EUI WORKING PAPERS EUROPEAN POLICY UNIT

EUI Working Paper **EPU** No. 93/3

Environmental Policy in Transition:

The Need for a New Political Approach to Environmental Cleanup in the Former GDR

GÜNTHER BACHMANN

European University Institute, Florence

Please note
As from January 1990 the EUI Working Paper Series is divided into six sub-series; each sub-series is numbered individually (e.g. EUI Working Paper **LAW** No 90/1).

EUROPEAN UNIVERSITY INSTITUTE, FLORENCE

EUROPEAN POLICY UNIT

EUI Working Paper **EPU** No. 93/3

Environmental Policy in Transition:

The Need for a New Political Approach to Environmental Cleanup in the Former GDR

GÜNTHER BACHMANN

BADIA FIESOLANA, SAN DOMENICO (FI)

Printed in Italy in May 1993
European University Institute
Badia Fiesolana
I – 50016 San Domenico (FI)
Italy

The European Policy Unit

The European Policy Unit at the European University Institute was created to further three main goals. First, to continue the development of the European University Institute as a forum for critical discussion of key items on the Community agenda. Second, to enhance the documentation available to scholars of European affairs. Third, to sponsor individual research projects on topics of current interest to the European Communities. Both as in-depth background studies and as policy analyses in their own right, these projects should prove valuable to Community policy-making.

Contents

Environmental Policy in Transition:

The Need for a New Political Approach to Environmental Cleanup in the Former GDR*

*Günther Bachmann***

1. Introduction

Starting conditions for the transition from centralised to market-oriented economies differ from country to country. While the GDR cannot serve as a model for economic transition in other east European countries, it does provide some experiences *inter alia* in the field of environmental policy. It may be valuable to draw conclusions from them for similar policies elsewhere.

Although the focus of this paper is environmental policy, some conclusions about the general legal, economic, social and regulatory constraints which relate to the problems of transition, might be drawn. Environmental requirements have a decisive effect on economic development and *vice versa*.

There is a lot of debate about different economic and political possibilities upon which one might focus in order to redevelop downgraded old-industrialised sites and regions. Economic proposals often neglect environmental issues. If mentioned at all, environmental issues seem to play the role of yet another constraint in economic development. With reference to the former GDR, this paper develops

* I thank Dr. Annette Anton, Tübingen, for providing valuable help in translating parts of the text.

** Dr. Günther Bachmann, Federal Environmental Agency, Germany; Jean Monnet Fellow, European Policy Unit, European University Institute, 1992, member of the Working Group of Environmental Studies.

the argument that environmental considerations can not be dealt with in isolation. The effectiveness of standard setting will very much depend on the design of a political approach. Showing this relationship between environmental requirements and the political process, this paper describes the regulatory instruments, policy approaches, and financial instruments which the transitional environmental policy currently being implemented in East Germany employs.

2. Environmental commitment in public opinion during transition

During the time of transition there was a remarkable shift in public awareness. A public opinion poll in 1988 showed that people in the GDR ranked the environment very high. Asked to rank the issues they were unsatisfied with, they cited the environment as the first priority. The difference between the official propaganda and the true state of the environment which they experienced was one of the main driving forces behind frustration, distrust and the rapidly disappearing credibility of the old regime. In Autumn 1989, the people's demonstrations called for a fundamental change of environmental policy (Maier 1992). During the transition period, this commitment experienced a profound disappointment because it became obvious that environmental change was an issue too large to be handled within the reach of existing political and financial constraints. The disappointed commitment then turned into the desire to acquire western economic wealth first.

Generally speaking, 1989 was a time of political, economic and moral collapse in the GDR. An environmental "revelation" appeared inevitable to almost everybody. The protest movement raised the environmental question and ranked it very highly. Every day, new information on the extent of environmental damage was presented. Almost the entire media talked about an "environmental catastrophe". In public opinion the health defects, polluting substances in drinking water, lagoons of manure in the open landscape, dying forests, imported hazardous waste, leaking landfills, and stinking rivers led to an environmental shock that was just another facet of the image of a declining GDR. As a result of this, public awareness "discovered" environmental problems and every piece of information associated with the state of the environment was assumed to be bad. We now know that environmental conditions were not as bad as it was thought.

Explanations for the devastating results of the "socialist environmental policy" were sought for in the newly available documents

of the Central Committee and at the same time the interim government and the Round Table prompted something approaching "environmental euphoria". The Round Table was installed as a democratic institution that enabled all political groups to participate in policy making. I define the term "environmental euphoria" as being the situation when almost everybody seems to be convinced that there is a possibility to fundamentally renew environmental policy and political life. Political thinking was about what seemed to be required and desirable and not in the first instance about feasibility, financial restrictions, and political constraints.

The Round Table developed an environmental policy: natural reserves were established in the former state-owned hunting grounds, at the borders, and in military areas and it was decided to close some heavily polluting industrial facilities. The actions which were immediately taken expressed an environmental activism which precipitated the idea of an "ecological and social market economy". This formula shows the high priority given to environmental protection although we might assume that no one ever imagined all the various consequences associated with this political option. All the same, it shows that a high status was given to ecology by public opinion. In Autumn 1989, all opposition factions in the GDR consented to the notion of an ecological and market economy as a comprehensive formula, and an environmental reorganisation was announced. In March 1990, however, it hardly played any role at all in the election campaign for the *Volkskammer* (the People's Parliament). In the process of negotiations for the *Staatsvertrag*, the Treaty between the FRG and the GDR, environmental protection was downgraded to departmental politics. This Treaty established economic, monetary and social union between the two States. The "*Umweltunion*" (environmental union) only emerged as one of the follow-up "unions" (like the sport union and the postal union), the importance of which is clearly secondary to the economic, the monetary and the social union.

It would be out of place, however, to complain about this. The order reflects in a realistic fashion the role that environmental policy plays in the Federal Republic of Germany. Bearing this in mind, one has to note with appreciation, that the environmental union was added to the *Staatsvertrag*. Initially, this had not been planned.

Following the *Volkskammer* elections in March 1990, there was considerably less debate about environmental policy. Immediately prior to this, all the political parties had assured that the market economy was going to be social and most of all ecological. But nobody felt obliged to explain in detail what an ecological market economy was exactly

supposed to be. Thus the environmental topic faded. Another reason for this process of fading was the ongoing clearing process of the data on the state of the environment. Clearing of environmental data was necessary because it turned out that not all the data presented were reliable and valid. Checking the reliability of data means to check which technical laboratory methods have been used (i.e. the type of sampling and laboratory practice as to whether or not a certain figure on, say, cadmium in soil and plants presents a real danger) and to check whether "old" GDR data were only paperwork or hard facts. This clearing was, and still is, an issue that experts and administrations are concerned with. As a result of this, public awareness was confronted with the fact that there is no simple solution to the problems and that there is no certainty about the type and extend of remedial measures to be undertaken. In a sense this discouraged public awareness.

When looking back, four elements regarding the choice of environmental policy can be distinguished which played a major role in developments during the period from the end of 1989 until Spring 1990 (Hübler 1991):

A quick installation of West German law. This option was demanded in particular by large parts of the administration of the GDR and by West German politicians and followed a general political trend. If one accepted this trend or considered it to be unavoidable for greater reasons (the rationality of German unification) this option had very pragmatic features. But to be a truly pragmatic option it lacked the consideration of the problems occurring when actually translating environmental law into action (enforcement, setting up of regulating agencies etc.).

An independent path between absolutist (undemocratic and inefficient) socialism and a capitalist system. An independent environmental policy was largely demanded by citizens groups and political supporters of radical change. They counted on existing positive aspects of GDR environmental policy (parts of the transport policy which supported freight transport by railway, the waste minimisation strategy through a widely effective waste collecting and recycling system, and the nature conservation policy in small parts of the country). In their view, these approaches should be saved within a new framework of social development. The message was that there is a democratic way to negotiate the best available approach and that it is neither democratic nor feasible to present an already fully worked out approach to cope with environmental challenges.

Protection of the environment via the market economy. As a political formula this option was of great importance during the pre-election campaign period to the *Bundestag* in the Federal Republic of Germany in 1989. The key issue was to impose environmental taxes. Reunification policy carefully ousted this option from the political agenda. In the GDR it did not play an important role.

Improvement of the previous ecological policy. A large number of environmental scientists in the GDR backed the reform and improvement of existing policy. They referred to the comprehensive apparatus of environmental law in the GDR, that indeed was well accepted internationally. According to their opinion it was now necessary to make good use of this apparatus by equipping it with better personnel and financial means and by abolishing the many special regulations. Especially referred to was the ecological impact assessment. Thus, it was their hope, the regulations and experiences that showed its value would be introduced into unified environmental law.

These four options and the underlying value judgements mirror more or less exactly the social situation of the supporters of each policy. In terms of their theoretical and practical background, the options are not at all comparable. Some relied on existing and workable instruments and anticipated the emerging political trends. Others consisted of newly formed ideas. Regardless of this difference the options duplicate the "big choices" the people of the GDR had to make in early 1990. At this time the political process of unification speeded up dramatically and any political concept that persisted in promoting the separate existence of the GDR, even in a confederacy, was unacceptable. As an effect of this, no environmental concepts other than the adoption of West German environmental regulation might have been developed.

The application of any environmental strategy during the unification process had to fulfill the following criteria: (i) Can it be integrated into western environmental policy and is this possible without any further theoretical, conceptual "qualifying round"? (ii) Can it serve to find an answer to the environmental damage and public health risks which are one by one determined and made known to the public and does it offer a reliable chance to avoid further risks? The answer to this was exactly the application of West German environmental policy.

Some non-governmental environmental organisations anticipated the looming duplication of West German environmental law and issued some general warnings about its shortcomings and deficits in environmental policy. However, in the face of the political framework

this made almost no difference. Moreover, there was no alternative approach which would have been able to cope with the given political circumstances. The non-governmental environmentalists of the GDR were too weak to cope with the high-tech-style West German environmental approach. Their weakness was yet another outcome of GDR environmental policy. The eastern non-governmental organisations were strongly orientated towards only one of the main branches of environmental policy: biological nature protection (protection of species and landscape). This was partly a matter of tradition and partly due to the fact that the GDR restricted the sampling, use and interpretation of data concerning toxic substances, environmental technologies, investments etc. Thus, NGO environmentalists were forced to rely on environmental information they could gather on their own through a low/no-budget approach. This meant as a rule that data were gathered on species, landscape, bio-monitoring, but not on emissions, risks posed by chemicals, waste water discharges etc. However, this form of activism in fact offered no basis to successfully compete with both the West German policy and the West German non-governmental organisations. This weak lobby was another reason why (good) original GDR approaches to environmental solutions (recycling, freight transport for instance) could not continue to exist.

3. State of the environment in the former GDR

3.1 Introduction: the conception of risk

In the transition period the *Modrow*-administration presented an informative report on the state of the environment to the Central Round Table (Informationen 1990). Prior to the *Volkskammer* elections in March 1991 it was to be followed by another presentation on environmental policy, which was also adopted as fundamental material in the German-German negotiations about the protection of the environment (Minister 1990). It is very commendably compiled material, which can be considered as being generally correct, in spite of a few shortcomings which I will discuss below. On the basis of these reports and some additional sources the following presents an analysis of the state of the environment in the GDR in 1990/91. I will not present comparative figures for the "old" Federal Republic of Germany. On the one hand, this has in overview already been done in the relevant literature (cf. e.g. Hübler 1986 and 1990; Jänicke 1986; Würth 1985). A comparison, on the other hand, that actually goes into detail is

hampered by the fact that the technical layout of the GDR's data collection, monitoring systems, and laboratory capacity differs a lot from the one usually applied in the FRG. As mentioned above, data evaluation has to undergo a process of clearing data reliability and validity. In addition it can generally be doubted whether comparing empirical figures adequately classifies individual details within the different framework of economic and social constraints in the period of the East-West conflict (Klein 1992).

There is another introductory remark I want to underline. The above mentioned reports describe the state of the environment using terms such as "damage, contamination, health hazards, threats, deterioration, critical loads, vulnerability". They do not introduce any comprehensive category such as "environmental risk" to express the overall impact of loads, damages etc., or to focus on how severe the situation as a whole is. The term "environmental risk" was introduced by social sciences, not environmental sciences (Beck 1986 and 1989; Konrad 1989; Douglas/Wildavsky 1982). And this was not by chance. Following Beck (1989), the concept of risk stemmed from the politics of insurance companies in the last century, then experienced a career in the engineering profession and sociology, in order finally to become a key issue in the cultural behaviour of society.

Environmental sciences are accustomed to use the concept of risk in a more restricted sense, either of quantitative risk assessment or of the qualitative description of risk. However, in this restricted context, risk more or less only applies to cases of hazards to public health posed by toxic additives in food, cosmetics and other particular products and by landfilling activities or contaminated soil and groundwater. The understanding of risk as a comprehensive, general environmental category still presents a challenge to the environmental sciences and to environmental management. If the advantages claimed for this approach are accurate – and there is a lot to be said for it – one should be able to identify a compilation of the terms in present usage which define different environmental qualities. There are ways to compare the different risks posed by different sources (e.g. plastic vs. paper bags, incineration vs. waste burning, cancer risk posed by air pollution vs. soil pollution). But as long as a comprehensive use of the term "risk" is not feasible, one has to keep in mind that there is a gap between the methodological standard of environmental analysis and political conclusions when trying to sum up the state of the environment in using one single formula.

