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Environmental Policy in the Federal Republic of Germany

by

Udo Ernst Simonis

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»The present environmental problems of Germany persumably will be the future environmental problems of many other countries.«
Karl W. Deutsch

1. Defining Environmental Policy

Theoretically, *environmental policy* can be defined as the sum of objectives and measures designed to regulate society's interaction with the environment as a natural system; it comprises aspects of environmental conservation, restoration, and management. Since society's long-term existence ultimately depends on the natural environment and its resources, environmental policy in principle involves *all* societal rules governing the use of nature by human beings.

In practice, however, environmental policy does not conform to such a broad definition. Only selected parts of the relationship between environment and society become the subject of policy. So far, environmental policy has mainly been designed as a set of media-specific policies concerning air quality, water quality, noise abatement, and waste disposal. This *conventional* type of environmental policy was based on the recognition of the fact that a number of emissions and waste products resulting from production and consumption processes are detrimental to human health. Only in recent years has it been recognized that, in reality, not only is the existence of the ecological system threatened, but also the sustainability of the economic system and the acceptability of the social system.

Political reaction to this realization brought about changes during the 1970s and the 1980s to reduce the volume of harmful emissions and waste products. Contrary to original assumptions, however, discrete policy areas that control the use of resources and the corresponding technical systems -- especially those managing industry, infrastructure, energy, and agriculture - proved to be vital factors in the relationship between environment and society. Of course, conventional media specific environmental regulation is still useful and very much a necessity. However, it carries the inherent risk that the measures employed may not be coordinated, or that problems may be spatially shifted or displaced from one environmental medium and location to another (i. e., *problem shifting* or *problem displacement*).

Thus the discussion on the relationship between environment and society should not be solely confined to the questions of conventional environmental policy. A broader, more comprehensive perspective on environmental problems is needed in which the political response of the various societal actors - government, industry, environmentalists, and society as a whole - to the use of natural resources and the pollution of the environment should become the focus of discussion.

After more than a decade of established environmental policy in most industrial countries, the basic lines of response to environmental problems can be pointed out. Of primary importance is the question of political response or *implementation* of policy, namely: how rapidly and in what way or style does such response occur and how much freedom do the societal actors have in chosing between various options to deal with environmental problems?

The tendency to remain on more or less *curative, re-active stages* of response has been viewed by many critics of environmental policy as a structural deficiency of industrial society. Whether, and to what extent, processes of ecological modernization and structural change take place depends partly on the knowledge acquired about *environmental damage* itself, on the availability of *low emission technologies*, on the relative strength of economic and political *interest groups* at the time when environmental damages are assessed and on the costs of response to be distributed. Successful environmental policy, then, results in part from improved information and technology, and in part by structural economic and social change. It may thus be assumed that as knowledge about the state of the environment, its trends, and its determinants increases, responses that go beyond mere reaction will result. Environmental policy would then progress from its curative phase (*react-and-cure strategy*) to a preventive one (*anticipate-and-prevent strategy*). It would evolve from a policy of *ex post environmental protection* into an *integrated ex ante environmental policy*, devoted to an ecologically sound development of the economic and technological systems.

The concept of *anticipatory or preventive environmental policy* could, in short, be described by certain basic patterns of goals and means, objectives and measures, i. e.:

- o Prevention of the spread of all harmful emissions and waste products that exceed the assimilative capacity of the ecosystems through more and improved recycling, introduction of low emission technologies, and pre-emptive substitution of environmentally harmful products and production processes.
- o Conservation of non-renewable resources, encouragement of the use of highly efficient renewable resources, and drastic reduction or redesign of all combustion processes.
- o Active management of the natural environment allowing for greater participation of hitherto underrepresented public interests in all relevant planning procedures (industry, infrastructure, technology, energy, agriculture, etc.), and aiming for a strong institutionalization of the prevention principle throughout society.

By consequence, the successful application of anticipatory or *preventive environmental policy* requires structural changes in the existing political and administrative system because it must cover a scope broader than that of conventional, media-specific policy. It may, therefore, be expected that anticipatory or preventive environmental policy will encounter opposition that tries to restrict the scope of the policy, to de-institutionalize parts of it, and ultimately to force it back into the limited realm of regulating effects (damages) instead of causes (emissions). If such a tendency prevails, the largely re-active, curative environmental policy of the past would be pre-programmed for the future.

2. General Assessment of Environmental Policy in Germany

Already in the late 1970s and particularly since the 1980s, the environmental issue has had a strong basis in the German society.[1] By the end of 1982, the *Greens* were already represented in six state parliaments and the general election of March 1983 brought them into the national parliament. Since the mid 1980s, some 1,500 environmental initiatives (*Bürgerinitiativen*) or associations (*Umweltschutzverbände*) with more than 5 million

1 In the following I mainly refer to the former Federal Republic of Germany, i. e., West Germany, before the unification in 1990. In an addendum I shall try to depict the major developments in the former German Democratic Republic, i. e., East Germany, since then.

members have come into existence. The consumer associations have become very active regarding the environmental soundness of products. The press activities on environmental issues have increased dramatically, reaching far beyond the experts and specialists and making the environment a concept known throughout the country and an issue of day-to-day-politics.

The level of environmental awareness of the population reached a new high. According to a recent representative survey, some 80% of the general public, 80% of the industrial managers, 93% of the politicians and some 99% of the environmentalists declared the state of the natural environment to be a »serious problem«.

These and other indications show that, within a short period, environmental issues in the FRG had become a major political theme. In the first official environmental programme of 1971(!), the *promotion of environmental awareness* had been declared a goal of *national* environmental policy. One may say that this goal has been achieved, not only *because* of environmental policy, but also *despite* of it. With regard to the other goals, especially those concerning the situation in some of the environmental sectors (or media), an assessment does not produce such good results. Four of the environmental sectors (media) shall shortly be assessed below.

