federal state the German federal government has quite a lot of power with regard to environmental concerns. There is no major environmental area where the *Länder* have the sole legislative competence (Steiger, 1997: 02/83). This is to some extent understandable, because many problems, such as river or water pollution, regularly have implications for the neighbouring *Länder*. Fair rules have to be adopted in order to ensure, for example, that companies in the *Land Baden-Würtemberg* do not pollute the Rhine more than necessary in order to save costs, a river which downstream is used for abstracting drinking-water. Thus, such issues are better dealt with at the higher level, i.e. by the *Bund* (or increasingly the EU).

However, in 1994 the balance of power was changed slightly by an amendment to the Constitution. Article 72 (2) now more clearly integrates the concept of subsidiarity. According to this Article, the central government can only use its legislative powers when a federal Act is necessary to establish equal conditions of living in all parts of the country or to preserve the legal and economic unity in the interest of the state as a whole. In cases of conflict, the chamber of the *Länder*, the federal parliament or the government of one (or more) of the *Länder* can ask the constitutional court to determine whether the preconditions are met (Article 93 (1) 2a) (Steiger, 1997: 02/83).

[31] Past political attempts to give the *Bund* concurrent legislative competence (see below) for the water management sector were not successful (Salzwedel, 1998: 15/006).

What has to be further discussed is that the term 'equal conditions of living' is used in Article 72 (2), instead of the term 'same conditions of living' (which was used in the past). This means that regional differences are accepted. Due to varying geographic, cultural and other conditions in German regions such as the mountain and the coastal areas, there is some need for different solutions in different parts of the country. The principle of subsidiarity can help to implement these solutions (Steiger, 02/084).

Another motivation for the use of the subsidiarity principle is the currently relatively low level of interest in political action in Germany. It is widely assumed that, in principle, interest in and acceptance of policy-making will be higher the lower the level of decision making. One of the reasons is that, the lower the level of decision-making, the better are, in principle, the chances of individuals to participate in and to have an influence on the decision-making process.[32]

On the other hand, to leave many decisions to the lower levels poses the risk that too many too different provisions result. This can make it very difficult and time-consuming for companies to decide on where to construct new plants.[33]

This leads to another problem. If decisions can be made at a low level, i.e. by the *Länder* rather than the *Bund*, than there is the risk that weak provisions will result. For example, a *Land* might find it politically impossible to adopt tough legislation on pollution that fully implements the polluter pays principle if the neighbouring *Länder* decide not to do so, because it could negatively affect the position of polluting domestic companies in economic competition.

Such considerations might have been the background for an agreement of the *Bund-Länder* working group on the implementation of EU water law in Germany (Veh and Knopp, 1995: 29). In 1993 the group decided, *inter alia*, to aim at a uniform and blanket coverage implementation. Thus, the *Bund* shall implement EU legislation to the extent possible under the Constitution

However, as already stated, the *Bund* is only able to issue outline provisions on water balance. In many cases the implementation of a European directive thus requires adoption or issuance of 16 legal instruments. Though they will be mostly identical, this is a very costly and time-consuming exercise (see Kraemer and Jäger, 1998: 273).

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[32] The importance of possibilities for participation is also emphasised with regard to the aim of achieving sustainable development (see e.g. Dams and Heide, 1995: 938-939; Handl, 1995: 42-43).

[33] They might have to study numerous different environmental requirements in different *Länder*, before possibly deciding to go to the *Land* with the least demanding provisions.

2.6 The principle of integration

Introduction

The environment is not only affected by environmental policy, but, for example, also by the regional development or transport policy. Correspondingly, the principle of integration basically requires that environmental concerns are also taken account in non-environmental policy areas.

Since the Amsterdam summit, the principle of integration has been strengthened at the EU level. The requirement that environmental protection be integrated into the definition and implementation of EU policies and activities has now been moved forward to Article 6 TEC, linked to a commitment to the aim of sustainable development:

> *"Environmental protection requirements must be integrated into the definition and implementation of Community policies and activities (...), in particular with a view to promoting sutainable development."*

The implementation of the principle in EU decision-making is still ongoing. It can be seen as one of the most important current political processes in the European Union. For further information on the principle of integration in EU politics see, for example, Hinterberger *et al.* (1998).