3.2 Facts and findings

3.2.1 State of resources and use of resources

The territory of the former GDR has very few natural resources. In this section I will highlight some facets of the situation with respect to resources and environment, by sketching some of the conditions which led to environmental degradation. Of course there is a certain basic pattern of environmental degradation which all previous industrial methods of production – no matter whether in capitalist or socialist systems – have in common. Referring to the former GDR there are, however, some factors of special importance, that should be mentioned. These factors caused a worsening of the already existing potential of risks inherent to the industrial method of production. This worsening was intensified by the undemocratic environmental policy of the GDR. Thus this policy did not succeed in counteracting the degradation which was both home-made and similarly caused by the position of the GDR within the world economy.

Dynamics of use. The economy of the GDR had far less dynamic industrial equipment when compared to the Federal Republic of Germany. This meant that industrial facilities had a longer life. Those production plants were, as a rule, already considered to have a higher contamination potential. The continued use of worn out means of production had the same effect.

Energy basis. The political and economic decision in favour of brown coal as the essential energy basis for the GDR had considerable effects on the environment, such as the remaining open-cast mining holes, the groundwater situation, the environmentally harmful carbo-chemistry.

Other types of enterprises. In rural areas agrarian policy had created some types of centralised enterprises and supply facilities which do not exist in this form in the former Federal Republic of Germany (e.g. the MTS [engine and tractor stations], the ACZ [centers of agricultural chemistry], and big live-stock plants with improper disposal of liquid manure). Hazardous substances polluted the environment due to improper application and handling. The decaying storage equipment lasts for years and leads to enormous degradation. As a further example one must mention the strange relation of waste dumping to waste reduction in industrial facilities. These were obliged to produce waste reduction technologies, means of rationalisation, and pollution control

technologies themselves. They had to do so even where they were not adequately qualified. The enterprises often preferred to get rid of industrial residues and waste by illegally dumping it on the grounds of the enterprise instead of investing money to decrease waste output.

Type of industrial innovation. Environmental policy tried to achieve success with an economical use of raw materials, that is not only success in terms of economy but also in terms of environmental policy. This strategy, called "material economy", was successfully used on some materials and products. At the same time, it also had negative consequences in those cases, in which it led to solutions which were optimised for economical aims, but which had disadvantageous effects in other respects, such as the operation of machines, loss of operation life and emissions. The so-called "material economy" became an essential feature of the environmental policy of the GDR. In spite of the success with some household waste materials (like glass, scrap, batteries and paper) materials economy caused secondary environmental degradation if the quality of products was worsened by economising or when it required a lot of maintenance. Nevertheless, the "material economy" was a highly effective waste minimisation programme and the problem was not the programme itself but the missing link to an innovative industrial policy because of other reasons.

Mining. Special burdens arise from mining (brown coal, potassium, uranium). Let me particularly mention the waste dumps in open-cast mining holes, mountain subsidence, damage to the water system, unsecured slagheaps filled with debris from mines, and diffuse spreading of radioactive material in the Wismut area.

Agriculture. Intensive agriculture, especially centralised stock production, the size of the fields, the use of bogs, and the ways in which machines were used, led to considerable, partly irreversible damage to soil and landscape (erosion, compression, compaction, decay and loss of humus, deterioration of habitats).

Indiscriminate waste policy. Political instructions to economise transport capacity and fuel, as well as a lack of governmental control over the waste disposal, led to a distribution of household and industrial waste all over the landscape in a multitude of wild disposal places. Waste generators found it cost saving to dispose of the waste in that way instead of hauling it over long distances to some regular landfills. The

few regular disposal sites met modern standards only in part and are therefore also dangerous burdens.

Enforcement of environmental laws. While carrying out the environmental protection of the GDR, exceptions to regulations and the non-observance of rules were regularly tolerated, in spite of a fairly modern legal basis.

3.2.2 State of the environment as described by 1991

Air pollution. With its per capita consumption of energy the GDR was third in the world. Its consumption of energy was 25% higher than in the Federal Republic of Germany. 83% of electro-energy was produced from brown coal. Since 1980 the emission of sulphur has increased by 20% due to the increased use of raw brown coal. The emission of sulphur dioxide of 48 t/km^2 (1988) was the highest in Europe. The emission of 2.2 million T/a has led to a pollution of an average of 0.14 t per capita or 20 t/km^2 (1988) while the immission density varies very much (in t/km^2): Berlin 74, Halle 54, Leipzig 48, Rostock 5. There existed technical solutions in order to decrease the dust emission in the GDR. For many years only 20-30% of the investment plans demanded by the Ministry of the Environment were achieved.

Per year about 700 kt nitrogen monoxide were emitted, 50% of it by burning fossil fuels. The emissions from motor vehicle traffic were reduced in the last few years by switching over to rail transport. As a further mass pollutant the hydrocarbons have to be listed, which are known at the moment to have an emission of about 135,000 t/a.

In the industrial areas of chemical industry, the high emissions of organic compounds with carcinogenic effects (5,700 t/a) are especially important. These include vinyl chloride, butadiene, ethylene oxide, propylene oxide and benzene. On pollutants such as heavy metals, benzo-a-pyrene, PCB, lindane, PAHs, the existing reports do not give any systematic information. Other sources which have in the meantime become available describe contamination of sub-surface groundwater and river sediments by persistent pesticides such as lindane etc. (Terytze/Goschin 1991).

The available immission measurements for blackspot regions show an improvement in 1991 of up to 30% compared to the year before (not NOx, because the total emission could not be determined due to motor traffic), nevertheless the limits for sulphur dioxide and sedimentary dust

are widely exceeded, sometimes by a large margin. Still the main cause is sulphurous brown coal.

In 1991 only 10% of all industrial facilities met the standards required by law.

Forest damage. Forest damage comprised about 45% of the entire forest and was increasing. The methods of investigation corresponded to those in the Federal Republic of Germany. As far as research into forest damage is concerned there exists an old tradition at the research institute Tharandt, where pollution effect research in Germany was originally started in the nineteenth century.

Surface water pollution. Water politics was determined by the limited natural potential volume of water of 17.7 billion m^3 a year. During dry years it can drop to 8.9 billion m^3. Both figures show that an extremely small amount of water is available. The entire water requirements of the GDR amounted to 8.2 billion m^3 in 1988. This reflects an extremely tight supply situation. The overall requirements increased between 1975 and 1988, though the specific needs of industry had been reduced.

Surface water is to a very large extent polluted. About 19% of the available amount of surface water could be used as industrial water (not as drinking water) but required an extreme technical effort to do so. 47% of all rivers and brooks cannot be purified, neither as drinking water nor as irrigation water for vegetables. There is also a dramatic aggravation of the situation in lakes and ponds. Consequently a third of all the lakes and ponds are neither capable of self-purification nor can they be regenerated (Succow 1990). At the moment only 67% of industrial waste water is conducted into sewage treatment plants where the water is only partly purified; only 57% of municipal waste water is included. Out of this, 18.5 million m^3 of faeces 30% are "discharged indiscriminately". Of the remaining percentage a further 12% is conducted into inland waters without treatment, and finally only half of it is mechanically and biologically treated. Moreover, especially in the case of the degradation of the lakes, there is diffuse discharge of organic pollutants from agriculture. This is especially due to the insufficiently safe storing of liquid manure, pesticides and pesticide residues, as well as to their improper application.

Groundwater pollution. The problems mentioned similarly contribute to groundwater pollution. For about 7.6 million inhabitants, the public drinking water supply did not guarantee a permanent supply of quality water; often the limits for nitrate and the microbial criteria were

exceeded. About 0.5 million inhabitants with drinking water wells of their own had severe nitrate pollution. Up to 1990, in about 1000 communities emergency supplies for infants were set up. In Summer 1991 a survey showed that 1.2 million people in the new Länder used drinking water which sometimes or permanently did not meet the nitrate standard set by the EC-drinking water guideline (*Die Zeit*, 21.2.1992, p. 31).

Groundwater is also polluted by sewerage. The structural condition of the sewerage system is desolate, mainly because a great majority of the sewers are more than 50 years old and because the concrete in the sewers, which were newly laid during the GDR regime, is mainly of minor quality, and thus the sewers are leaking.

The daily per capita consumption of water in the GDR was higher than in West Germany (190 l and 140 l respectively). In the Lausitz brown coal mining area 1.9 billion m^3 of water was pumped out daily in order to keep the open-cast-mining dry from which resulted great ecological damage.

Waste. The GDR reached an internationally remarkable level in waste collection and waste treatment, especially with the traditional, so-called secondary raw materials: glass, paper, scrap, old clothes. However, this should not hide the fact that an orderly waste management policy did not exist. In order to "save energy" waste management was widely decentralised. In January 1990 there did not yet exist a complete survey on the condition and the number of controlled dumps and the number and the locations of uncontrolled dumps. All waste dumps, which are working at the moment, are said to require the implementation of better technology or even emergency response actions. The amount of waste has increased from 385 kg per capita in 1987, to 660 kg per capita in 1991 (TÜV Rheinland 1991).

Contaminated land. The waste issue is closely related to the issue of contaminated land. Following a first survey performed in 1990, there are 27,877 sites that are currently presumed to be contaminated. Among these, there are about 11,000 landfills and dump sites, 15,000 industrial sites, 700 military sites and 1,000 large-scale sites, which are contaminated mainly due to agricultural use or sewage sludge disposal. These figures are under review. Rough estimates suggest that up to 60,000 sites are contaminated. Whether they are indeed contaminated and what kind of remedy is required is subject to detailed investigation performed site by site. As far as the military sites of the Soviet Army

are concerned the extent of contamination will be figured out in a survey mentioned below.

Recent surveys indicate that there are some huge large-scale contamination cases. In terms of extent they are comparable with what are currently known as the largest contaminated sites in western industrialised countries. The contaminated areas of the Buna and Leuna major chemical plants and the adjacent waste dump sites cover some 2.2 and 3.5 km^2 respectively (TÜV Rheinland 1991). An area of an estimated 1,200 km^2 of the Wismut region (heavy metals and radioactive elements on grounds of nuclear mining activities) is thought to be contaminated (BMU-Umwelt No. 7/1991).

Nature and landscape. The traditional protection of biological diversity and of biotopes in the GDR was usually successful in those landscapes which were not agricultural. The greatest damage to nature and landscape was caused by mining brown coal and by the type and intensity of agriculture. The latter tried with the so-called "conception of maximum yield" to use the landscape optimally as far as techniques of production were concerned. The means were land restoration (clearing out of open fields for big expanses of arable land of 100 up to 300 hectares, irrigation and drainage with the intention of homogenising the landscape) and an increasing use of chemical substances. The results were "protein production plants" removed from nature – a more proper term for large-scale monocultures – and structural landscape damage due to erosion, compaction and silting up of the soil (Schmidt 1991; Sauerbrey et al. 1991; Succow 1990). All these actions confront present agrarian technology with insurmountable problems. The 60 piggeries with up to 200,000 animals were the biggest point sources of pollution, because the quantity of liquid manure which was produced was partly "disposed of" in a concentrated form in the environment (an amount of over 600 kg of nitrogen per year per hectare was legal; this is indeed an extremely high amount).

3.2.3 Further risks

With the above-mentioned figures the extent of environmental risks in the former GDR is not comprehensively described. There is every reason to believe that the details mainly concentrate on those parts of the environment for which it is foreseeable that solutions will be found relatively quickly with the "classic" eco-technical end-of-the-pipe strategy (eg. waste water treatment plants, additional filter facilities,

substitutions) and the shutting down of industrial facilities. They are compatible with the market economy supposing that a sufficient amount of money is available.

Concerning other risks, compliance with the market economy and the feasibility of solutions may be much more difficult. This is why they appear to be underestimated. One may assume that the environment of the former GDR requires a cleanup and ecological enhancement much more than is publicly known about at this time, and that to some extent an improvement using known techniques is hardly possible at all.

The number of contaminated industrial areas and waste dumps is higher than was assumed in 1990. Some of the hazardous waste was dumped in a very problematic manner into open-cast mining holes before these holes were refilled and covered again with an overlay shelf. The big question now is, what kind, how much and most of all where waste was "disposed of" in this way. This hazardous waste leaks into the groundwater. The leakage will possibly become even stronger if the technical regulation of the water regime, which is necessary for mining, is abolished and groundwater runs through the hidden dumps and washes out toxic substances.

Generally, in the areas of brown coal mining, the reduction of the highly developed regulation of the groundwater regime constitutes big environmental risks. It is possible that the management of the water balance (pumping, observing, discharging as surface water) will need to be continued a long time after the end of brown coal mining. This is an example of what one may term the ambivalence of ecological measures.