Of course, successes and failures of environmental policy are not that easy to assess. This is especially so for Germany, where there is a specific division of labour between the national, the regional and the local level as regards to goal setting and using measures and instruments. Fairly early in the short period of official environmental policy (which started in 1971), the hypothesis of »implementation shortfalls« was put forward. A discrepancy was discovered between the pretentious legal provisions and the goals of environmental policy, on the one hand, and its practical application on the other.

Therefore, an overall assessment of environmental policy in Germany would have to look not only for the specific weaknesses originating from the institutional relationships in a federal political system (division of labour between the various governmental levels) but also for the structural factors conditioning goal setting, legal provisions, and use of instruments. Among them are the role and impact of the various sectoral interests, especially those of industry and environmentalists, the role of the media (TV, radio and print media), of jurisdiction (of special relevance when comparing e. g. the FRG with other countries), of international and supranational relationships (of special relevance when considering e. g. emission control of automobiles and power plants). Such a comprehensive assessment, of course, cannot be given here. It could only be provided on the basis of several empirical case studies. However, a short overview on the successes and failures of environmental policy in Germany can be presented with regard to certain environmental media, and the policy style developed, including the reaction to the challenge imposed on the referred policy style by certain environmental groups, and by »environmentalism« in general.

Since the early 1970s, environmental policy has helped to reduce problems in some sectors (environmental media), while in other sectors, the problems have aggravated. Also the improvements in environmental research, especially in monitoring techniques, have disclosed problems and cause-effect-chains that were hitherto unknown, dioxine being just a spectacular example. In the following, an overview is presented on some selected sectors (media) of environmental policy.[2]

2.1 Air Pollution

Compared to the early 1970s, air pollution in West Germany has decreased drastically with regard to certain pollutants, while with respects to others the situation remained rather unchanged.

A decrease in air pollution was reached with regard to

- o dust emissions which declined from 1.8 million tons in 1966 to 0.7 million tons in 1982, and 0.53 million tons in 1988;
- o carbon monoxide emissions which were lowered from 12.4 million tons in 1966 to 8.7 million tons in 1988;
- o the lead content in the air in urban areas which was reduced by more than two thirds due to the »law on lead in petrol«, enacted as early as 1971;

2 I deliberately shall leave out the question of nuclear waste which is quite a complex problem, and has not, and probably will not be solved in a convincingly manner. Mention must be made, however, that the environment ministry is also in charge of nuclear reactor safety.

- SO_2 emissions which decreased from 3.2 million tons in 1978 to 1.3 million in 1988.

In contrast, the development of the chlorofluoromethane emissions was rather dissatisfactory. Only recently, with the signing of the Montreal Protocol and the subsequent revisions of the protocol in Helsinki (1989) and London (1990), Germany decided to fully phase out CFC production by 1994. Local deposition of heavy metals in several cases exceeded the safety limits. A further increase in the NO_x emissions was registered from 2 million tons in 1966 to more than 3 million tons in 1982, and only since the end of the 1980s has the trend been reversed.

In the early 1980s, a drastic aggravation of the problem of acid rain had occurred in Germany (and other parts of Europe). Damage from acid rain was registered not only for buildings, monuments, lakes and soil, but especially for the forests. An unprecedented increase in forest damage (or the dying of forests, *Waldsterben*) took place, affecting in some regions more than 60% of the forest stock. An intense debate began on the cause-effect-chains (NO_x or SO_2, or Ozone, etc.), leading to an immense number of differing hypotheses. This debate by the scientists diverted, in many ways, from the necessary implementation of urgent measures to reduce air pollutants at once. Forest damage thus became a »burning issue«, not only in Germany, but also in the neighbouring countries.

One main reason for the increase of NO_x emissions since the 1970s has been ever increasing the number of automobiles on the roads. From the chosen type of technology of increasing engine efficiency, and because of higher combustion temperatures, more NO_x emissions have resulted. In contrast, NO_x emissions from industrial production in general have decreased rapidly. All in all, NO_x emissions are still much too high, and particularly in summer time lead to local or regional smog (so-called summer smog).

The main opponent to a strict and thorough environmental policy in the air pollution sector was and still is, of course, industry or parts of it. An early success of policy in the FRG was the enforcement of the »law on lead in petrol« (1971) which was enacted despite strong delaying pressure by the oil and car industry. This successful preventive environmental strategy must be mentioned particularly because all other legislative measures which followed were much more of a react-and-cure type of policy. For instance, the potentially strong regulatory provisions of the Federal

Immission Act of 1974 addressed only *new* plants, while for *existing* plants the criterion of »economic feasibility« was applied, which, generally, weakens the position of the regulatory bodies in all cases of conflict. Even the question of what is a new and what is an existing plant has led to serious political debate (for instance in the *Buschhaus* case). Furthermore, this legislation was predominantly oriented towards depositions (*effects*), and not emissions (*causes*), leading to a high demand for measuring, monitoring and control systems.

In this way, »end-of-pipe technology« was promoted while integrated, low emission technology did not get the necessary incentives. These »add-on solutions«, typical for the air pollution sector, lead to *problem shifting*, i. e., to cross-media or inter-regional external effects. The best known example of such a solution is the policy of »high smokestacks« which reduces pollutants locally, but transfers them regionally and into other environmental media, such as water and soil. While the *»polluter pays principle«* in the air pollution sector has been applied to new plants (technical ordinance for clean air, *»TA-Luft«*), the *»taxpayer pays principle«* here has been applied indirectly. This means that in contrast to other policy sectors (e. g., noise abatement) in the FRG, there has been no direct, large governmental expenditure programme for anti air pollution measures in *stationary* sources, but only an indirect one, i. e., tax exemptions for the respective investments by industry.

Regarding *mobile* sources of air pollution such as the automobile, the government programme was also largely of an indirect type, i. e., granting tax deductions for cars with catalytic converters or diesel engines. The original programme, however, has been reduced through intervention by the European Commission because national tax incentives for low emission automobiles were interpreted as being in contradiction to the provisions of the EC treaty (i. e., non-tariff barriers). The programme first was timely limited, but was extended due to the unsatisfactory low demand for »clean« cars. Currently, however, nearly ninety percent of the newly bought cars contain catalytic converters.