Implementation in Germany

In Germany authorities certainly have to evaluate and take account of environmental concerns with regard to decisions and measures that exclusively or primarily aim at the protection and development of the environment. However, though the aim of environmental protection is listed in Article 20a of the Constitution, there is no general principle that requires authorities to take the environmental implications of official plans, programmes or decisions into account (Rehbinder, 1997: 04/039).

This is a major deficit with regard to environmental protection in Germany.[34] Rehbinder (1997: 04/039-04/047) therefore argues that an attempt should be made to fully implement the principle of integration in German law.[35]

Nevertheless, to a limited extent the principle of integration has been implemented by the requirement that, before making a decision, planners have to take account of all

[34] This criticism does not mean that environmental concerns are generally not taken into account with regard to decisions in fields such as energy or regional policy. It means, however, that there is no general obligation to take account of such concerns, thus allowing for environmental deficits.

[35] He explicitly refers to the example of the TEC.

relevant effects (*Abwägungsgebot*; Rehbinder, 1997: 04/040). This includes environmental effects.

A new step forward could result from the general implementation of Strategic Environmental Assessment (SEA) of policies, plans and programmes, which is expected for the near future on the basis of an EU directive (Seht and Wood, 1998). SEA basically is the attempt to expand the rather successful Environmental Impact Assessment at project level towards strategic policy levels (Seht, 1999).

However, there is much resistance to SEA among German stakeholders who fear *inter alia* additional costs and delays in the political decision-making processes. Furthermore, up to now, practical experiences with SEA in Germany are rather limited.

The details of the integration of environmental concerns in water management, energy policy and other fields have already been sketched out in other parts of this paper. Thus, they will not be discussed here again.

2.7 Further relevant principles

The principle of co-operation

Another principle that is of high importance for German environmental policy is the principle of co-operation in political decision-making. According to this principle, all interested or affected parties should be consulted before a decision is made. This refers especially to groups such as trade unions, scientists, environmentalists or industry (Boehmer-Christiansen, 1994: 33; Keiter and Staupe, 1996: 7).

The aim is to achieve a consensus on the relevant issues, if possible. The government also expects that co-operation will enhance the information basis for decision-making, foster environmental protection activities of all those involved and that it will raise environmental awareness (Keiter and Staupe, 1996: 7).

The groups that have to be consulted are often listed in the relevant piece of legislation (Boehmer-Christiansen, 1994: 33), for example in Article 51 of the Federal Immission Control Act. Recently, co-operation of state and industry more often than before led to voluntary commitments, for example in the field of water protection (Vereinigung Deutscher Gewässerschutz, 1997: 18; Keiter and Staupe, 1996: 7). Industry normally prefers such commitments to laws (which might have been the alternative). Voluntary commitments provide the industry with much more flexibility and the fact that its representatives are directly involved in negotiating the provisions ensures that its interest are taken into account.

It is not fully clear if this trend will prevail and whether it will substantially contribute to environmental protection. Past voluntary commitments have frequently been criticised as being too weak to replace formal laws. In many cases options for sanctions in the case of non-compliance and for enforcement are missing (Keiter and Staupe, 1996: 7-8). Furthermore, policy-making by way of a bargaining process on voluntary commitments can lead to a lack of participation of other interests, such as environmental groups. On the other hand, co-operation and voluntary commitments can be a very valuable means for environmental protection in cases where there is doubt on whether the state or the authorities have the formal right to make a decision on a certain issue or were it would take too much time to adopt a decision or a formal act (Tünnes-Harmes, 1994: 29).

The principle of co-operation will also be relevant for the above-mentioned *Nationale Nachhaltigkeitsstrategie/*national sustainability strategy. The strategy is supposed to be developed through a process that allows all relevant groups to participate.

The principle of prevention

As was mentioned above, Article 174 (2) (former Article 130 r) TEC also lists the principle of prevention as a principle of EU environmental policy. According to Kahl (1993: 21), prevention aims at the total avoidance of environmental damages. This principle is closely related to the precautionary principle. Kiss (1996: 27) makes the following distinction:

> *"The difference between the principle of prevention and the precautionary principle is the evaluation of the risk threatening the environment. Precaution comes into play when the risk is high — so in fact that full scientific certainty should not be required prior to the taking of remedial action."*

With regard to the application of the principle of prevention in Germany, the difference between *Vorsorge* and *Vorbeugung* has to be discussed. As was already remarked earlier, *Vorsorge* is used as the German translation of precaution. Prevention usually is translated as *Vorbeugung* (see e.g. Kahl, 1993: 21).