Degraded arable land must be enhanced on a scale that the reports do not yet quantify. Additional sources are calculating that an amount of arable soil of approximately 2.4 million hectares (that is 40% of agricultural land in East Germany) is degraded or has been damaged by anthropogenic substances. Compaction, water erosion and peat-degradation are named as the predominant problems caused by intensified land use and large-field tillage practices. As far as the deterioration due to substance input is concerned, the data at present allows only a rough calculation. About 520,000 hectares are being considered (Schmidt 1991). It is pointed out that in particular the adverse development in peaty soils is to a large extent irreversible (Sauerbrey et al. 1991).

The weekend houses in the countryside are another element of environmental pollution in the GDR, often underestimated – for obvious reasons: 70% of all the families in the GDR had a so-called "*datsche*" with all their environmentally adverse side effects. Worth mentioning here is the destruction of the open landscape, especially of

ecologically valuable places on the waterfronts of lakes, the sewage discharge via soakaways into the groundwater or directly into brooks and lakes, and the high demand for energy. Generally, in the context of the environmental situation of the former GDR one should also discuss the structure of private consumption. That, however, is beyond the scope of this paper.

The above stocktakings concerning the environmental situation in the new Federal States date from the time before the unification, and were again summed up in November 1990 by the Federal Minister of the Environment in the "*Eckwerte der ökologischen Sanierung und Entwicklung in den neuen Ländern*" ("principles of ecological cleanup and development in the new Federal States") or were confirmed in additional scientific publications. Further knowledge will be continuously added, largely from two sources: (i) the upcoming results of current efforts to evaluate and utilise "old" GDR data; (ii) the different studies that are now under way to check e.g. contamination in the area of the *Wismut AG* (nuclear waste), in brown coal mining areas, in the old-industrialised centers, on hazardous waste sites in military areas and on the bases of the western grouping of the Soviet Armed Forces.

3.3 Environmental degradation due to unification

3.3.1 Additional risks

In addition to the degradation dating from the era of the GDR there is some degradation, which has been caused by the transition and by the unification process. This has upset those elements of the environmental policy of the former GDR that were even appreciated in West Germany (e.g. low NOx-emission, priority of freight traffic via rail, rates for recycling of certain kinds of waste). However, these positive effects are not at all genuinely environmental ones. To be correct in terms of the history of the GDR's environmental policy one ought to mention that in these cases the environment benefitted from economic and industrial shortcomings.

The additional environmental damage is induced by the process of transition. There is not yet a quantitative balance between "old" GDR risks and "new" transition induced environmental risks. Some analysts assume the new ones to be very dominant (Hübler 1992).

Some examples show environmental problems due to the nascent market economy and the poor ability of administrative power to enforce environmental regulations in the period of transition. The establishment

of nature protection zones is often politically blocked because nature protection is believed to threaten the "absolute priority" of creating new jobs. Meanwhile, in many cases severe degradation of nature and landscape occur. In 1990 and 1991 and on occasions even now, degradation is not prevented because of a lack of legal guidelines and obscure responsibilities.

Due to underdeveloped perceptions and a lack of political structuring, there is the danger that those national parks, designated as such during the transitional period of the GDR (e.g. Rügen, Schorfheide, Hochharz), will be devalued and their protection of biological diversity and biotopes lost. In June 1991 the big non-governmental environmental organisations blamed deficiencies in environmental policy for the destruction of precious and intact areas by projects of road construction, by sewage discharge, by plans for shooting ranges for the army, by forestry clearing, and also by the heavy and barely controlled increase in tourist activities.

To date only about 73% of the population in the new Federal States are connected with the sewerage system, and only 53% with waste water treatment plants (West Germany: 93%, 90%). Groundwater often exceeds the limits for the use as drinking water supply. Improvements that have been achieved up to now, owe only to the closing down of wells and the fact that groundwater is no longer measured.

In some places mayors abolished without any authorisation water and nature reserves in favour of housing schemes and industry. This is not legally permitted, but available sanctions are much too feeble to act as a deterrent.

There exist only a few waste dumps which more or less have the required standard of operation and of engineering conditions. The majority of disposal places, whether controlled or casual, do not meet environmental protection requirements at all. The amount of waste, however, more than doubled in 1990, especially after monetary union (with some ugly excesses in wild dumping). In addition, it is a general trend in modern industrialised societies that hazardous waste and domestic waste might not be systematically distinguished in terms of their hazardous impact.

Straight after monetary union the amount of cars increased dramatically, with all the usual side effects.

A problem of a specific sort is the environmental degradation on military bases. As the Soviets withdraw, the first environmental surveys are conducted for each base of the western grouping of the Soviet Armed Forces. These surveys are added as an enclosure to the report of the handing over of the sites. The reports estimate the need for an

environmental cleanup. The first experiences reveal serious degradation of nature and landscape as well as, in some cases, shocking hot spot contamination. For example, there are reports about wild disposal places where munitions and arms are being dumped and levelled off. The fact that the German-Soviet Treaty foresees that the cleanup costs are to be quantified and deducted from the German fund for Soviet withdrawal, led to the situation that Soviet military officials frequently tried to irregularly dump military waste and scrap and, thus sometimes create new and potentially even more dangerous waste sites. In the meantime, the guarantee of pollution control at Soviet bases has become a topic of diplomatic contacts between the Federal Republic of Germany and the Soviet Union.

3.3.2 Making up the western model of production and consumption

The above mentioned environmental problems merely represent the worst elements of what, in a more profound view, can be summed up as some of the environmental implications of the western production and consumption model which is now to be applied to the former GDR. This model can be described as an institutionally coherent combination of mass production and mass consumption termed "fordism". Altvater (1991) suggests that this description might be improved by emphasising its environmentally adverse impact. He proposes the term "fossilism" in order to point out the amount of fossil energy and chemical substances put through the ecosystem. This seems to be an adequate way of describing the input of resources into production and the output of products, in ecological terms, as throughput that increases global change and the loss of biological diversity. As far as we today know, this increase is inevitable. The economic and social welfare of fossilist societies is built upon an access to global resources and a usage of resources that is not applicable to all nations on the earth.

Granted, this warning does not really challenge the current agenda of mainstream political thinking. And if so, there is not much inclination to do anything serious about it. After all, public opinion in the former GDR is dedicated to increasing wealth instead of correcting western living conditions. But one has to keep this in mind when reflecting on future environmental action.

3.4 Evaluating the state of the environment

3.4.1 Are sufficient data available?

Today's knowledge about environmental degradation does not permit a final full-scale assessment of the starting position of environmental rehabilitation. Asking for a finalised assessment means making data processing a never ending story. Seen from a practical viewpoint, there is already much data available, both from "old" GDR sources that can be evaluated and utilised and from new studies carried out within the framework of the recently set up environmental policy.

The retrieval and clearing of environmental data from former GDR institutions is a permanent task of the new administration. The 1990/1991 process of closing down and reshaping industrial and regulative facilities was also a time of employment uncertainties and mishandling of data files. Many of the laid off employees took data files away with them either to "save" them because they feared that in the eyes of other people these bits were scrap – or, most likely, in order to make capital out of them and to enter the market economy. At the time being it is one of the major tasks of environmental policy to find out what kind of files existed, to evaluate the quality of data, to investigate where the files are now and to find a way to get them reused.

Nevertheless there are still major requirements for the future to enhance and complete environmental data files. This has to be done both in a scientifically and in a practically appropriate way, not relying on "quick and dirty"-methods that are sometimes offered by consultancy services. For instance, as regards soil data files a study which assessed the validity of "old" soil data in terms of sampling, lab methods, terminology and spatial and functional aggregation, recommends a restricted use of old files. As it turns out there are considerable differences between soil methods used in West and East Germany. The study recommends that future data collection be based on western methods. Existing data may be used by adapting the interpretation of the data. Especially as far as organic compounds in soil and in the food chain are concerned there exist only poor data because lab costs are high and the former GDR could not raise enough money. Furthermore, the new environmental approach makes it necessary to establish monitoring systems. For example, as more than 70% of drinking water supply stems from groundwater wells that often do not meet drinking water standards it is necessary, inter alia, to set up an extensive integrated soil and groundwater monitoring system.

It must be noted that examples like the groundwater monitoring once again raise the issue of the division of competences between the state and the federal level in environmental policy. In West Germany it was not politically feasible to implement groundwater monitoring at the level of the *Länder* that were in charge of groundwater protection. Obviously, addressing environmental cleanup and development requires some shift in the allocation of administrative tasks (see 5.2.2 and 5.3.5).

Summarising, we can say that there is sufficient information available to set up environmental policy and to develop environmental criteria for economic policy. The quality of the reported data is roughly the same as in other industrialised countries.

3.4.2 Is there an environmental disaster?

The state of the environment has led to the sound assumption that certain environmental problems are far beyond what is currently common in western industrialised countries. This is a very guarded and cautious statement. It does not explain how far beyond nor does it talk of a "catastrophe" or a "disaster". During the political decline of the GDR public understanding of environmental problems tended to overestimate the extent of environmental threats. This overestimation followed the commonly held notion that everything associated with the old regime was bad. It is true that the degradation of man and environment is indeed very grave, but it seems inappropriate to use superlatives which emphasise a catastrophe as is often done when informing the public of the East German environment. There are two points showing why this seems not to be reasonable:

(i) An environmental catastrophe which harms and threatens people is something that people in modern Europe have not so far experienced, the world wars apart. The people of the GDR have also not experienced this. Especially under the looming threat of global environmental change any assessment has to be done carefully, as long as the entire extent of the degradation cannot yet clearly be seen (including, by the way, the extent of the degradation in western countries as well).

(ii) Environmental science provides no categories that allow a simplifying evaluation. It is not possible to draw an analogy between the unemployment rate of a given country and its rate of environmental risk. Referring to categories of economic growth, we are accustomed to

use such comprehensive figures. Ecological risk or environmental quality are not categories which allow such simplifying evaluations. To give an example of this ambivalences: starting from the assumption that the key issue to determine ecological quality (or risk) is the number of endangered species living in a country, the GDR would be far ahead in comparison with the old FRG because of some almost pristine landscape in the north. Such areas have allowed legal protection up to 10% of the former GDR's landscape as nature reserves (FRG 1986: 1.2%). However, taking industrial emission as a yardstick, the ranking is reversed.

Some further comparisons between East and West Germany might contribute to a better understanding of political approaches and they hopefully dissuade us from drawing a picture of the Federal Republic of Germany as a paragon of environmental virtue (von Lersner 1991). Regarding the emissions of traditional environmental loads such as dust and sulphur-dioxide the GDR was about 20 years behind the West German emission standards. But the emission of nitrogen was drastically lower due to the smaller mobilisation rate and the concept of rail freight transport. There are issues in the old FRG such as waste management that still appear to pose problems incapable of solution.

3.4.3 Patterns of environmental damage

Reviewing the available environmental data one has to conclude that there is no simplified overall conclusion possible. Obviously, the quality of the environment varies enormously depending on which issue and which part of the country one focusses on. In order to approach such a conclusive judgement I will now point out some patterns of major environmental risks.

Archaic industrial facilities cause wide-spread non-point source pollution which is worsened by the scale of these industries and their concentration in old industrialised areas. The absence of sound waste management causes widespread high-dose point contaminations. In those areas monitoring programmes show an impact on human health and life expectancy. Chronic bronchitis and asthmatic diseases were reported. High blood lead levels were also diagnosed in particularly exposed areas. In areas with a damaged environment epidemiological surveys show a variety of adverse health effects mainly related to air pollution (to a minor degree to direct uptake from soil or through plants). There is some long lasting ecological damage due to agricultural

soil use and mining activities, also concentrated in the south of the former GDR. A remedy is not foreseeable in the near future, if there will ever be one at all. There probably will be long time lags between the source and the impact of some environmental damage, like pesticides in soil and groundwater. There was actually no communication about environmental risks to the public, and hence little environmental concern.

Environmental damage and shortcomings in the environmental infrastructure in East Germany are giving, as far as is known today, a true reflection of environmental problems in Eastern Europe. One might take the East German example to point out some structural patterns of environmental damage in countries with a similar old fashioned industrial make-up (SECOTOX 1991; Busch-Lüty 1981; Förster 1991; Weiβenburger 1988; Umwelt in Osteuropa 1990; Schulz 1992; Kotschurow 1992; Klein 1992).

4. Historical reconstruction: how did the environmental crisis develop?

4.1 Introduction

While chapter 3 touched on the technical conditions and environmental resources, chapter 4 aims to reconstruct the historical development of the environmental crisis in the GDR. Providing some background information on what constituted the state of the environment in terms of policy approach and theoretical conceptions might be of some help when one tries to understand the current situation. And there is a further reason to look back and to reconstruct the political framework of the environmental crisis in the GDR.

For those interpretations which notoriously state that only a western industrial market economy is capable of environmental management, there exists no further need to explain the environmental disaster of the GDR. In this view everything that did or did not happen relates to the poor command system, the economic concept of socialism and the imperial policy of communism. The answer is, however, much more difficult for a more subtly diversified approach which has the aim of explaining why the guiding socialist principles and their background in materialist ideology were not able to organise the economy and ecology.