Official legal responsibility of state and industry in Germany differ from one environmental sector (media) to the other. This leads to a diversified picture when looking at the investment structure, i. e., investments by state and industry in the various sectors. *Table 1* and *2* give an overview on the *environmental protection investments* by the manufacturing industry and government, respectively, for the years 1975-1987; *Table 3* shows the aggregate figures of the *total expenditures* (investment and current expenditures) for environmental protection, at current prices and 1980 prices (see *Appendix*).

2.2 Water Pollution

In the 1970s, the water laws in the FRG were drastically reshaped and - in connection with several EC directives - led to certain improvements of the water quality in the country:

- By 1990, some 92% of the (West)German population were connected to waste water treatment plants; the waste water of about 86% of the households is being biologically treated;
- the eutrophication of surface water has been reduced;
- in the rivers a reduction in the load of heavy metals, particularly cadmium, was registered, and the oxygen content has risen.

The efforts in this policy sector - quite similar to the air pollution sector - where dust, SO_2 and CFCs were addressed while CO_2 was left out - were focussed on a few major pollutants, like phosphate, and heavy metals. Unfortunately, however, several pollutants cannot be reduced by biological purification plants. They accumulate in the sewage sludge which again is difficult to handle in an economically and ecologically sound way. In this sense, water pollution is still a problem in Germany despite the large amount of public investments that have gone directly into thousands of purification plants all over the country.

In addition, there has been growing evidence of a deterioration of the quality of ground water. In some regions of Germany, the ground water is severely affected by nitrates diffused by intensive agricultural activities. Securing good water quality has thus become more costly, and in this way creates a new awareness of the existing environmental threats.

It may be of interest to make some remarks on the policy instruments used in the water sector. Somewhat contrary to the air sector, diversified regulatory measures and public investments go hand in hand with new economic incentives. The »law on detergents« (1975), for instance, provided for a continuous reduction in the use of phosphate, the last stage of which came into effect in 1984. Large sums of public investments were spent for sewage, drainage, and waste water treatment, while comparatively few resources (and ideas) were spent for waste water recycling. Only recently have some industries begun to invest heavily in recycling technology. Again, as in the air pollution sector, the strong emphasis of policy on *treating* polluted water instead of *reducing* the entry of pollutants into the water cycle led to problem shifting (this cross-media effect being especially obvious as regards to the use of toxic sewage sludge as manure for agricultural land).

In 1981 an economic instrument was enacted which attracted great academic and public attention: The »Waste Water Charges Act« which imposes a tax on the discharge of effluents into the water bodies. The assessment basis is the degree of pollution of the waste water, measured in polluting units; the tax rate per polluting unit is progressive. It seems, however, that the expectations connected with this instrument have not really been fulfilled, particularly because in the process of enacting the law the tax rate itself was continuously lowered, thus decreasing the economic incentive to take preventive action.

Finally, it must be said that *water saving* - quite contrary to *energy saving* - in Germany has not yet become a widespread social activity.

2.3 Noise Pollution

Regarding noise pollution some problems have been tackled while others are still waiting to be solved:

- o Noise in industry and at the work place was drastically reduced in many cases; new plants and equipment generally produce less noise than old ones;
- o particularly successful were the efforts to reduce noise from construction activities;
- o the »law against aircraft noise« and the respective measures taken (prohibition of nightflights; investment in noise-proof windows; compensation for noise pollution), action against noisy aircraft (progressive landing fees), and the introduction of new, less noisy aircraft produced some relief from this very special environmental problem.

Besides these and other partial solutions, noise pollution remains a serious problem, particularly because of increasing automobile traffic. Since 1970 the number of automobiles has more than doubled, from 15 to over 33 million (and will increase further due to the high demand for cars in East Germany); and road construction is still pushed despite the fact that Germany has one of the most dense and perfect road networks in the world. As exemplified by the fruitless debate about a speed limit on highways (*»Tempo 100 on the Autobahn«*), the government does not appear to be in a position to overrule the interests of the automobile industry and the automobile clubs. Even the proven evidence of *Waldsterben* and the pressure from neighbouring countries who (like France and England) wanted to trade »speed limits« for »catalytic converters« (as proposed by the German government) so far have not contributed to bringing the speed limit through the national parliament.

The situation at the local level is quite different. Nearly all German cities and villages have a speed limit (*»Tempo 30«*) in parts of their jurisdiction. Mention also must be made of the renaissance of the bicycle which has regained many of its former functions. Parts of Germany now resemble Holland, i. e., the typically Dutch bicycle scenery.

All in all, noise is still one of the public evils. Every second German household feels affected by noise pollution. There are estimates that some 8 million people suffer from noise related illnesses, such as cardiac and circulatory illnesses, nervousness and insomnia. As with other environmental policy sectors, anti noise policy in Germany was predominantly of the react-and-cure type. Highways were increasingly furnished with various, sometimes rather unsightly acoustical barriers, while the sources of the problem (noisy vehicles; high speed) were not dealt with. Again, passive noise abatement measures proved fairly costly and not very effective. Active noise abatement, on the other hand, did not get the necessary priority; maybe because it would be necessary to integrate technical innovations (»low noise emission techniques«) with social innovations (»quiet, leisurely society«). However, urban and regional planning in Germany has become very sensitive towards environmental questions; »ecological urban restructuring« (*Ökologischer Stadtumbau*) has become more than just a concept.

2.4 Waste Materials

The West German waste management programme of 1975 proposed three differentiated goals: *waste treatment; waste recycling; waste avoidance*. The respective achievements in these fields of environmental policy activity differ to a large extent.

Regarding *waste treatment*:

- in 1970 there were some 50,000 local »wild« refuse dumps (landfills), while in 1990 there were only 500 »orderly« central refuse dumps left;
- for toxic wastes (so-called *Sonderabfall*) the number of special treatment plants and refuse dumps has increased, from only 10 at the beginning of the 1970s to approximately 100 since the mid 1980s;
- in the same period the number of municipal incineration plants doubled from 24 to 48.