Nevertheless, in German literature on national and European environmental law *Vorsorge* and *Vorbeugung* were predominantly used as exchangeable expressions (Kahl, 1993: 21). This has been discussed by Himmelmann (1997: 38-42) who argued that this practice is not accurate. He suggests that the following distinction should be made. *Vorbeugung* relates to activities where there is scientific proof that these can cause environmental damage, while *Vorsorge* relates to practices where there are only some indications that these could cause environmental damage. However, there are also other views on this issue (see e.g. Kahl, 1993: 21).

What can be said is that, even if the practice to use *Vorsorge* and *Vorbeugung* as exchangeable expressions would not be accurate, the difference does not appear to be of much practical relevance in Germany. So this issue will not be discussed any further.

3. Conclusions and comments on the current German environmental policy

Germany has often been called a European leader on environmental issues. This certainly was partially true in the past. Germany introduced ambitious environmental protection legislation earlier than other EU/EEC Member States and for some time Germany also pushed EU environmental policy.

Regarding environmental principles in particular it can be added that, for example, the idea of precaution actually evolved out of the German socio-legal tradition (and still is very important for German environmental policy). Furthermore, the new official EU principle of subsidiarity has been one of the cornerstones of the post-war German political system right from the start.

Generally, there is a wealth of experience with regard to environmental principles in Germany. The previous sections included some interesting examples of how environmental principles can be implemented, providing valuable information for policy-makers in other countries. However, even though all environmental principles of the EU have been implemented to some extent in Germany, they have not been implemented in full and in all fields.

As an example, Germany recently introduced new energy taxes, taking account of, *inter alia*, the polluter pays principle, but the taxes do not cover the external cost of energy use. Furthermore, the principle of sustainable development has not been implemented in a persuasive way. Amongst others, there is no general principle that materials have to be used economically.

Especially since the recession at the beginning of the 1990s and often unjustified criticism regarding the impact of environmental protection requirements on competitiveness, environmental progress is hard to achieve, let alone "strong" sustainable development. Today, for large parts of the population other issues seem more pressing than, for example, the implementation of environmental principles. Furthermore, the costs of the reunification are limiting the financial resources of the government available for environmental protection. Under the new coalition government of the social democrats and the green party, the conditions for an ambitious environmental policy at the national and international level did not improve very much.

Following these circumstances, apart from the aim of protecting the environment, two important goals can be identified that current German environmental policy appears to be directed at. First, that environmental protection efforts shall be facilitated in a way that keeps the costs for the state low. A major means to achieve this is the more consequent application of the polluter pays principle. Examples are the charges for the abstraction of drinking water, which now have been introduced in most *Länder* or the new energy taxes. In addition, the above mentioned Power Feed-in Act (section 2.1) can be seen as in line with this aim, because is does not require the state to pay for the related costs of supporting renewable energies.

The second aim is to choose measures that do not harm the economy, or at least are not perceived as harmful. In the best case, they should result in and be publicly perceived as bringing about economic gains.

A problematic result is the tendency to base environmental policy to a larger extent on voluntary commitments of businesses, rather than formal laws: Certainly it is not only popular, but also sensible to implement the principle of co-operation by consulting all the affected or interested groups before adopting a law. Amongst others, this improves the information basis. Voluntary commitments, however, may often lead to environmentally weak results, due to the strong negotiating position it gives to businesses. In case of commitments of representatives from whole business sectors, they can also allow for free-riders (businesses from the relevant sector that do not take on commitments or implement commitments).[36] Furthermore, democratic principles require to take all interests into account, and voluntary commitments might lead to an over dominant position of business interests.

Another attempt to address the second aim are again the new energy taxes. Members of the government and the ruling political parties presented these taxes to the electorate and business interests as taxes that bring about economic gains, often even omitting reference to the fact that it addresses the polluter-pays principle and brings about positive environmental effects. The main argument used is that the revenue recycling included in the concept will help to create or save jobs, while, on average, it will avoid higher costs for businesses. Sometimes, it is also stressed that less money for energy imports will get lost to the national economy and that measures to re-structure the energy sector will provide business opportunities.

Although the economic impacts of certain environmental protection measures are often subject to some controversy, the thesis that energy taxes will bring about economic benefits matches with general scientific findings on many environmental protection efforts. German experience shows that environmental protection measures, if designed effectively, will lead to substantial positive economic impacts.