The socialist leaders approvingly accepted environmental degradation, among it even such unambiguous environmental damage for which it was absolutely clear there would be no cure. Assuming that the pattern of economic decline in the GDR became apparent during the 1980s and

thinking only from the point of view of those in power – did those who were responsible have any medium-term conception at all of maintaining their own power? Had they any idea of what was going on in their country in terms of environmental damage, public health problems and the worsening of the economic-ecological basis?

In the past the SED/GDR leadership was scarcely seriously supposed to have an enlightened or reasonable attitude towards environmental issues. But they were supposed to have at least some modest conception of how to muddle through. This is what one used to imply – otherwise one would have been forced to speak of a sort of a game of chance that the GDR leadership was playing. Thus, it was assumed that this leadership acted according to an environmental concept – even if this concept was of minor value and had to be disapproved of. This is also expressed in the fact that western critiques of the GDR usually encompassed arguments criticising the ideological concept of progress (progress without limits to growth, a naive believe in progress etc.) and productivity (productivity seen only in terms of the amount, not the quality of products). Or alternately such criticism focussed on economic and socio-political arguments (concept of world market standard, the economic pressure to intensify land use, scarce resources, starting conditions of the post-war period, international terms of trade) (see e.g. Busch-Lüty 1981). With our present knowledge we must doubt whether the GDR leadership had any idea at all of further developments in the environmental sphere. Moreover, at least the leading elite did not show any interest in environmental concerns.

Another piece of evidence illuminating the ability of the GDR leadership to neglect reality was given by Schlüter, the former leader of the central planning commission. He reports that in 1988 the leadership simply denied the fact that the GDR was no longer cash liquid concerning their international obligations (Hertle 1991). The following analysis outlines the way this non-environmentalism was reflected in different forms.

4.2 Political context and environmental concepts

4.2.1 Preliminary remarks

The history of the GDR's environmental policy is not only and not without exception a story of crisis and disaster. After all, many experts working within the academy of science, the universities, the churches and citizen groups and individuals working within the administration

tried hard to achieve change. Insiders acknowledge these efforts which necessarily took place in the background. Admittedly everybody's commitment was likely to be worn down in the daily battle with the hardliners, who were all powerful in all spheres. The history of environmental policy and the ecological movement in the GDR has not yet been written. A reappraisal of the political approaches, of the actual effects of environmental policy, of its carrying out in enterprises and the administration, as well as a reappraisal of theoretical discussions and of the story of active individuals is still lacking.

The following annotations and explanations cannot bridge this gap. Especially the new efforts to trace back and reappraise the policy and history of the non-governmental environmentalists in the "*Gesellschaft für Natur und Umwelt*" and of environmental science (Behrens 1991; Beleites 1990) are expected to provide new insight enlarging what is already known (Hegewald 1990; Schieferdecker 1990a; Streibel 1990; Paucke 1992).

4.2.2 Centralism

The documents of the Central Committee, which have now been made public, show a situation of gross absurdities: important decisions concerning environmental policy in the GDR were neither made by the Council of State, nor by the Central Committee of the SED, not even by the Politburo, but rested personally with Günter Mittag, head of the economic department of the Central Committee. There was not a single environmental expert among a staff of hundreds of members. The words "environment" and "ecology" were non-words. Mittag made all important decisions concerning environmental policy (e.g. the reduction of emissions) himself or consulting after with Honecker. Up to 98% of all proposals and petitions concerning ecological policy, which were made by all parts of the population, by the SED, and by institutions of the GDR, were simply left unanswered, according to the documents. In the 80s the censorship of publications and e.g. of curricula in the field of ecology and environmental economy also rested with Mittag. The economic policy of the GDR arranged for 420 exceptional permissions to exceed the maximum concentration of toxic substances and dusts at work (in some cases, as with asbestos, the exception was permanent). But these pollutants did not only occur at work, but also in residential areas and in schools.

4.2.3 Environmental policy as a secret

Generally speaking every environmental policy requires an assessment of environmental risks and of the social starting-points for action in order to shape its action lines, if only because of the way in which ecological policy sees itself and because of its comprehensibility. The SED government mainly refrained from making such an assessment of the environment of the GDR or even actively blocked it. During the entire period of international ecological discussion there was no official overall report on the state of the environment in the GDR. Before 1974 some reports were at least published in the press. In 1978/79, they were designated "confidential classified information" only accessible to the Council of State. From 1982 onwards, they were accessible only to Stoph, Mittag and Mielke personally. Of course there were scientific publications which cited environmental damage, such as e.g. Fiedler (1990) or Busch et al. (1983). It is throughout striking though in publications dating from this period that obvious gaps in data or other unspeakable facts could only be mentioned indirectly, so to speak, by pointing out figures and facts in the Federal Republic of Germany and than relating this to general trends in the industrialised world.

As a sign for the status which the former leadership attached to environmental policy, you have to rate the fact that there was not a single meeting of the Central Committee of the SED or the Politburo which was explicitly dedicated to the subject of the environment. It is reported that around Honecker and Mittag the terms "ecology" and "environmental protection" were downright non-words which could not be used. Therefore we are not surprised that dealings of the former Minister of the Environment of the GDR were depicted as condescendingly degrading – although there existed an environmental law in the GDR (Autorenkollektiv 1986), worked out to the last detail, which definitely satisfies international standards. There were no sufficiently qualified agencies to carry it out on the necessary scale.

Whatever could be achieved concerning innovations in environmental policy had to be legitimized by proof of its authority "following the party line". Neither the relevant laws nor quotes by Marx and Engels were considered to be sufficient to supply this authority. Instead authority derived from three main sources. These were the Constitution of the GDR, though it established environmental protection without creating rights which could be enforced in civil law or administrative law. Furthermore, the SED manifesto could curiously help because after all it spoke of the protection of the natural environment and of "nature as the source of all life". This offered a possibility to argue on moral

grounds, though an insufficient one. Finally, especially in the 80s, the greatest domestic influence derived from foreign policy and especially the internationally fixed environmental requirements (e.g. conventions to limit emissions).

One venture in environmental policy by the Soviet Union had a great diplomatic effect. In the Warsaw Pact in 1988, Mikhail Gorbachev carried through his concept of "ecological security", highlighting effects of the arms race on the environment and other aspects of ecological security as he put it, in the declaration of the participating States of the Warsaw Treaty (Die Folgen 1988). Even stronger demands in this matter were presented a short time afterwards by the Soviet Union in a solo effort before the 43rd General Meeting of the United Nations. Eduard Shevardnadze introduced overall security demands and demands for international cooperation (Allumfassende Sicherheit 1988). Gorbachev's concept put to the test the commitments to disarmament and international environmental protection, not only of the Western states, but particularly of his own partners in the Warsaw Pact. The status which was attached to environmental policy by the Soviet Union, contrasts obviously and decisively with that which the SED leadership considered advisable. The concept was indeed adopted, but unfortunately following the decline of the Warsaw Pact nobody took it up again.

The peak of the secrecy policy was the decision of the GDR Council of State of 18 November 1982 to impose a high security classification on environmental data as well as on some qualitative evaluations of the state of the environment. This decision was justified by referring to US-President Reagan's anti-socialist crusade, the missile arms race and the state of the economy. At that time many people felt acutely threatened by the missile policy. That might explain why it had been possible for the state to ascribe a higher status to what was supposed to be a policy of peace than to the making available of environmental data.

4.2.4 Cutting off from modern environmental policy

The effect of this decision on environmental policy was catastrophic for two reasons.

Even less data than before was now available to the public. This is bad enough in itself, because the development of public awareness of environmental risks and a willingness to back environmental policy was urgently needed. This presupposes, among other things, a minimal knowledge on environmental issues. As there was actually no important

data available to the public and to scientists, a social awareness of the environment could only develop to a marginal extent – all the more as any such attempts were designated criminal.

About half of the laboratory capacity for the measuring of environmental pollution that was available in the GDR in 1982, was indirectly shut down by the decision as every single lab technician had to abide by the policy of secrecy of environmental data. Many of the scientific and technical institutions either could not (effort) or would not (inspection by the state security service) carry this out.

Thus the decision had an effect that went far beyond secrecy. It separated the GDR off from modern environmental policy. The separation was drastic, especially (i) because research was widely put on ice by it, (ii) because the GDR set itself aside from progress in the technique of analysis – which was developing just at that time –, and it could hardly hope for innovations of its own, and after all, (iii) because it meant a separation from the general trend in environmental policy. This trend places increasing significance (drinking water quality and chlorinated hydrocarbons, micropollutants in the forest as ecosystem, food quality and residues of veterinary drugs etc.) on especially small amounts of pollutants, so-called micropollutants with considerable toxicological effects on man and the environment (e.g. PCB, PAH, CHC, dioxin, cadmium). These micropollutants make increasing demands on environmental analysis. They constitute one of the major environmental challenges.

Of course, in consequence of the secrecy policy, the little scientific and public discourse about the environment that had developed before also became stagnated. There was a lack of informative popular scientific literature, of public discussions on TV or in the print media, of scientific conferences and comprehensive research, and there were virtually no hearings and parliamentary discussions – things that are essential for creating a culture of risk communication and for getting tough on environmental choices.

If we assume that it is absolutely necessary for every serious attempt at an effective environmental policy to spread into society knowledge about environmental damage and to make public the danger posed by pollutants to human health in order to create a willingness for ecologically oriented changes in the way we live and the way we work, then the decision to keep secret environmental data must be considered as an attempt to block the environmental law of the GDR, and thus to isolate the GDR from modern challenges in environmental policy and to make it impossible for environmental science to practically test conceptions and proposals to cope with environmental problems.

4.2.5 Immunising the conception of economic growth against environmental requirements

The history of environmental policy in the GDR is also a history of scientific and political concepts and of the material conditions that the "socialist effort" began with. The status of the SED leaderships' sociological reflection on the world of ideas – i.e. concerning social policy and inherently also environmental policy – has yet to be examined in detail. If, however, Günter Gaus was correct in what he noted in 1983 about "Honecker's party", it must be given much weight. Gaus maintained that the social origin of the SED leadership is quite homogeneous and that its basic political and moral values date from the perception of the German labour movement before fascism (Gaus 1983). Consequently this also applies to its understanding of progress, technology, enjoyment of nature, social security and consumer needs.

"Socialism and the environment" had for a long time been the subject of scientific debate in the GDR. The topic was partly discussed quite controversially, especially by philosophy and economics, but also by the engineering sciences and the natural sciences. Striking about the structure of the debate is that the different subject areas scarcely ever overlapped with each other. Obviously a conception of environmental policy, which brought together public health issues with issues of environmental damage, nature protection and economic trends, and thus created a consistent policy approach, did not exist at all. Just this seemed to have been forbidden intentionally – apparently because it was assumed quite correctly, that environmental demands in terms of policy, standards and investments would become more urgent the more they were supported by concrete references to necessary protection against health dangers.

Of central significance for the environmental conception of the GDR was an economic argument on the question which economic value national economic expenses ascribed to environmental protection. The powerful answer to this question – the answer of those in power – immunised the system against environmental approaches: "The means, which after all make possible successful progress in many other spheres, must flow from the efficiency of the economy. Among them there are also measures to protect nature and the environment" (Honecker 1976). To put it in more simple terms: first the chimney must smoke, then comes the environment. With this formula the primacy of the economy over environmental protection was established, despite all other formulas of integrating it into social policy. This formula of immunisation was theoretically justified by an interpretation of the

Marxist theory of the value of work, according to which environmental protection does not make socialism wealthier in terms of material goods (Köhler 1976, chapter 4.3).

A perceptional effect of this environmental conception is the establishing of a so-called complex of needs referring to the needs of society, their realisation as guaranteed by the state, and environmental protection as a marginal occurrence. This notion led to the circumstance that highly subsidised prices (for food and consumption items) stimulated an environmentally irresponsible production. The system of economic incentives for productivity was regularly interpreted to the disadvantage of the environment. This becomes particularly clear when we look at the contradiction between the efficient economic handling of certain materials on the one hand (secondary raw materials) and the waste of private energy and certain forms of consumption on the other hand.

A sociological observation is essential concerning the official GDR reception of the oil crisis in 1973 and concerning "The limits to growth Report" of the Club of Rome. The GDR tried to overcome the crisis with the concept of the autarky of brown coal energy production. Public awareness of the crisis did not emerge as it did in the Federal Republic of Germany where it was among other things the result and the basis of the development of an awareness of the environment and of creative environmental solutions. The movements of SMI (*Sozialistische Masseninitiative*) and the *"Mach-mit"-Wettbewerbe* (join-us-competition), which were organised from above, could not compensate for this lack. Here, in the "*Nischengesellschaft*" (Günter Gaus: society that consists of a multitude of niches, i.e. possibilities to hide ones own actions and preferences from the political mainstream) the lack of democracy in general met the de-activation of powers, which effected also environmental policy.