These developments in »orderly« waste treatment had to be implemented against strong economic interests but were facilitated via the »polluter pays principle« by collecting charges according to the amount and/or toxicity of the waste produced.

With regard to *waste recycling* some spectacular achievements were reached, too:

- following some good promotion ideas of experts in the field, glass recycling became a major social undertaking with a recycling rate now reaching over 50% of the glass container sales;
- regarding tin plate packings in household waste, the volume of recycled material increased threefold between 1970 and the late 1980s;
- also the percentage of used oil collected and refined increased quite remarkably; car owners are strictly forbidden to change used oil privately, this can only be done at a garage;
- the percentage of batteries recycled is about 90% of the total production;
- recycling plastics has increased from a mere 150,000 tons in 1970 to about 450,000 tons, yet this part of the recycling problem will remain to be a most crucial one.

These developments were, to a large extent, supported by the market forces by putting higher charges on household and toxic waste, but also and quite remarkably by the rising environmental awareness of the population that was successfully transformed into positive saving actions. A new industry developed for processing and recycling waste, and within existing plants recycling gained ground as an environmentally necessary and in many cases economically profitable undertaking. This is not yet the case with the automobile industry, where recycling of cars has not developed beyond pilot plant status.

The other side of the coin of technocratic solutions to environmental problems, however, also became apparent: Processing and recycling of waste in many cases leads to the accumulation of toxic substances which in the end must be specifically treated, thus increasing costs and producing a new version of the old problem.

The diffusion of dioxine from municipal incineration plants has been a spectacular issue of debate in German, as has the issue of draining of toxic waste water and gases from landfills. A third, locally very serious issue resulted from the disposal of dredged sludge on agricultural land from highly polluted river and harbour sediments.

All of those issues affected the discussion on the third main goal of waste management, i. e., *avoiding waste generation* from the outset. Contrary to original expectations, the volume of waste has further increased:

- household waste increased from 16 million tons in 1970 to more than 34 million tons in 1990;
- toxic waste (*Sonderabfall*) increased from about 2 million tons to over 4.5 million tons.

Regionally and locally this avalanche of waste has reached large dimensions; the word »waste emergency« (*Müllnotstand*) was coined. Cities like Berlin, Hamburg and Frankfurt can neither bury nor burn all the waste they produce and are heavily dependent on the neighbouring regions for that purpose. A »waste tourism« developed leading to sometimes extraordinary patterns of conflicts. No wonder then that the packaging industry came under strong pressure, because of their either unnecessary or all too voluminous packages. A national package tax has been proposed, but has not yet been introduced. Local governments, however, recently started, within the range of their competence, to ban certain packaging methods.

Arrangements on decreasing the use of one-way containers (cans and bottles) and increasing the share of returnable containers through deposit-and-refund systems and other measures were tested but are still far from reachng their full potential.

Again, the developments in waste management somehow show the limits of sectoral approaches to pollution problems. As long as *ex post* treatment of the by-products of the production and consumption processes prevails, and integrated low emission technologies have not reached full scale application, or deposit-refund systems have not been effectively implemented, an increasing volume of waste will be generated, or a hazardous quality of waste will emerge.

Furthermore, new cross-media problems lie ahead. For instance, the successful introduction of desulphurization devices in energy plants, obligatory now, leads to high volumes of gypsum, approximately twice the overall demand for that material in the economy. Additional contaminated or noxious substances are produced as by-products of anti-air pollution technology which need special controlling and storing arrangements. Desulphurization and denitrification devices for energy plants are also rather space-intensive and therefore cannot be applied in all the existing plants in high density urban areas.

Thus, if waste recycling and waste avoidance do not make further headway, additional space for storing new kinds of waste will be needed, making the waste issue probably an even more serious one in the future, especially of course for small and densely populated countries and regions.

Finally, the waste problem does not end when landfill stations are closed down. For West Germany, out of a registered 30,000 old refuse dumps some 1,000 to 2,000 are classified as »problematic«. In everyday language, they are called »yesterday's waste« (*Altlasten*), a synonym for inter-generational effects and conflicts. The wasteful production and consumption processes of the past thus prove to be accumulated environmental costs for which the present generation has to pay the bill. In order not to increase that bill further for the future generations, avoiding unnecessary waste seems to be an urgent task, in Germany and probably in all other industrial countries.

3. The Decision-Making Process

3.1 Main Elements of Policy Style

The decision-making process in German environmental policy is complicated by two factors: First, it is difficult to exactly identify the policy style in a proper sense because of structural and institutional reasons. Secondly, the existence of a strong mass movement of politically sensitive environmentalists, pressure groups and an active »Green« party (*environmentalism*) contrasts with the more traditional role of governments in environmental policy in many other countries. A specific German policy style can be detected in that a differentiated and diversified policy process exists, complex and varying both within and between the various environmental media described above.

Beginning in the early 1970s, there was an intention to shift policy from a predominantly reactive style to a more anticipatory one; and as far as the relationship between government and the other actors is concerned, the interdependence of state and society, and the importance of consensus in policy has always been stressed. However, when looking back on some 20 years of environmental policy in the FRG, such a generalization may not hold true; and a policy style may emerge that connects both consensus-oriented and authority-oriented categories.

The policy style in environmental policy can be differentiated as follows:

- *Status preservation*, involving a policy of routine, of collaboration between insider groups (experts) and government.
- *Imposition*, as inflicting the will of public authorities, perceiving themselves to be better informed than the general public.
- *Regulation*, as traditional bureaucratic administration and implementation.
- *Concertation*, characterized by the pursuit of participation and consensus through a policy of negotiation and social discourse.

These individual elements of policy style may from case to case, and from time to time, dominate strongly or rather mix. Some of these elements have also been subject to change, and perhaps none has been applied strictly and satisfactorily to those promoting them. Still, it makes sense to think in such terms when trying to understand environmental policy.