[36] These free riders might benefit from the fact that the approach of voluntary commitments is chosen rather than laws that might have forced them to undertake costly environmental protection efforts.

For example, Germany, together with the US, is the world leader with regard to the market of environmental protection technologies. According to official estimations, by the year 2000 at least 1.1 million Germans will work in fields related to environmental protection (Umweltbundesamt, 1997).

Therefore, without going into any further detail,[37] it can safely be stated that the political emphasis on the economic impacts of environmental policies must not necessarily have a major negative impact on German environmental policy and the implementation of environmental principles. The prospects could improve considerably if the substantial economic benefits of environmental policy would be better communicated to policy-makers and the general public.

However, it should not be forgotten that there will always be cases where measures have to be taken that are not economically beneficial, for example to avoid risks for human life, thus implementing the precautionary principle. A responsible environmental policy therefore can never be limited to measures that result in economic benefits.

In the near future, the outcome of the just initiated process of developing a national sustainability strategy might indicate the direction in which German environmental policy will proceed.[38]

[37] For more information see, for example, Umweltbundesamt (1997) or Seht (2000).

[38] This paper partially has been based on the contribution of the authors to the project "Comparative survey between the European Union and Hungary on the implementation of environmental principles". We would like to thank all those involved in this project, especially the Hungarian Prime Minister's Office, WMEB, PROMEI and Prof. Zsolnai for the fruitful co-operation and the possibility to use results from our part of the project for this paper.

Literature

Baratta, M. v. (ed.) (1997): *Der Fischer Weltalmanach 1998*, Frankfurt (Fischer).

Baratta, M. v. (ed.) (1999): *Der Fischer Weltalmanach 2000*, Frankfurt (Fischer).

Boehmer-Christiansen, S. (1994): The precautionary principle in Germany — enabling government, in: O'Riordan, T.; Cameron, J. (ed.): *Interpreting the precautionary principle*, London (Earthscan), 31-60.

Brickwedde, F. (ed.) (1998): *Umweltschutz in Ostdeutschland und Osteuropa — Bilanz und Perspektiven*, Osnabrück (Steinbacher).

BUND; Misereor (ed.) (1996): *Zukunftsfähiges Deutschland, Ein Beitrag zu einer global nachhaltigen Entwicklung*, Basel (Birkäuser).

Cameron, J; Abouchar, J. (1996): The Status of the Precautionary Principle in International Law, in: Freestone, D; Hey, E. (ed.): *The Precautionary Principle and International Law: The Challenge of Implementation*, The Hague (Kluwer Law International), 29-58.

Commission of the European Communities (1993): *Towards Sustainability — A European Community programme of policy and action in relation to the environment and sustainable development*, Luxembourg (Office of Official Publications of the European Communities).

Dams, T.; Heide, H.J.v. (1995): Subsidiaritätsprinzip, in: Akademie für Raumforschung und Landesplanung (ed.): *Handwörterbuch der Raumordnung*, Hannover (ARL), 937-945.

Dehmke, C. (1994); *Die Implementation von EG-Umweltpolitik in den Mitgliedsstaaten: Umsetzung und Vollzug der Trinkwasserrichtlinie*, Baden-Baden (Nomos)

Europe Environment (Anonymous) (1999): Wind energy: Germany is world leader, *Europe Environment*, no. 541, I 5.

Federal Ministry for the Environment (ed.) (1992): *Environmental Protection in Germany*, Bonn (Economica).

Freestone, D.; Hey, E. (1996): Origins and Development of the Precautionary Principle, in: Freestone, D; Hey, E. (ed.): *The Precautionary Principle and International Law: The Challenge of Implementation*, The Hague (Kluwer Law International), 3-15.

Friedrich-Ebert-Stiftung (ed.) (1997): *Neufassung des Energiewirtschaftsrechts: Umweltbelange und Effizienzsteigerungen*, Bonn (Friedrich-Ebert-Stiftung).

Haber, W. (1995): Nachhaltigkeit, in: Akademie für Raumforschung und Landesplanung (ed.): *Handwörterbuch der Raumordnung*, Hannover (ARL), 658-659.

Haberl, O.N. (1991): Föderalismus, in: Nohlen, D. (ed.): *Wörterbuch Staat und Politik*, München (Piper), 139-150.