The question should be raised, to which extent leading individuals and the arbitrary personal decisions of the GDR leadership shaped the development of the GDR. An instructive example which sheds light on this is the 1988 controversy in the SED politbureau about the fact that the GDR was no longer solvent and about the political consequences to be drawn. Actually, there were no consequences (Hertle 1991).

4.3 Scientific conceptions concerning environmental policy

4.3.1 Preliminary remarks

In spite of the political conditions described above, which were proposed as a solution for environmental problems, a broad environmental discussion had developed in the natural sciences in the 70s. Looking back from today's perspective, several systematic lines of argument can be distinguished. They show diverse conceptions that are briefly reproduced in the following, because they prove that in the formerly socialist countries there was in fact a serious environmental debate highlighting some of the issues which are still debated today. Focussing on the debate inside the former GDR, however, it is understood that the following analysis does not take into consideration the contributions by dissidents (Harich 1975; Bahro 1980; Havemann 1980). Given the framework of this paper there is another restraint to be mentioned: the analysis does not present a categorisation of the debate that addresses crucial environmental issues in modern western marxist contributions (such as e.g. Bookchin 1982; Commoner 1973; Immler 1989; Haug 1981; Tjaden 1990) – although a detailed and in-depth analysis is highly desirable both for a historical understanding of marxist theory and as a basis for improving the understanding of future challenges to modern societies.

4.3.2 Origin and course

In the socialist countries the discussion about the ecological prospects of mankind and environmental policy started at the end of the 60s. The discussion was brought about by problems which occurred in production, especially in the Soviet Union. The type of growth – caused by historical developments (destruction due to war, development of a low standard of living, arms race) and by the way the Soviet Union saw itself (transfer of know-how and resources to Eastern Europe and to Third-World countries, inner colonisation of its own peripheral regions) – was demanding energy, resources and space on an extreme scale, especially during the post-war period. Politics was primarily oriented towards extensive aims, which were supposed to maximise the output. At the end of the 60s the necessity of long-term resource planning became obvious. The first coherent description of the environmental challenge is provided by *Man and the Environment*, a discussion with leading Soviet scientists arranged by the Soviet journal *Woprossy filosofii*

(Round table talk 1973). In an analogy to the *Club of Rome* one might call this round table the *Club of Moscow* to indicate its significance. It focused on topics such as the type of growth of the economy, forms and features of industrialisation, consumption of resources, aspects of an international analysis of the production system, and effects of the development of productive forces on the development of the personality and the structure of needs.

In the GDR the first detailed, theoretical contributions to the environmental problem, seen from a philosophical (Bittighöfer et al. 1972) and economic (Grundmann/Stabenow 1971; Mottek 1972) point of view, were published in 1972. Comprehensive discussions began during the 70s. Concerning this initial phase, one must emphasise the contribution made by the *World Congress of the Philosophers* in 1973 (Buhr/Kröber 1977).

In the socialist countries three important reasons for the scientific analysis of the environment can be determined:

- interpretation and solution of domestic environmental problems;
- environmental problems as a subject of international discussion (relation between the preservation of peace and of the environment as a necessary requirement for any human prospects (Borissow 1977; Helmbold 1976), as well as "international ecological ethics and security" (Nowikow 1978, p. 321ff.) and environmental protection as part of the policy of *détente*);
- ideological analysis of Western environmental experience and corresponding scientific beliefs (e.g. Bittighöfer et al. 1972; Rechtziegler et al. 1977; Horsch/Leonhardt 1973; Leonhardt/Speer 1977; Maier 1977; Fjodorow 1979).

In the GDR, environmental policy began in two areas: the protection of nature and the planning of the distribution of productive forces (territorial planning). Nature conservation and landscape management continued throughout the 50s. The law for nature conservation of the German Reich dating from 1935 was replaced by a GDR law for nature conservation. A large number of legal regulations were passed concerning the protection of species, the protection of biotopes, land utilisation, and the regulation of certain forms of land use like hunting and fishing (Academy for political science and jurisprudence 1978). Via the "*Landeskulturgesetz*", a comprehensive environmental law, this dealing with specialist aspects was embedded into a comprehensive systematic conception of environmental protection. This law, which was enacted in 1970 and which aroused international attention, evolved an

apparatus of intervention, comprising nature planning as planning for recreational areas, for the protection of nature, and – in the sense of environmental planning – as a contribution to the overall planning. The highest aim was to guarantee the utmost social benefit or what was seen to be such a benefit. Considered necessary to this aim were complex planning, effective multiple use of the landscape and its elements (e.g. water), spatial concentration of certain usages, and ex-ante examination of the environmental impact of investment.

The environmental issue as a "new" problem was thus confronted with evolved social and governmental patterns of action concerning national culture and development planning, though these patterns of action had not prevented environmental damages. Thus it is understandable, that scientific contemplation began with problems of planning and developed into a philosophical and political economic discussion. At the time when the extensive type of growth in the Soviet Union came up against certain limits of the consumption of natural resources, the first signs of a scientific comprehension of the problem can be found in the discipline of political economy. The political economic debate drew attention to the following problem, among others: while natural resources are socially used, the registration of their value is not socially controlled, but is fixed pragmatically in each individual case. As long as environmental difficulties concerning the growth of the national economy did not arise, this practice was not restricted. On the contrary, natural resources were used uneconomically and waste was not recycled. Only when the situation became tight, were administrative and legal changes discussed, which were supplemented by economic principles (polluter-pays principle). With the discussion about the economic valuation of natural resources, the scientific awareness of the environmental problem emerged (Strumilin 1968; Suchotin 1968). The scientific perception recalls similar perceptions in western countries as regards the allocation of social costs.

Scientific awareness, however, was not accompanied by political awareness. While the big bureaucracies displayed inertia and became more and more uncontrollable, resource exploitation was mainly withdrawn as rational decision making criterion. This can be demonstrated when looking at the gigantic plan of the ministry of water economy to change big parts of the natural water regime. Only when the Gorbachev administration dissolved the ministry was the programme for the diversion of the great rivers to be stopped. Similar things happened with the so-called amelioration of the soils by irrigation. The actions of the hypertrophic bureaucracies are a further proof of the

highly ineffective functioning of such structures which may also form a restraint upon the transition of societies.

Although environmental theory was developed with a demand for close reference to practice, it hardly established mutual correspondence between the philosophical, the economic and the planning contributions. A cogent feedback to practice was completely missing.

After a whole range of essays, brochures etc., and after having taken note of central Soviet publications (Fedorenko/Gofman 1973; Minc 1976; Lojter 1977), several books, including some of a popular scientific kind, were published in the GDR at the end of the 70s (for philosophical discussion: Paucke/Bauer 1980; for economic discussion: Roos/Streibel 1979; for planning: Bönisch et al. 1976; and for landscape planning: Neef/Neef 1977. Examples of popular scientific publications are: Hitziger 1979; Schindler 1979; translated from Russian: Adabaschew 1977; Djoshkin 1978).

The scientific discussion on the social and the natural origin of environmental problems definitely reached different results. Undisputed reference was made to statements by Marx and Engels concerning the relation between man and nature and its mediation by work. Here the fundamental principles for further knowledge are to be found. The ground in the sense of cultivated land, and the worker are both described as "fountains of all prosperity" (Marx 1979a, p. 529), and it is pointed out that "victories" over nature can also be defeats in the long run, because ecological regeneration is constantly reduced (Engels 1978, p. 452ff.). Marxism is considered to be the necessary basis for theoretical and political action and it is recognised that a further development as regards environmental science is needed (Lüdemann 1973). This position was politically acknowledged at a symposium of the Communist parties, which took place in Prague in 1972 under the title "Marxism-Leninism and the problem of environmental protection" (Der Umweltschutz 1972; see also Sagladin/Frolow 1978).

In the statements of the *Club of Moscow* the problems concerning the analysis of causes, the possibility of formulating new questions, and the path to a socialist environmental policy was outlined. At the same time, a spectrum of opinions shows that the analysis of causes sometimes goes as far as to observe that the "global, technical processes on the present level of our civilisation" change the biological balance (Rundtischgespräch 1973, Kapiza), or that "the difficulties are not connected with the development of the systems but with growth" (ibid., Medwekos). According to this view, the question of environmental prospects is answered very broadly and for instance oriented towards

the "possibility of a stationary state of mankind within the system of nature" (ibid., Rytschkow).

4.3.3 Ecology as a problem of planning

In the course of the socialist environmental debate various stages with different conclusions can be distinguished. The first may be to identify the problem of environmental pollution as a problem of the insufficient carrying through of socialist principles of planning and managing. Wolkow thinks that the socialist society is not immediately capable of completely putting into practice the principles of a socialist use of natural resources. In his opinion "ill-considered decisions, which do not sufficiently take into account the interweaving of the entire complex of the possible results of industrial intervention into nature and which fail to realise state planned production and ecological regeneration" play a negative role (Wolkow 1978, p. 161). Oehler points out the problem of the failure to realise state conditions in practice (Oehler 1978, p. 21). But all this is not enough to explain the deficiencies in planning policy.

If we sketch the planning reform of the GDR, it becomes obvious that other factors must be named in explanation. We cannot claim that there existed a fixed canon of rules for planning at the birth of the GDR. On the contrary, national economic planning, especially the part concerned with territorial implications, was developed on the named conditions without sufficient theoretical, methodical and instrumental conception. While the fast expansion of production – without paying attention to the effective use of the resources – became the *conditio sine qua non* from 1951 to 1956, planning was oriented towards reference numbers for production planning, quantity plans, and centralist structures of decision. Errors in the quantity plans (so-called "soft plans" of enterprises) and reserves of production, which could not be achieved, caused a change in strategy in 1957, which was oriented towards mainly self-sufficient territorial units with decentralised decision-making structures. At the beginning of the 60s the centrally managed, structurally determined branches of the economy regained their dominating role with the motto "economising of territorial planning". It was not until the New Economic System of Planning and Management (NÖSPL) was decided on in 1963, that we can speak of a relatively consistent system of planning, a system that was, however, not carried out. The quantity plans were replaced by a system of economic tackling which could only work, though, if the prices signalled the actual social costs. It is exactly at this point that environmental

problems first appeared: as a problem of the right understanding of the carrying capacity of the landscape and the environment and of their monetary assessment. In Western literature this is described as a problem of environmental economy: the problem of the internalisation of social costs (such as costs of pollution abatement, waste management, and energy saving). In the 70s voluminous works on the methodical and instrumental improvement in territorial planning (Wurms 1976) and on the integration of landscape planning and landscape economy were published.

4.3.4 Ecology as a problem of assessment

In 1973 the Soviet authors Fedorenko and Gofman gave a summary of the current problems of environmental planning, which was often quoted, even in the specialist literature of the GDR (Fedorenko/ Gofman 1973). They listed a string of problems, picking out as a central theme the methodical problems of the prospective planning of environmental quality. At that time this planning was not yet a part of national economic planning. Moreover, the authors criticised the inadequate system of information and prognosis of national economic planning, as well as the lack of environmental consciousness of the population: "Not a single (Soviet, G.B.) sociologist, however, has tried so far to survey the preferences and value orientations, which developed in Soviet society, in connection with environmental quality" (ibid. p. 232).

Fedorenko and Gofman found that new flows of energy and materials result from environmental recoveries that must be cast in economic terms in order to be included in the assessments of the national economy. At that moment they were only screened for "the value of the raw materials regenerated from waste" (ibid. p. 233). When environmental protection joins the sphere of production the question arises, "whether the improvement of environmental quality is a factor which increases the economic effectiveness of production by society, or whether environmental protection and economic effectiveness are antagonistic?" (ibid.).

The first work which summarises the material on economic assessment, collected from Soviet literature and practice, came out in Moscow in 1972 (Minc 1976; also published in the GDR). In the Soviet Union we can identify three stages in the process of recognising the problems and of dealing with them. With the great programmes to cultivate land in the 50s, the state became aware of the problem of

losing billions of roubles every year. After the attempts of economic reform in the mid-60s and after the transition to economic accounting, it was claimed that natural resources were now priced according to the profits gained from their use (Fedorenko 1968). Since the 70s additional environmental assessments were performed (Fedorenko 1976 and Saikow 1979). These were said to contribute to the recognition of an "objectively identical interest of all members of the socialist society in preserving and reproducing natural resources" in environmental theory (Graf 1978, p. 818).

As a theoretical problem the practice of assessment again refers to the fact that assessment in an environmental sense will always remain unsatisfactory and that dealing with nature cannot be restricted to the problem of delimitation, assignment, and assessment of environmental damage. Attempts to assess the resultant costs of such environmental problems as forest die-off, traffic, soil contamination, as we know them from Western environmental policy, did not exist according to the restrictions set by the political leadership. This is why all these approaches to environmental assessment were supposed to be purely academic and theoretical, apart from some minor cases of application like e.g. the assessment of the economic impacts of measures to reduce wind erosion in agriculture.