It seems to me that the most vivid politicization of environmental issues in the FRG has occurred around the »imposition« style, as was accentuated with siting of nuclear power plants (e. g., Brockdorf), and construction of airfields (e. g., Startbahn West), highways (e. g., Rothaar-Autobahn), and waterways (e. g., Main-Donau-Kanal). In many documents, declarations and discussions the preference for the »concertation« style has been emphasized, however. In practice, the relation between intra-governmental conflict, the fragmented organization of environmental interests, and the failure or deficits to accommodate the latter in the institutional arrangements of policy, have largely contributed to the polarization of the issue, and also to the change in the parliamentary system; the »Greens« emerged - an institutionalized threat to the continuation of the dominant policy style.

This process, most certainly, is in part an outcome of the vigorous legislative push in the early 1970s, that is the very success with which policy formulation was pursued, allowing the later implementation shortfalls to appear much more clearly. In this way, one might try to explain the implementation shortfalls of German environmental policy by referring to the general »gap theory«, i. e., that expectations were too high and efforts not strong enough, that goals were rightly set but measures not enacted and instruments not used. But this theory may, again, not suffice to explain reality, in view of so much evidence that expectations were *not* high enough and goals were set incorrectly or *not* in time.

3.2 Short History of Environmental Policy

In the Federal Republic of Germany - as elsewhere - the new wave of environmental policy started around 1970, especially promoted by the preparations for the UN Conference on the Environment in Stockholm (1972). The coalition government of Social Democrats (SPD) and Free Democrats (FDP) had come to power in 1969 and quickly adopted the environmental issue as part of its reformist policy package. The preferred policy approach at that time was that of a »grand coalition«, a seeming consensus of interests, as was stated by the then Secretary of State in charge of environmental policy: »We have to solve existing environmental problems with industry, not without them or against them.«

The government swung forcefully into action, generating progressive legislation and establishing expert committees to support the policy effort. The first federal environmental programme of 1971 was strongly based on the »polluter pays principle«, modified however from the very beginning by the criterion of »economic feasibility« (*wirtschaftliche Vertretbarkeit*). This means that, in general, the individual polluter is responsible for the damage he produces and must compensate for that damage, while in the particular case the argument may prevail that this compensation is not economically feasible. The programme of 1971 had two parts, one containing guidelines and measures for policy advice, research and promotion of environmental awareness of the general public, and the other comprising the actual action programme of technical environmental protection measures.

In the period up to 1974 laws were passed against lead in petrol, aircraft noise, and DDT, and the Federal Immission Act came into effect. Organizational changes to integrate environmental interests into policy discussion also started in the early 1970s.

In 1973, the Council of Advisors on Environmental Issues (*Rat von Sachverständigen für Umweltfragen*) presented its first special report (»The Automobile and the Environment«), followed in 1974 by the first general report on »The State of the Environment«. In 1974, the Federal Environmental Agency (*Umweltbundesamt*) was established (and enlarged in 1990 to incorporate Eastern Germany in its monitoring and assessment activities).

The following year, 1975, has been identified as the first shock to the new policy, when economic interests regained priority over environmental protection. A simultaneous effort to save energy (oil price increase) and to protect the environment was at that time not yet seen as mutually reinforcing.

Thus until around the mid 1970s environmental policy in the FRG proceeded in the »concertation« style, when the government's intention to give participatory status to environmentalists was still manifest in day-to-day politics and in the review procedures of draft legislation. From then on, however, the mood changed in the wake of the oil price hike, and the transfer of chancellorship from Willy Brandt, the reformist, to Helmut Schmidt, the pragmatist. Also the »limits to growth« debate scared industry away from concerted action (*konzertierte Aktion*) in environmental policy. And although the subsequent laws on nature protection and waste water charges (1976) were conceptually good, they lacked the force necessary for real change. Talk on the »implementation shortfall« (*Vollzugsdefizit*) began.

The progressive approach to research and information was not followed through either. Simultaneously with this change of the policy style, the nuclear energy programme was further expanded. This »razor's edge« of industrial society became the target of both the environmental protection groups and of the politicized »generation of 1968«. And both began to identify the ecological critique of industrial society - somehow comparable to the socialist critique of capitalist society in the last century.

The early achievements in official policy formulation had in a way legitimized environmental concerns in the public eye. Political as well as legal successes of environmental interests encouraged environmentalists to further action. But the increasingly conservative path taken by the government in pursuance of quantitative economic growth led many to leave the established consensus and to form the Green party (*Die Grünen*) in 1979. This party had its main support in thousands of citizens' initiatives (*Bürgerinitiativen*), which had in turn been fostered by the so-called »social liberals« (especially in the SPD and FDP), as well as by academic activist groups.

One may thus interpret the *extra*-parliamentary politicization of environmental policy in the FRG as the product of two main factors. First, the guiding principles of cooperation and prevention (*Kooperations- und Vorsorgeprinzip*) seem to be compatible only when the political authority is really willing and able to apply them in the form of a »regulatory« policy. Fragmentation at the government level and change in governmental policy priorities resulted in a lack of such authority in the mid-1970s. Secondly, environmental awareness of the general public was rapidly growing, but due to the lack of institutionalized access for pressure groups, a large part of the environmental movement found itself politically »out in the cold« again. This left many of the environmental interests outside the arena of government, with little or no incentive at all to cooperate. The spectacular emergence of the Greens then put the environmental issue back on the political agenda, this time at the top.

Much of what has been said above implies that management of the environmental issue in the FRG had become more complicated. The established parties were not only challenged by environmental ideas and political demands but also by a new competing party. At the same time, the very emergence of an environmental party was an indication that the political system was able to adapt to the preferences of the population. Dissatisfaction with the old parties and their policies had given rise to a new party to represent those interests whose voice had not been heard or was not taken seriously. When this was fully understood by the old parties in the 1980s, they tried to integrate the environmental issue into their programmes and activities, thus attempting to become a bit green themselves.