Hallo, R. (1997): The Environmental Results of the Amsterdam EU Summit, *elni*, no. 1, 27-28.

Hancher, L. (1996): EC Environmental Policy — a Pre-cautionary Tale?, in: Freestone, D; Hey, E. (ed.): *The Precautionary Principle and International Law: The Challenge of Implementation*, The Hague (Kluwer Law International), 187-207.

Handl, G. (1995): Sustainable Development: General Rules versus Specific Obligations, in: Lang, P. (ed.): *Sustainable Development and International Law*, London (Graham & Trotman), 35-43.

Heimlich, J. (1998): Der Begriff "Stand der Technik" im deutschen und europäischen Umweltrecht, *Natur und Recht*, no. 11, 582-587.

Hesselberger, D. (1991): *Das Grundgesetz: Kommentar für die politische Bildung*, Neuwied (Luchterhand).

Hey, C. (1999): Enttäuschende Zwischenbilanz der deutschen Ratspräsidentschaft, *UVP-report*, no. 2, 65-66.

Himmelmann, S. (1997): *EG-Umweltrecht und nationale Gestaltungspielräume*, Baden-Baden (Nomos Verlagsgesellschaft).

Hinsch, C. (2000): Windkraft weiter auf Wachstumskurs, *Neue Energie*, no. 2, 12-16.

Hinterberger, F.; Schepelmann, P.; Spangenberg, J.; Burdick, B.; Hofreither, M.; Kanatschnig, D.; Schmutz, P. (1998): *Integration von Umwelt-, Wirtschafts- und Sozialpolitik*, EU Policy Paper No. 1, Wuppertal (Wuppertal Institut für Klima, Umwelt, Energie).

Hohmeyer, O. (1989): *Soziale Kosten des Energieverbrauch: Externe Effekte des Elektrizitätsverbrauchs in der Bundesrepublik Deutschland*, Berlin (Springer).

Hvelplund, F.; Lund, H. (1998): *Rebuilding without restructuring the energy system in east Germany*, Energy Policy, 7, 535-546.

Kahl, W. (1993): *Umweltprinzip und Gemeinschaftsrecht: Eine Untersuchung zur Rechtsidee des "bestmöglichen Umweltschutzes" im EWG-Vertrag*, Heidelberg (Müller).

Keiter, H.; Staupe, J. (1996): Organisation des Umweltschutzes, in: Vogel, J; Heigl, A.; Schäfer, K. (ed.): *Handbuch des Umweltschutzes*, IV-1: 1-98, Landsberg am Lech (ecomed), IV-1.

Kiss, A. (1996): The Rights and Interests of Future Generations and the Precautionary Principle, in: Freestone, D; Hey, E. (ed.): *The Precautionary Principle and International Law: The Challenge of Implementation*, The Hague (Kluwer Law International), 19-28.

Kloepfer, M. (1989): *Umweltrecht*, München (Beck).

Koch, H.-J. (1991): Luftreinhalterecht in der Europäischen Gemeinschaft, in: Behrens, P.; Koch, H.-J. (ed.): *Umweltschutz in der Europäischen Gemeinschaft*, Baden-Baden (Nomos), 75-97.

Kraemer, R.A.; Jäger, F. (1998): Germany, in: Correia, F.N. (ed.): *Institutions for Water Resources Management in Europe*, Rotterdam (Balkema), 183-325.

Masuhr, K.P.; Wolff, H.; Keppler, J. (1992): *Identifizierung und Internalisierung externer Kosten der Energieversorgung*, Basel (Bundesministerium für Wirschaft).

Möbs, H. (1991): Gewässerschutz in Deutschland und in der Europäischen Gemeinschaft — Divergierende Zielsetzungen?, in: Behrens, P.; Koch, H.-J. (ed.): *Umweltschutz in der Europäischen Gemeinschaft*, Baden-Baden (Nomos), 112126.

Müller, M.; Hennicke, P. (1995): *Mehr Wohlstand mit weniger Energie*, Darmstadt (Wissenschaftliche Buchgesellschaft).

Obernolte, W.; Danner, W. (1999): *Energiewirtschaftsrecht: Energiewirtschaftsgesetz mit den Durchführungsbestimmungen, Nebengesetzen, Verordnungen und Erlassen*, Kommentar, München (Beck).