4.3.5 Ecology and economic effectiveness

In order to grasp the above question about the antagonism of environmental and economic effectiveness, "important theoretical questions of political economy have to be solved" (Harnisch 1978, p. 60). Apart from determining the socially necessary expenditure of energy required for the reproduction of natural conditions, this includes, among other things, determining the nature of the energy consumed. Whether energy consumption is productive or unproductive is of strategic importance for environmental policy. This question was already referred to by Mottek (1972). The view, predominant at that time, defines environmental protection as "extravagance", which is in conflict with the logic of competition of world markets, and should therefore be avoided (Grundmann/Stabenow 1971, p. 1783).

> "The different opinions are expressed in Marxist literature in the following propositions: (i) The energy expended for the elimination of environmental damage is not productive work, and the means for it have to be taken from national income. Owing to this, the costs are of the same nature as the costs for social consumption. (ii) The energy expended for the elimination of

environmental damage is productive work, and the costs have to be added to production costs. Consequently, e.g. plants for the purification of water and air are an integral part of fixed capital." (Paucke/Kroske 1976, p. 62).

With reference to Marx, the first opinion claimed that natural resources exist without human assistance, have no value, and therefore cannot produce any value. After having given a definition of "productive work", the main representative of this opinion, Köhler (1974) therefore argued that environmental protection does not make socialism richer in material goods (ibid. p. 886). He confirmed the opinion that nature is valueless and accused the opposite position of having "scientifically relapsed into the time before Marx" (Köhler 1976, p. 62). This opposite position denied that we can still speak of the worthlessness of natural resources. Under today's conditions "natural resources without capital investments are dwindling" (Paucke/Kroske 1976, p. 62). This opinion is shared by Streibel, who emphasised that the life cycle of a product (what he called "course of production") is in principle not concluded until the *status quo ante* has been re-established. Accordingly, environmental production and environmental management belong to the course of production. Thus these activities are productive work (Streibel 1975). This notion results in the conclusion that environmental protection is not a strategy of repair, but must be developed as a part of production and consumption themselves.

4.3.6 Critique of technology and productive forces

The following authors have addressed the problem of production and the system of productive forces at the level of the relationship between man and nature. Most of the authors quoted so far regarded environmental problems as a negative legacy which capitalism had left to them. The following quotations show the commitment and the radicalism of the critique of the socialist system of productive forces. As early as 1970, Gudoznik pointed to the tendency that "nature as a direct means of existence for man is being destroyed as his own 'inorganic body'". From this he derived the "urgent necessity to change the contents of work" (Gudoznik 1974, p. 238). Pletnikow put this in more drastic and more concrete terms when he said:

"We do not have the right to forget about the present when we are talking about the future. Not tomorrow but today must we stop the sell-out of nature, we must accomplish a careful, truly humane attitude towards natural riches, as one of the most elementary norms of morale and justice." (Pletnikow 1976, p. 156ff.).

For Bittighöfer et al., it was absolutely "impossible to continue to pillage the natural environment of man according to convention and on an increasing scale with no consideration for coming generations" (Bittighöfer et al. 1972, p. 66). "Changes in the ideological attitude of many a leader and working man towards the cardinal problems of the relationship between man and nature" were considered to be a necessary remedy (Paucke/Streibel 1980, p. 421).

Paucke and Bauer even talked about "defects" in the current technological structure of production. If retained unchanged, these defects would have still more negative effects and could eventually lead to the exhaustion of the sources of economic growth (Paucke/Bauer 1980a, p. 204). Defects imply problems, which might result from methodical breaches of the rules, from complicated regulations, from a present lack of scientific and technical knowledge, or from problems for which no solutions exist yet. The major contribution to environmental economy by Roos and Streibel argued similarly that a "social economy of natural resources" should be developed, naming its principles, starting-points, and first examples (Roos/Streibel 1979, p. 199). The authors also pointed to the necessary change of the population's habits of consumption (ibid. and p. 259) taking up the postulate that mankind as beneficiary of the earth has to leave it to "the following generations in an ameliorated state as *boni patres familias*" (Marx 1976b, p. 784).

4.3.7 Environmental science and practice

The scientific conceptions were, as a rule, subject to political and practical limitations. Thus, of course, certain subjects (e.g. nuclear energy) were ignored. At least formally the basis of all argument was the prevailing understanding of the State and the economy, which, as it developed into a mere stereotype, weakened every scientific debate. Consequently, there were hardly any further contributions during the 80s. The analysis here is thus limited to those works and papers that were presented during the 70s, a time of relatively greater publishing freedom. Some additional publications from the 80s which reflect the state of environmental research in particular areas are included (Richter 1981; Richter/Aurada 1984; Fiedler 1990; Busch/Uhlmann/Weise 1983; Graf 1984; Heinrichs 1987).

The theory of environmental policy was neither controlled nor stimulated by environmental policy in practice. Only very restricted reports on practical experiences were available. Nevertheless, it can be shown that the described theoretical environmental concepts virtually

had the same approach as the discussions in the West, with the exception, of course, of data handling, public response and the perceived scope of the problems. The following causes of environmental problems can be distinguished:

- environmental problems as breaches of the rules of an otherwise well-functioning planning by the State (market and State failure are analogous);
- environmental problems as an economic problem of allocation (concept of social costs; internalising of externalities);
- environmental problems as losses in terms of national economy (environmental protection versus jobs);
- environmental problems as a problem of the relationship between man and nature (critique of growth).

When the entire range of approaches to environmental problems is taken into account a radical change in industrial growth must also be considered among the options of. As was mentioned several times, the last-named conceptions never became relevant in practice in the former socialist countries. Even in scientific discussions they were not deeply analyzed. This was caused by the political strategy of self-isolation of the state and of immunisation against any conception which questioned the status quo of power. In this respect these conceptions hardly found their way into the practical environmental work of groups belonging to the churches and non-governmental associations (Behrens/Benkert 1991).

It is a characteristic of the sketched approaches, that environmental problems are viewed in their entirety and not split up into different media and specialised administrative responsibilities. The method apparatus of analysis fits "environment" per se into the conditions and strategies of social and economic development. Environmental practice though – where it came to fruition at all – did not follow this theoretical approach. Rather it realised partial solutions and shifts of problems according to technocratic patterns. Due to political constraint there was no considerable development of the discussion in the 1980s. During the period of decline of the former GDR possibilities to take action or to publish were limited (Paucke 1992).

5. A new approach to environmental policy. An evaluation

5.1 Legal and political approach

5.1.1 Environmental legislation in the transition period

The economic and social transition of the GDR does not represent a model which could be followed by other countries. The political precondition of a divided Germany, the high speed of transition, and the incurred costs for the growth in real wages and consumption are unique. The unification process was speeded up by West German politicians and led to the accelerated duplication of the West German economic system (currency, price system, legislation etc.)(Cornelsen 1992; Nuti 1992). However, the economic results of this system in East and West Germany are very different. In terms of economic growth, unemployment and real private income there are still remarkable differences and economic figures show that these differences increased after 1990 (Heine 1991a; Altvater 1991; Brake 1992). These figures reflect the basic elements of the economic transition in the former GDR.

In terms of environmental policy, the transition is part of the political, economic and socio-political efforts to catch up with the West German level of productivity, standard of living, and policy making. The legislative steps taken cover the whole realm of available measures. The most important measures adopted are:

- Comprehensive Environmental Law of the GDR of July 1, 1990 (GBl. 1 No. 42, p. 649).
- Agreement on the creation of a monetary, economic, and social union between the Federal Republic of Germany and the GDR (International Treaty, *Staatsvertrag*) of June 30, 1990.
- Agreement between the Federal Republic of Germany and the GDR on the establishment of the unity of Germany (Treaty on Unification, *Einigungsvertrag*) of August 31, 1990.
- Principles of ecological cleanup and development in the new Federal States (*Eckwerte der ökologischen Sanierung und Entwicklung in den neuen Ländern*), programme set up by the Federal Minister of the Environment, Nature Protection, Reactor Safety, Bonn, November 1990.
- Declaration on "Environmental protection in unified Germany", of the Conference of Ministers of the Environment of the Federal Government and its Federal States of November 22 and 23, 1990.

- Administrative agreement between the Federal Government and the Federal States for the realisation of the immediate environmental programme as part of the federal project of "*Aufschwung Ost*" ("Upswing East")(*Verwaltungsvereinbarung*) of May 17, 1991.
- Law on clearing of impediments to the privatisation of enterprises and on promoting investments (*Gesetz zur Beseitigung von Hemmnissen bei der Privatisierung von Unternehmen und zur Förderung von Investitionen*) of March 22, 1991 (BGBl. I, pp. 766-789, v. 28.3.91).

With the agreement between the Federal Republic of Germany and the German Democratic Republic on the establishment of the unity of Germany, the Treaty on Unification, the legal requirements were created for the application of federal environmental regulations in the States of the former GDR. The term regulation refers to all measures adopted by environmental authorities either on the federal level or on the level of the five new states. The basis for these regulations was established on July 1, 1990, in Article 16 of the International Treaty on the creation of a monetary, economic, and social union as well as in the Comprehensive Environmental Law of the GDR. In accordance with the first International Treaty, the Comprehensive Environmental Law of the GDR came into force on July 1, 1990 (GBl. 1 No. 42, p. 649). It founded the German environmental union, striven for by the first International Treaty. With this law the GDR took on federal environmental law almost in its entirely. At the same time most of the regulations of the European Community concerning environmental law became indirectly applicable in the GDR and, afterwards, in the new *Bundesländer*.

Taking into account the existing pollution, the state of industrial plants, and the state of the administrative structure in the GDR, general and subject-specific regulations of adaptation allowed for temporary deviations from federal standards. For example, as far as regulations on industrial emissions are concerned, new plants must completely meet the high demands of the federal law (*Bundesimmissionsschutzgesetz*). The existing air pollution, though, may be an obstacle to these investments in the form of new plants. The emission limits and clean air standards currently valid under federal law may already be exceeded by the existing pollution. In order to make new investments nevertheless possible, the Comprehensive Environmental Law permits new plants on certain conditions even in high pollution areas, if a clear decrease in total pollution can be expected in the foreseeable future. Deadlines for the reconstruction of old plants are scheduled. In order to bring the old plants up to the current state of technology, the deadlines for emission

reductions (*TA Luft* and the *Großfeuerungsanlagen-Verordnung*, clean air manual and Decree about large combustion plants) are prolonged for one year, as far as there is no need to take immediate measures in order to protect against health hazards. Furthermore, compliance with EC-drinking water standards is suspended. In addition there is an exemption from liability for environmental damage at old plants.

On July 26, 1990 the Federal States of the Federal Republic of Germany decided on an administrative agreement on the basis of Article 16 of the first International Treaty to bring into force the Comprehensive Environmental Law. This agreement was formally fixed and enlarged by the Ordinance of May 17, 1991. They both provided extensive help and support for the new East German administrations to be built up in the five new *Länder*. This support was given to all political branches, not only to the environmental departments. It comprises both administrative consultation as regards siting and permitting procedures and direct transfers of work forces and technical equipment.

With effect from October 3, 1990 the GDR joined the Federal Republic of Germany according to Article 23 of the *Grundgesetz* (Constitution, Basic Law) of 1949. Prerequisites and consequences of this joining are settled in the Treaty on Unification, signed on August 31, 1990.

5.1.2 Targets and timetables

With reference to Article 16 of the *Staatsvertrag* and to the Comprehensive Environmental Law, the Federal legislator is called upon "to protect the natural living conditions of man in accordance with the principles of precaution, of the polluter-pay-principle, and the principle of cooperation, and to support the unity of ecological living conditions on a high level, at least however on a level, which has been reached in the Federal Republic of Germany".

According to fundamental federalist principles of the Constitution, programmes for environmental cleanup and development should be drawn up giving measures for the protection of the population against health hazards of prime importance. The already mentioned "*Eckwerte*" paper provides a concrete timetable for this target. It claims to achieve the goal of "high-level" – ecological living conditions by the year 2000. It names the goals, instruments, and means of financing, as well as the initial steps to be taken. Essentially, the paper confronts environmental policy in the new Federal States with the following tasks. It should be

noted that these tasks are similar to those set up as the baseline of environmental policy in West Germany by the *Bundesregierung* in 1976 (Bundesminister des Innern 1976).

1. The immediate abolition of the sources of danger which are damaging to health, and safety precautions against further dangers.
2. The specific reduction of damaging components in the water and the soil, in nature and landscape.
3. The protection and the development of the existing potentials of nature.
4. The systematic reconstruction of production plants and of facilities for waste management.
5. The environmentally oriented rebuilding of towns and villages, of the economy and of the infrastructure.

The Federal Government's demands in connection with environmental recovery are high. According to the Federal Government

> "the system of market economy can prove once again,
> - that economic stability can be achieved without jeopardising natural living conditions,
> - that economic growth on the one hand, and environmental pollution, use of energy, and exploitation of resources on the other hand can be separated from each other and,
> - that the ecological agreement for worldwide partnership concerning ecological security are not a utopian dream but a realistic vision." (Eckwerte, 1990 p. 19).