One might qualify the above assessment in the sense that the environmental issue in Germany has been a challenge to the standard policy style. Concertation worked well during the period of the »economic miracle«, but confrontation appeared when, because of serious environmental damages or threats, the logic of economic growth and the associated institutional procedures were heavily criticized. By directly challenging the policy style, the environmentalists and especially the Greens signalled that »business as usual« in policy-making was unacceptable. The very need for the established political parties to balance their existing (economic) interests against the environmental interests may have forced the environmentalists into the electoral arena. And the ability and flexibility of the established parties to recognize these environmental interests will decide how long »environmentalism« will remain as a political party, or whether it will retreat to the position of a general fundamental movement (or undercurrent) beyond and across traditional party lines.

Despite the general public's high level of environmental awareness, it is still difficult for environmentalists to »win« in a conflict between economic and environmental interests because of the strength of the production-oriented trade unions, and parts of the social democratic party (SPD), and the strong business interests within the conservative parties (CDU/CSU) and the liberal party (FDP). Also, the electoral successes of the Greens at the local, state and federal level have produced countermoves by the old parties in order to reattract the environmentalist vote. It therefore seems as if the »greening« of the old parties has begun.

3.3 Overview on Institutional Aspects of Environmental Policy and Integration of Environmentalists

In the first fifteen years, general responsibility for media-specific environmental policy (emissions and depositions) at the national level in the Federal Republic of Germany rested with the Ministry of the Interior (BMI); there was no specific ministry for the environment. Responsibility for nature and soil protection rested with the Ministry of Agriculture and Forestry (BML). Research on environmental questions and policy draft formulation was performed by the Federal Environmental Agency (*Umweltbundesamt*), then a subordinate agency of the BMI. Major changes in this institutional set up came about quickly after the Chernobyl accident in 1986. Within a few weeks, the Federal Ministry for the Environment (*Bundesministerium für Umwelt, Naturschutz und Reaktorsicherheit*) was established, comprising responsibilities for the environment, nature protection and nuclear reactor safety, with changes also at the level of subordinate administration (*Bundesanstalten*, etc.). At the federal states level (*Länder*) environmental ministries had been or were established, and most local governments (*Städte, Gemeinden*) now have an environmental department or office.

Regarding environmental policy formulation and implementation, the German case is rather complex and nearly incommunicable. The jurisdiction for air and water pollution policies, protection of species, waste and noise pollution lies at the national level; however, the states (*Länder*) are responsible for the implementation of the federal laws. Because of this division of labour, vertical coordination is crucial and disputes may occur, especially when the views of the national government (minister) diverge from that of the *Länder*, which is quite often the case. This fragmentation of government responsibility for environmental policy in a federal system and the relatively accentuated elements of »regulatory« and »imposition« policy styles has, particularly in recent years, made cooperation between the various policy levels difficult.

The rather complicated institutional arrangement of environmental policy in the FRG is complemented by the role of the courts (*Gerichte*), which, on different occasions but not always in a systematic manner, have allowed environmental interests veto points at the level of implementation. Resort to the courts thus must be understood as an important aspect of the institutional set-up of environmental policy in Germany. Where negotiations fail to secure consensus, an attempt will likely be made to close down the case by seeking an authoritative court decision. In this way, court battles sometimes substitute for political decision-making.

This »policy through the courts« has been especially pronounced in such cases as nuclear energy plant siting, highway planning, and also in the case of furnishing energy plants with cleaning devices. There is the »Buschhaus case«, a newly constructed coal firing plant not using available emission cleaning technology, which was first decided politically, then brought to the courts, but finally was overruled by additional government ordinances.

Regarding the integration of environmentalism into the political decision-making process in Germany mention must be made of at least three national organizations of environmental interests, all of which work quite differently: the Federation of Nature and Environment Protection (*Bund für Umwelt und Naturschutz Deutschland - BUND*), the German Nature Protection Group (*Deutscher Naturschutzring - DNR*), and the Federation of Citizens' Initiatives for the Environment (*Bundesverband Bürgerinitiativen Umweltschutz - BBU*). All of these are umbrella organizations, and all are of post-war origin. In addition, there are older environmental organizations, some of which are quite influential, like the German Association for Birds Protection (*Deutscher Bund für Vogelschutz - DBV*) which has a history of more than 90 years.

The BUND was founded in 1970 and is closest to a traditional type of national environmental pressure group. It has direct inter-organizational links with its groups at the local level, such that its members can focus on local environmental problems but also can be expected to endorse and support negotiations of the organization with the federal government. At the beginning of the 1990s the BUND is, no doubt, the strongest environmental organization in Germany, with more than 150.000 members, and regional and local working groups all over the country.

The DNR was founded as a result of a ministerial initiative in 1950. It is an organization which encompasses both nature protection interests and the hunting, shooting and fishing associations. Its very structure in a way precludes a strong pursuit of aggressive environmental policy goals, and its credentials for activist environmentalists therefore are comparatively weak.

The BBU can closely be identified with direct action initiatives and party politics. It has been quite important in promoting the environmental issue and in pushing governments to take action in the 1970s. It addressed new environmental issues, namely nuclear power and nuclear armament, but also air pollution and *Waldsterben*. The BBU has contact with its member associations via dissemination of information, but cannot represent their individual interests, or sanction member groups who do not agree with the bargains struck with governments.

Finally, mention must be made of the Working Group on Environmental Issues (*Arbeitsgemeinschaft für Umweltfragen - AGU*) which is composed of various interest groups relevant to environmental policy, including the government, administration, industry, and scientific community, and has close access to policy discussions on the national level.

4. Conclusions and Perspectives

In drawing some conclusions from the brief review of environmental policy in the Federal Republic of Germany, the most important features of the decision-making process and the factors influencing the political management of the environmental issue shall be summarized.