Oberthür, S.; Ott, H. (1999): *The Kyoto Protocol: International Climate Policy for the 21st Century*, Berlin (Springer).

O'Riordan, T.; Cameron, J. (1994): The History and Contemporary Significance of the Precautionary Principle, in: O'Riordan, T.; Cameron, J. (ed.): *Interpreting the precautionary principle*, London (Earthscan), 1-30.

Rehbinder, E. (1991): *Das Vorsorgeprinzip im internationalen Vergleich*, Düsseldorf (Werner Verlag).

Rehbinder, E. (1997): Ziele, Grundsätze, Strategien und Instrumente, in: Arbeitskreis für Umweltrecht (ed.): *Grundzüge des Umweltrechts*, Berlin (Erich Schmidt Verlag), 04/001-04/132.

Rowan-Robinson, J., Ross, A. and Walton, W. (1995): Sustainable development and the development control process, *Town Planning Review* 66, 3, 269-285.

Salzwedel, J. (1998): Wasserrecht, in: Arbeitskreis für Umweltrecht (ed.): *Grundzüge des Umweltrechts*, Berlin (Erich Schmidt Verlag), 15/001-15/099.

Sands, P. (1995): International Law in the Field of Sustainable Development: Emerging Legal Principles, in: Lang, P. (ed.): *Sustainable Development and International Law*, London (Graham & Trotman), 53-66.

Schäffler, H. (1999): Klimaschutzpolitische Nachhilfe für die Bundesregierung, *Rundbrief* (newsletter of the Forum Umwelt & Entwicklung), 3, 8-11.

Schleicher, U. (1997): The New Direction of Water Protection Policy, *Environmental Policy and Law*, 1, 44-47.

Schmidt, D. (1999): Hält die Energiesteuer, was sie verspricht?, *Energiewirtschaftliche Tagesfragen* 49, no. 9, 580-585.

Schmidt, R.; Müller, H. (1987): *Einführung in das Umweltrecht*, München (Beck).

Seht, H. v. (1999): Requirements of a comprehensive strategic environmental assessment system, *Landscape and Urban Planning* 45, 1, 1-14.

Seht, H. v.; Wood, C. (1998): The Proposed European Directive on Environmental Assessment: Evolution and Evaluation, *Environmental Policy and Law* 28, 5, 242-249.

Seht, H. v. (2000): *Klimaschutz mit Eigennutz? Sekundäreffekte kommunaler Klimaschutzmaßnahmen*, Dortmund (Dortmunder Vertrieb für Bau- und Planungsliteratur) .

Seifried, D. (1991): *Gute Argumente: Energie*, München (Beck).

Spiering, R.; Albrecht, N. (1990): *Politik auf einen Blick*, Köln (Buch und Zeit).

Steiger, H. (1997): Verfassungsrechtliche Grundlagen, in: Arbeitskreis für Umweltrecht (ed.): *Grundzüge des Umweltrechts*, Berlin (Erich Schmidt Verlag), 02/001-02/092.

Tünnesen-Harmes, C. (1994): Prinzipien des Umweltrechts, in: Himmelmann, S.; Pohl, A. Tünnesen-Harmes, C. (ed.): *Handbuch des Umweltrechts*, München (Beck), A.2.

Umweltbundesamt (1997): *Umweltschutz und Beschäftigung*, Berlin (Umweltbundesamt).

Veh, G.M.; Knopp, G.-M. (1995): *Gewässerschutz nach EG-Recht*, Stuttgart (Richard Boorberg).

Vereinigung Deuterscher Gewässerschutz (1997): Stand des Gewässerschutzes in Deutschland, in: Vogel, J; Heigl, A.; Schäfer, K. (ed.): *Handbuch des Umweltschutzes*, IV-1: 1-98, Landsberg am Lech (ecomed), II-3.1.

Wey, K.G. (1993): *Umweltpolitik in Deutschland*, Opladen (Westdeutscher Verlag).

Williams, R.H. (1996): *European Union Spatial Policy and Planning*, London (Paul Chapman Publishing).

Witt, A. (1999): Rot-grüne Umweltpolitik — Aufbruch oder Stagnation: Einführung ins Schwerpunktthema, *UVP-report*, no. 2, 61.

World Commission on Environment and Development (1987): *Our Common Future*, Oxford (Oxford University Press).Baratta, M. v. (ed.) (1997): Der Fischer Weltalmanach 1998, Frankfurt (Fischer).