Following the Federal Government, the environmental cleanup and development in East Germany signals the chance to overcome the serious environmental problems in Eastern Europe. To my mind, this notion and the way environmental policy praises what is called the system of market economy are clearly overdone. The full picture of success and shortcomings of environmental policy would present a more reasonable and modest interpretation.

In this context there is another issue worth mentioning: the linkage between restitution of private property and environmental cleanup. The *Treuhandanstalt* (THA) in East Germany was founded in March 1990 and reshaped during the unification process. It is a public institution under the governance of the Federal Minister of Finance. Its task is to privatise state-owned property, facilities and real estate. In January 1991, *THA* had up to 10,000 enterprises in its ownership. Among the crucial points of privatisation (legal aspects, performance, restitution vs. compensation) there is also one point strongly related to environmental

issues. When *THA* comes to assess the value of an enterprise, the environmental burden should be taken into account in order to figure out the adequate price for the property. Cornelsen (1992) valued *THA* property at around 200 billion DM. Obviously, the environmental burden, especially the contamination of land, may reduce the value drastically. The regulation on liability release is an attempt to speed up privatisation. The release intends to facilitate real estate transfer and the sale of industrial property. The state relinquishes the right to hold private landowners liable for cleanup costs. The mechanism of liability release can be triggered by an application of both the new or old landowner. The release is supposed to provide sufficient information on the hazardous situation so that interested parties can take environmental damages into account. It should serve as an incentive to provide a first check and detailed assessment of sites that are presumed to be contaminated. The regulation foresees that in the case of a positive decision, the state takes over the financial responsibility. The decision may also impose some conditions concerning further investigation of the site (Wolf 1991).

After setting up the above mentioned regulations forming the framework of environmental policy, there were some further regulations that fine-tuned environmental policy in those areas that were seen as impediments to the announced economic recovery. The Law on the Clearing of Impediments to the Privatisation of Enterprises addresses problems of implementing the privatisation of former state-owned property. It mostly deals with the complicated legal impediments to the restitution of private property and for example enables *THA* to accelerate decisions and to provisionally install new property rights. Another aspect of the law is the accelerating of the procedure to get new facilities and for example highways authorised. It shortens the siting procedure by introducing the new concept that once the German *Bundestag* decides that a particular highway is needed, this decision cannot be challenged in later administrative stages of planning and siting. Before this regulation, those instances were required to check whether the planned object was needed at all (*Bedarfsprüfung*). The right of the public to participate in the planning procedure is also reduced, and the public's right to file lawsuits is restricted.

5.1.3 Issues of environmental enhancement and cleanup

The facts and findings on the state of the environment are the starting point for any measure aimed to enhance, cleanup and develop the

environment. These measures will face financial and technical constraints, political opposition, social inertia, and other obstacles that may make sense in terms of economic growth, industrial policy, and job creation but not in terms of environmentally sustainable development. However, administration and business in the former GDR might now distinguish what can be solved from what (at least currently) cannot be solved and go ahead with an approach to environmental cleanup that may also be a key issue in economic development.

In this context the momentary West German strategy for environmental enhancement comprises the whole set of political, economic, scientific and social measures to address the environmental issue. It is more or less "business as usual" for the performance of western environmental policy. It entails as core-elements:

- the installation of state-of-the-art end-of-pipe-technology as additional environmental equipment to existing industrial facilities (like waste water treatment plants, exhaust filters, waste treatment and incineration facilities, sewage sludge treatment facilities etc);
- the challenging of the state-of-the-art industrial procedures by setting emission reduction goals and banning certain substances;
- managing land use;
- setting up waste management in order not to allow "pollution havens" or restricting those already in existence;
- tracking the process by monitoring the environment;
- improving the policy making process, supporting environmental concern and keeping the public informed.

Admittedly, this is a very rough characterisation only aiming to point out that there ought to be another set of measures that directly address environmental cleanup because the actions do not address past environmental abuses. It is essential to clearly establish the difference between enhancement and cleanup strategies. While the term enhancement more or less addresses the whole set of environmental protection activities such as avoidance strategies, treatment and disposal of residues, filter technologies, recycling etc., the term cleanup refers only to the handling of existing contamination. Assuming that enhancement policies are successful in a certain region, this region becomes cleaner in terms of air pollution, food chain etc. But nevertheless, it might well be the case that there remain some left-overs in terms of contaminated soil and groundwater. This ought to be addressed by a cleanup approach. According to the Council of Environmental Advisers (1989, p. 18), cleanup and remedial action on

hazardous waste sites "involves the execution of measures by means of which it might be ensured that no danger to the life and health of the human population and no danger to the living and the inanimate world emanates from the abandoned hazardous site after remedial action in connection with the prevailing or planned form of utilisation for the site". Performing the cleanup requires a special set of both instruments, policies and technological solutions (such as soil washing, incineration, thermal evaporation, special excavation techniques, biological treatment etc.). Cleanup deserves a specially designed political and legal approach within the framework of environmental policy.

Even a profound policy analysis of what can and should be done in Eastern Europe funded by the *UN Development Programme* underestimates the difficulties involved in this task, claiming that:

> "past environmental abuses can also be addressed by means of the actions already outlined (which aim to guarantee a sustainable development of future industrial and social activities, G.B.), provided that there is flexibility in obtaining and utilising resources and that the priorities for the use of these resources are set in a rational manner. Difficult issues such as the liability accruing to new owners of contaminated sites will have to be solved as a matter of priority and appropriate strategies and tactics for necessary remedial actions should be defined and adopted." (The Zaborow Declaration, 1991).

Environmental cleanup should clean up soil and groundwater contamination up to a level which allows further usage of a given site. This would entail, again without going into detail, the following crucial points which resemble the regulatory approaches in some of the EC Member States and the USA:

- setting up a strategy of emergency response;
- looking for surveying and prioritising contaminated land, especially waste landfills or dump sites, industrial facilities, industrial residues and areas of agricultural, military, and railway use;
- designing and performing cleanup, which may consist of treatment of contaminated material or disposal or a restriction on landuse;
- addressing the issue of liability accruing to new owners of a site and the enforcement issue;
- finding a mechanism to raise money from potential polluters and to reimburse money in case the state spent it in advance as regards particular sites;
- deciding on "how clean is clean?" and, therefore, coming up with regulative environmental soil standards for the reuse of sites;
- communicating environmental risks and its remediation to the people;

- setting up a research and industry policy aiming at developing innovative cleanup technologies.

5.2 Performing environmental unification

5.2.1 First measures and environmental costs

In the context of current economic programmes concerning "*Aufschwung Ost*" ("Upswing East") investment is also provided for environmental protection. Starting out from the outlined initial conditions, the emphasis is on establishing an infrastructure of waste management. Thus, as the Federal Minister of the Environment declared, 3.6 billion DM will be invested in the new Federal States in order to build six soil treatment plants, five incineration plants for hazardous waste, one centre for the abatement of warfare agents, ten hazardous waste dumps and two to three underground dumps. The financial means should be provided by a new tax on waste, amongst others. Further tasks will arise with the construction of waste water purification plants, and with the setting-up of filter and purification facilities for industrial plants, and especially in the agricultural protection of the environment. Up until now these measures are mere political announcements.

Programmes now underway set up in the German-German agreements on the environment spent an amount of several hundred million DM on the environmental modernisation of industrial plants in 1989/90. These are only selective measures though. In 1990 environmental projects were sponsored to the sum of 671 million DM. In 1991 and 1992, the Federal Government put 400 million DM for immediate measures for the protection of the environment at the disposal of each of the new Federal States. An additional amount of 250 million in 1991 and 330 million in 1992 was made available for investment to reduce environmental pollution. Another 12 million in 1991 was supplied for professional consultation in permitting processes. The job creation measures were also applied to environmental services (Wieczorek 1991). The committee of the European Community promised 40 million DM within the Phare-program, which should mainly be used in the Dresden/Upper Elbe valley-area.

For basic research on the environment in the main polluted areas and for other research, the Federal Government provided an amount of about 25 million DM. The Federal Minister announced that environmental technologies, in particular cleanup technologies, will be

applied in the highly contaminated area of Leipzig/Bitterfeld. Additionally, the Federal Minister for Science and Technology is setting up an environmental research center in Halle/Leipzig (Wieczorek 1991).

5.2.2 Implementing new instruments? Programmes for environmental cleanup and development

The Treaty on Unification correctly indicates that environmental recovery might not progress through case by case decisions to introduce certain emission control measures. In Article 34 the Treaty on Unification (*EVertr*) (BGBl.II, p. 889) determines, that "in the context of the regulations of the Basic Law concerning liability, programmes for ecological enhancement and development have to be drawn up". Such an instrument had not been used yet in the former Federal Republic of Germany.

The following example gives a sudden insight into the ambivalence of environmental measures and the fact that a comprehensive weighing up of the measures is required: if brown coal mining in the *Niederlausitz* was drastically reduced and with it the groundwater catchment, the river *Spree* (one of Berlin's drinking water supplies) would lose up to 60% of its water when there is low water. The discharge of effluents between the *Lausitz* and Berlin, however, would remain unchanged and would turn the rest of the river *Spree* into a concentrated sewer. Berlin's drinking water supply would be reduced. Thus, what appears to be a sound environmental measure may turn out to cause adverse follow up impacts.

The drawing up of programmes for environmental cleanup and development was first tackled for the areas of *Mansfelder Land*, *Halle/Leipzig*, the *Niederlausitz*, the Baltic Coast and the Upper Elbe Valley. Some of the studies are already finished (TÜV Rheinland 1991, Arbeitsgemeinschaft TÜV Bayern und L.U.B. 1991), the work on others is in progress.

Methodically these programmes are mostly charged with the collection and assessment of existing data on the environment. It is problematic that no new data are being collected. But extensive measuring tests would not be practicable (TÜV 1991, p. 5ff.). It must be emphasised that the situation of radical social and economic change has meant that many employees in such institutions and in industry lost their jobs and social security. This has intensified the uncertainty concerning data. Additionally, the dynamic and still unchecked development in the economic field considerably impedes the understanding of the situation

and lends a great deal of uncertainty to prognoses concerning future development. Under these uncertain peripheral conditions a high degree of specification of the tests does not necessarily lead to better results.

Comprehensive planning of environmental measures will also be required when it comes to the submission of sanitation documents to the EC as far as the (non-) compliance with the EC-drinking water guideline is concerned. A first report on this issue was forwarded to the EC in early 1992. This report detailed the extent of the sanitation task and draws some conclusions on what should be prioritised. The amount of money needed to reach compliance with drinking water standards is no less than 30 billion DM (Maβnahmen 1992).

5.3 Evaluating the new approach

5.3.1 Environmental transition as a large scale experiment

Never before has an attempt been made to restitute environmental degradation within a country in such a short time. In this respect we appropriately speak of a "large-scale experiment of environmental recovery". Its political and economic practicability may be judged differently referring to the estimated economic development and the feasibility of environmental cleanup. But we must emphasise that the large-scale experiment has started, and that it actually duplicates the West German blueprint of environmental policy. There is no doubt that during the unification process there was virtually no time and no need to elaborate something different because of the minor role the environment played in comparison with the "big choices" in international policy and economics, and the political decision to duplicate more or less the whole realm of West German law that, of course, also dominated environmental policy.

Any evaluation has to take into account the political issues that currently attract long sought for changes. In terms of environmental policy options one may distinguish between the following:

Environmental benefitting from the economic decline. The breakdown of enterprises and the shut down of plants cause the quickest relief for the environment. The decline will probably lead to an industrial output of the new states that is only one fourth of the industrial production capacity of the GDR in 1989. Apart from a few exceptions, however, these shut-downs are not justified by environmental policy but are linked with the economic crisis. The Treaty on Unification though gives

relatively short deadlines for the adaptation of the plants (e.g. air filters and waste water filters). For new plants the West German requirements are in force. Although the deadlines for adaptation are not really enforced everywhere, in principle they accelerate the structural change. Given the state of enforcement and the overall East German economic and social framework there is no danger that high environmental demands lead to the depression of downgraded regions.

Environmental protection by eco-technical waste management. The investment mentioned above must be considered part of this. It remains an open question whether the listed plants are sufficient for a complete infrastructure. But we must emphasise that it is a matter of urgent necessity, contrary to some reservations coming from alternative ecological policy, criticising the technological orientation of the measures. Efficient waste management is needed, no matter how far one gets with precautionary measures, which are of course also necessary. Measures for environmental protection in the industry of East and West Germany and the environmental recoveries signify, as a rule, an increase in the quantity of the remaining substances that need to be disposed of.

Environmental recovery of contaminated soil and water as well as of destroyed landscape. This is an extremely costly problem which can only partly be solved and only in the long term, on grounds of ecological limits (see below). To the about 100,000 suspected contaminated sites we have to add another 60,000 in East-Germany. The contamination goes far beyond the scope of what is so far known in the West, concerning both its type and extent.