Generally speaking, the environmental issue was first addressed in the early 1970s on governmental initiative in an activist way, but at the same time in a consensus-oriented policy style. Programme formulation, improved monitoring and reporting, and growing environmental information quickly sensitized the public for environmental quality. Implementation of environmental policy, however, fell increasingly short of the targets set, partly because of institutional reasons and partly because of a change in policy priority. Reformist environmental policy lost ground to pragmatic industrialism and harmony between environmental and economic policy was no longer actively pursued. As a result, environmentalism gained ground, both in institutionalized organizations and as a broad social and political movement. Due to rather inflexible responses by the traditional political parties, large parts of this environmentalism turned to the ballot-box and supported the alternative Green party in an attempt to challenge dominant value positions in the parliamentary arena.

From recent experience, however, the presumption of a legitimatory crisis surrounding the emergence of the Greens seems questionable, not only because of a certain plurality of policy styles in the FRG, but also because the traditional parties in the end jumped on the environmental bandwagon and started to (re-)integrate the environmental issue into their own policy programmes.

Environmental groups and the mass media have highly influenced what the actual issues are to be, and participated in or criticized the policy process in a number of ways and at all levels of the political system. Furthermore, the courts also play an important role in the decision-making process in Germany; »policy through the courts« having been especially significant in several highly debated cases of infrastructural (energy and transport) projects.

This complexity of the German environmental policy process and the special institutional conditions under which policy is formulated and implemented, at first produced a consensus-seeking, »concertation style« of environmental policy. But after the end of the era of rapid economic growth in the late 1970s, the approach to dealing with dissent and environmental protest was decidedly that of an »imposition style«, which in turn served to mobilize the Greens, and only later on in the 1980s changed again into a more consensus-oriented policy style.

Environmental policy in Germany predominantly employs regulatory instruments, the legal basis of environmental protection being rather strict and strong. A new environmental liability law was enacted in 1991. Environmental Impact Assessment has become a prescribed planning procedure. However, the debate on more flexible arrangements, like environmental *taxes*, *charges* and *certificates* is on, although so far without a major breakthrough.

Regarding the pretentious claim for an integrative, holistic approach to environmental policy, a number of questions must be noted. Programmes have always promoted the idea of anticipating or preventing environmental problems (*Vorsorgeprinzip*). The practice of environmental policy, however, in the past was predominantly a reactive and curative one; it tried to solve problems after they had occurred (*Nachsorgeprinzip*).

Furthermore, environmental policy was and still is very much sectorized; not only the instruments used, but also the legal basis of action and the government institutions are very much dominated by a sectoral approach. This all too often leads to »problem shifting«, i. e., to undesirable cross-media, inter-regional, and inter-generational effects.

Despite all partial successes of German environmental policy it seems, therefore, that not only institutional streamlining but also new approaches are needed. Notwithstanding further discussions, the direction of such policy change is clear: It should be towards a consensus-seeking, participatory policy style, towards co-operation between the central and the local level, and should turn away from the react-and-cure strategy towards an anticipate-and-prevent strategy. Economic instruments, like taxes, charges and certificates should gain ground over command and control procedures. In the future, the environmental policy style and strategy may thus change again and may better recognize the fact that polarized, centralized and sectoral approaches are costly, economically and ecologically speaking, and that holistic, decentralized and integrated approaches towards environmental policy are intellectually more demanding, and at the same time more rewarding.

Addendum

On the 3rd of October, 1990 the former Federal Republic of Germany (West Germany) and the former Democratic Republic of Germany (East Germany) were politically united and now form the new Federal Republic of Germany. Upon unification of the two Germanys it was decided that the environmental laws, standards and procedures of the former West Germany should be applicable to East Germany (so called *environmental union*). It was clear that there would and must be exemptions from this general political guideline. Implementation may, for a while, fall short of what is formulated legally and politically, not only because of economic but also because of administrative reasons. Less than a year after the unification of two totally different systems it is, of course, too early to give any serious assessment of the outcome of the new environmental policy in East Germany, although environmental monitoring and reporting are gradually improving. What is possible, is a general judgement on the main environmental problems and the obvious priorities for policy formulation and implementation.

Taking again a sectoral approach, there are major differences to be found between East and West Germany, both positive and negative ones.

In the *air pollution* sector, the main problem in East Germany lies in the energy structure which was heavily dependent on lignite, with enormous amounts of polluting emissions. This problem, however, may be the easiest to solve, with the beneficial, relieving effects of a change in the energy structure. Connecting the electricity trunk lines of West and East will have an immediate effect; adjusting the supply structure in the East towards less polluting coal, oil and gas, and by installing modern co-generation units (*Block-Heiz-Kraft-Werke*) and renewable energy systems will in the medium term decrease the pollution load.

Resolving *water pollution* problems may be much more difficult. First of all, installing waste water treatment plants where none existed before, will take quite some time. Recycling water in industry may not get the highest priority as long as companies struggle for economic survival. Along the major river Elbe, however, the special interest of down-stream cities, like Hamburg, will give rise to special support programmes for cities up-stream, like Dresden, and so speed up necessary waste water treatment investments.

Regarding *noise pollution*, the situation in East Germany seems to go worse in the first place. With the rapidly increasing stock of private cars and of transport activities, the sources of pollution will multiply. Adjustment measures, on the other hand, either will take time or will not get a high priority in the cities and communities responsible for implementing such measures.

However, the worst case is, and will most likely continue to be, *soil pollution*. Knowledge and information on such pollution has been increasing rapidly and shows disastrous results. Large parts of the East German land is heavily polluted, not only by chemical wastes but also by polluting activities of the military. Nobody knows yet how long it will take to clean up the mess, or whether it will be possible at all. Estimations on the clean-up costs for the next ten years are as high as 200 billion DM. If a respective clean-up programme would be launched, this of course would stimulate the burgeoning German industry in environmental protection technology, create additional jobs, and provide a possible growth point for Germany in the wider European market. For the time being, however, potential investors from West Germany and abroad are particularly disturbed by these

»yesterday's burdens« (*Altlasten*); relief through new technology may not come about if these uncertainties are not resolved. The »polluter-pays-principle« cannot be executed where the former polluters are not known or do not exist any longer in an economic and legal sense. The »tax-payer-principle« therefore will have to be applied, even if this is in contradiction to the general philosophy of environmental policy.

Regarding *waste recycling*, on the other hand, the former East Germany could have become a model for West Germany. With the so-called *SERO-system* large parts of the material cycle were covered, reaching high recycling rates by defining wastes as »secondary raw materials«. Unfortunately, as with many other social activities, this system was abandoned after the absorptive kind of Western dominated unification. Also, with the opening of the borders the volume of waste has drastically increased and the contents and quality of this waste has changed, making it more difficult to handle the problem. This will continue to be so as long as new systems of waste management have not been installed or do not yet function.

All in all, one may say that unification has lead to new, and additional environmental problems in the new Germany for which effective institutional and instrumental solutions still have to be found. Integrating two different economic systems is one difficult task, integrating two different environmental systems quite another.

Table 1: Environmental Protection Investments, Manufacturing Sector, Federal Republic of Germany

Year	Total Investments		Waste Disposal		Water Pollution Control		Noise Abatement		Air Pollution Control	
	Current Prices	1980 Prices	Current Prices	1980 Prices	Current Prices	1980 Prices	Current Prices	1980 Prices	Current Prices	1980 Prices
					in Millions of DM					
1975	2,480	3,090	170	210	900	1,110	200	240	1,210	1,530
1976	2,390	2,830	200	230	820	960	220	260	1,150	1,380
1977	2,250	2,560	200	230	740	850	210	230	1,100	1,250
1978	2,150	2,370	170	180	680	750	200	220	1,100	1,220
1979	2,080	2,190	160	160	760	800	200	210	960	1,020
1980	2,650	2,650	210	210	910	910	240	240	1,290	1,290
1981	2,940	2,810	250	240	950	910	210	200	1,530	1,460
1982	3,560	3,250	390	360	1,130	1,030	230	210	1,810	1,650
1983	3,690	3,270	290	260	1,100	990	230	200	2,070	1,820
1984	3,500	3,100	270	240	1,040	920	230	190	1,960	1,750
1985	5,620	4,940	330	280	1,060	910	260	220	3,970	3,530
1986*	7,339		426		1,158		248		5,507	
					Average Annual Change in %					
1975/84	+3.9	-0.0	+5.3	+1.5	+1.6	-2.1	+1.6	-2.6	+5.5	+1.5
1975/79	-4.3	-8.2	-1.5	-6.6	-4.1	-7.9	0.0	-3.3	-5.6	-9.6
1979/84	+11.0	+7.2	+11.0	+8.4	+6.5	+2.8	+2.8	-2.0	+15.3	+11.4

* = preliminary

Source: IIES research project. Data for 1986 from Statistical Yearbook 1989, p. 587.

Table 2: Environmental Protection Investments, Government Sector, Federal Republic of Germany

Year	Total Investments		Waste Disposal		Water Pollution Control		Noise Abatement		Air Pollution Control	
	Current Prices	1980 Prices	Current Prices	1980 Prices	Current Prices	1980 Prices	Current Prices	1980 Prices	Current Prices	1980 Prices
					in Millions of DM					
1975	4,740	6,410	300	390	4,430	6,010	0	0	10	10
1976	5,270	6,950	290	360	4,970	6,580	0	0	10	10
1977	4,860	6,190	310	370	4,530	5,800	10	10	10	10
1978	5,860	7,020	330	370	5,450	6,560	70	80	10	10
1979	6,940	7,640	390	420	6,440	7,100	110	120	0	0
1980	8,060	8,060	470	470	7,430	7,430	150	150	10	10
1981	7,390	7,150	520	500	6,700	6,480	160	160	10	10
1982	6,500	6,300	570	540	5,740	5,580	180	170	10	10
1983	6,030	5,810	510	470	5,330	5,160	170	170	20	10
1984	5,900	5,590	450	410	5,300	5,050	130	120	20	10
1985	6,750	6,350	550	490	5,950	5,630	230	210	20	20
					Average Annual Change in %					
1975/84	+2.5	-1.5	+4.6	+0.6	+2.0	-1.9	*	*	*	*
1975/80	+11.2	+4.7	+9.4	+3.8	+10.9	+4.3	*	*	*	*
1980/84	-7.5	-8.7	-1.1	-3.4	-8.1	-9.2	-3.5	-5.4	*	*

* = Statement incomplete
Source: IIES research project.

Table 3: Total Expenditures for Environmental Protection, Federal Republic of Germany

Year	Industry		Government		Industry and Government	
	Current Prices	1980 Prices	Current Prices	1980 Prices	Current Prices	1980 Prices
	In Millions of DM					
1975	5,680	7,140	7,740	10,200	13,420	17,340
1976	6,000	7,190	8,850	10,940	14,550	18,130
1977	6,180	7,180	8,410	10,340	14,590	17,520
1978	6,390	7,200	9,780	11,470	16,170	18,670
1979	6,740	7,190	11,350	12,380	18,090	19,570
1980	7,810	7,810	12,750	12,750	20,560	20,560
1981	8,860	8,160	12,510	11,940	21,370	20,100
1982	10,110	8,820	11,890	11,130	22,000	19,950
1983	10,620	9,070	11,640	10,720	22,260	19,800
1984	10,890	9,090	11,830	10,630	22,720	19,750
1985	13,550	11,170	13,180	11,690	26,730	22,860
1986	15,570	13,030	14,520	12,860	30,090	25,890
1987*	16,940	14,160	15,310	13,280	32,250	27,440
	Average Annual Change in %					
1975/84	+7.5	+2.7	+4.8	+0.5	+6.0	+1.4
1975/80	+6.6	+1.8	+10.5	+4.6	+8.9	+3.5
1980/84	+8.7	+3.9	-1.9	-4.4	+2.5	-1.0

* preliminary

Source: IIES research project. Data for 1986 and 1987 from Statistical Yearbook 1989, p. 586.

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