Protection of nature. The largely ecologically intact natural areas in parts of East Germany permit and demand the designation of nature reserves as national parks and biosphere reserves. By doing this, environmental policy is supposed to address the crucial point of zoning areas to be protected, restricting land use and economic activities on the one hand and on the other to come to an ecologically sound compromise about tourism and the future way in which people make their living in those areas.

It is the aim of this evaluation to question whether this approach will be able to fulfill the targets and timetables as announced by politicians.

5.3.2 Duplicating advantages and shortcomings of the West German environmental approach (blueprint)

In order to wrap up the legal and political framework of transitional environmental policy it can be stated that the environmental approach is mainly a duplication of the West German legal and administrative approach. The duplication contains some deviations as regards (i) the deadlines of industrial compliance with clean air regulations, waste water treatment and drinking water standards, (ii) the liability of private landowners and industrial operators for contaminated sites, (iii) a slight shift of administrative responsibilities in favour of the federal level, (iv) the reduction of participation rights of people and non-governmental organisations.

Obviously, it was impossible to transfer the whole "regulatory reality" of West German environmental policy, which very much relies on an experienced administration and a bedrock of scientific and consultancy know how (sometimes, with justification, also seriously criticised for its hegemony and mainstream-thinking). The East German *Länder* are currently building up an administration and under "normal" conditions this takes quite some time, let alone the time that is needed under budget restrictions and the social situation of "*Stasi*"-aftermath and east-west-misunderstanding in a widespread atmosphere of (Eastern) bitterness and (Western) arrogance.

Thus, the duplication of the blueprint is a selective one and its practical message is more or less a ranking of environmental issues that greatly emphasises the need to get new investors to comply with standards of environmental technology (clean air, waste water). The issue of cleaning up the existing damage is clearly given a low priority. This is, so to say, a first things first approach giving preferential treatment to those environmental concerns that can possibly be solved by (i) introducing western technology standards, (ii) transferring technology, (iii) introducing western consultancy firms into the regional and local decision making system in order to streamline the performance of environmental management.

The approach does not go beyond previous West German environmental practice. Therefore, one might call it a "business as usual" approach. Whether this practice is suitable for such a type of problem and can serve as a model for Eastern Europe, as the Federal Minister claimed (see above), must be doubted, in view of the usual deadlines for planning, departmental egotism, and the factual deficiencies resulting from the problems with for example environmental cleanup, which were not be solved in the West either. The advantage

of this approach, however, is that it works. That means that there are reliable partners, a proven legal basis, state of the art technologies and that there is a market to enter. Making the blueprint approach happen has great political support. Nonetheless, the state of the environment is not improving rapidly – apart from the benefit derived from the closing down of industry. The establishment of environmental authorities in the new States and municipalities shows the continuing existence of considerable deficiencies.

Of course, the blueprint approach ignores all the political concepts and instead tries to introduce an environmental tax system, a new industrial policy backing up environmental goals, and other political ideas which were debated intensively at the beginning of the 1989 *Bundestag* electoral campaign. Now, these concepts are partially transferred to the situation in the former GDR (Belitz et al. 1992, Belitz/Blazejczak 1992).

5.3.3 The liability issue

The issue of liability accruing to new owners of industrial property is not really being solved. The Treaty on Unification and follow up regulations, introduce a temporary suspension of the polluter-pays principle. The idea is to facilitate new investment by assuring the investors that they will not be held liable for environmental damage caused by their predecessors. This exemption anticipates those problems which would have arisen should West German liability have been applied in East Germany. The liability exemption does not work in a satisfactory way. Wolf (1991) reports that a statistical survey, dated October 16, 1991, counted 2200 applications for liability exemption. As accumulated applications often exist the report estimates the real figure at that time to be at least 2800. In *Mecklenburg-Vorpommern* there are 2-5 new applications per day with a still increasing trend. The same survey records only 15 positive and 42 negative decisions. Obviously, this is far too few to show a satisfactory performance. There are mainly two reasons for this poor performance. First of all, there is the fact that the State has to decide on the application for exemption by assessing the environmental risk and taking over the costs of investigation and cleanup. The administration may come to a certain trade off with the investor as far as investigation costs are concerned. But the bulk of the expenses stay with the State. In the face of the well-known budget restrictions this cannot work. There is no federal funding mechanism. Some of the old States have set up their own funding mechanisms which

differ from each other and are not applicable to the situation in the new States. West German States also complain about the lack of federal funding as regards the high costs connected with the cleanup of military sites and some extensive soil contamination.

Second, there are big technical differences in cleanup procedures in West German States which complicates the situation. Although there are some comprehensive information brochures which summarise the most common procedures, many of the technical and methodological requirements are also a challenge to well educated administrations.

Therefore, a federal regulation is needed concerning the performance of site (mostly soil) investigations and all other elements of cleanup decision making including the funding aspect. Without this the exemption regulation will not succeed. In other words, it will remain a good idea with no practical support. It is a one sided approach which needs to be linked in with general overview regulation.

5.3.4 Estimating the costs of environmental transition

The Munich *IFO*-institute for economic research comes to the conclusion that by the year 2000, an investment of 211 billion DM will be required for environmental protection. 50% is taken into account for expenditure on waste water disposal, about 17 billion DM are allocated to the drinking water supply, 34 billion to waste management, 22.5 billion to measures for the purification of the air. Only 10.6 billion are calculated for priority measures for the assessment of danger and the recovery of contaminated sites. These estimates will not be examined here in detail, although the figures for the drinking water supply and the recovery of contaminated sites provoke opposition. Apparently, the recovery of contaminated sites is considered a problem of minor importance. If, however, one compares the situation in East Germany with the West German situation, several dozens of billion DM will be necessary by the year 2000. Concerning the amount of money needed to guarantee that the drinking water meets the quality standards set by the EC guideline, experts are already adjusting the figure up to 30 billion (*Die Zeit*, 21.2.1992, p. 31).

According to the environmental association *BUND*, it does not matter for the present political assessment of the need for investment whether the estimation of the costs amounts to about 200 billion or to up to 500 billion (as total costs). In any case the mentioned sums clearly exceed the limit of the total which can be raised with the presently given political instruments. This will still be true, if a considerable part of the

expenditure on the infrastructure of waste management is raised by the private economy.

5.3.5 Building up the administration, introducing new instruments

State administrations have insufficient personnel and technical equipment, despite all the support from the old States. Growing into a complicated new legal system impedes the implementation. Similarly the prerequisites (State laws) for clear arrangements concerning competences are in part missing.

A lot of political friction also occurs in the old Federal States, but in the new ones it is extremely high. Responsible for this is on the one hand the old regimes's antiquated way of thinking. On the other hand, and probably predominantly, deficiencies on the "Western" side prompt conflict. Often a greater appreciation of the autonomy and the self-esteem of the new Federal States and their citizens is demanded, not only concerning ecological policy. *Platzeck, Brandenburg*'s Minister for the Environment, makes another point. According to what he noticed in the administration's day-to-day decision making, East Germans are more inclined to search for compromise than West Germans are. He also complains that a lot of the work force was ineffective as it was dealing with cases of contaminated soil which might not be solved at all. There was a commitment to find answers to all questions regardless whether there in fact were any. According to him it would have been better to make some hard choices in order to concentrate on issues promising fast enhancement and leave those difficult cases unaddressed (Platzeck 1991).

In 1990/91 the Federal Government took over some tasks which are normally within the responsibility of the *Länder*. But at that time there were not yet new *Länder* constituted. This slightly shifted administrative responsibilities to the federal level as far as data assessment and processing and the assessment of implementation of technology was concerned. With the *Länder* coming into existence this balance has altered again. The old *Länder* watched this re-allocation with scepticism as a result of the new aversion to centralism. However, it may be doubted whether this is appropriate. The West German environmental law with its strongly federalist organisation often leaves remarkable legal and administrative scope for implementation to the States. Therefore, in the West German states the quality of the fulfillment of requirements concerning environmental law fluctuates greatly from State to State and from subject to subject. In the face of comprehensive environmental

targets and timetables and given a rather homogeneous structure of environmental problems, it appears to provide additional constraints to environmental restoration.

The Treaty on Unification had already commented on the effect of potential federalist constraints by introducing the idea of comprehensive ecological cleanup and development programmes. In fact, such programmes could definitely be of use in some parts of West Germany as well. But the distribution of responsibility between the Federal Government and the Federal States sets narrow limits to this. Against this background, the phrasing of the Treaty on Unification "in the context of the regulations of the Basic Law concerning responsibility" (in what other context?) must be judged as a mechanism whereby Federal States might protect themselves against a Federal Government which perhaps gained strength through the process of unification. An environmental perspective would even require the enlargement of such programmes and turn them into feasibility plans for environmental cleanup to be integrated in the framework environmental planning (see Kloepfer et al. 1991).

The need to comply with EC environmental standards once again brings the issue of new instruments onto the agenda of environmental policy. Especially in terms of drinking water quality it appears to be very difficult to meet the EC requirements within the given timetables. First it was thought that compliance could be achieved by the end of 1991. This turned out not to be feasible. Full compliance will not be feasible before 1995. Thus, it will be necessary to work out and submit a sanitation plan to the EC. A sanitation plan on drinking water has to address both the question of technology and investment, as well as the issue of land use and the impact of agricultural practices on ground- and drinking water.

5.3.6 Is the general objective attainable?

With regard to the general objective, the study on ecological cleanup and development in the area of *Halle, Leipzig, Bitterfeld* draws the following conclusion:

> "In view of the administrative structures in the new Federal States, which are not by any means able to function fully, the enormous financial demand, and the limited capacity of engineers, building and equipment firms, which cannot be expanded as one likes – in view of all this, it appears to be extremely difficult to reach the Federal Government's objective, established in the Treaty on Unification, to create in the new Federal States by the year 2000 identical

ecological conditions to those existing in the West of the Federal Republic of Germany."

With regard to waste policy, the objective will "only be reached, if the duration of permitting procedures is graphically reduced". At present procedures take about 8-10 years including legal proceedings in the old Federal States (TÜV Rheinland 1991, p. 29 and p. 45). Furthermore a positive trend in the environmental industry as a branch of economic growth cannot yet be determined. The products offered and an analysis of the first available data on production statistics for East Germany from July 1990 onwards, show that these are mainly goods with a low and medium technical level, and that so far hardly any starting-points for innovative development can be recognised (ibid., p. 72).

This inside look at the process of environmental transition presents the message that the target is not attainable within the given timetable because of practical restraints. Additional to this finding there is another set of doubts whether this target sets an attainable goal at all.

The Federal and the State Ministers of Environment spoke of "difficult tasks and a great challenge", when they met in November 1990 for their first conference in the unified Germany. They drafted a "Declaration on environmental protection in the unified Germany". This declaration does not begin with news of political success or with statements, but with the following careful and rather sceptical phrase commenting on the task of the Treaty on Unification, "to support the unity of the ecological living conditions on a high level, at least however, on a level which has been reached in the Federal Republic of Germany".

Indeed, the Treaty on Unification is very demanding. The goal to create identical environmental conditions on a high level in all of Germany by the year 2000 (*Eckwerte*) means environmental recovery as a "large-scale experiment" with test conditions which have not been known so far. This is how the Treaty defines the task and timetable for environmental recovery. To evaluate this political task one surely has to go into the details of the implemented programmes. But before doing so, we will address the issue of the so-called ecological living conditions as such.

With the postulated "unity of the ecological living conditions" the Treaty on Unification offers a formula, which is obviously interpreted as "identical environmental conditions" in the political sphere. Nevertheless, seen from the view of environmental science it is factually a hollow phrase. There is no further investigation of what the phrase "ecological living conditions" actually means. Basically it merely suggests

more or less the working and living conditions of West Germany. The promised economic "miracle" must simply have an environmental dividend as its consequence, so it is assumed. Whether this is an adequate idea of the correlation between economic growth and environmental protection has to be doubted. Of course, certain "old" environmental damage will no longer occur in a modernised economic sector. But that says nothing about the modernised dangers involved in new industries. The following points critically comment on the objective.

In the Federal Republic of Germany there is no legally binding definition of what ecological living conditions are. For the economic conditions, binding indicators are available (gross national product etc.), however there are no objectives concerning the quality of the environment, which would have a similar significance. Furthermore, there are no scientific conceptions of objectives concerning the quality of the environment, supported by a majority: should one focus on the existence of endangered species (but within which territorial limits?), or on cancer rates (but with which significance in cause effect relations? and which cancer risk or rate is tolerable?) or should one take the forest die off figures? – or should one only rely on, for example, the number of waste water treatment plants and on the implemented state of the art technologies, or recycling efforts or the percentage of environment related expenditure of the gross national product? But what does all this say in terms of environmental quality?

The issue of adequate and comprehensive risk assessment was already mentioned in chapter 2.1. Again, it is an issue that deserves extensive scientific attention both from the social and natural sciences. For the time being, the Treaty-formula is nothing but a political statement that triggers an unsystematic cascade of demands and political actions. In conclusion, this appears to be what the formula was supposed to do.

The Treaty on Unification postulates the goal without addressing the discussion on the "quality of living" and "change of values", which went on widely in the 70s. With good reason the living conditions were at that time called "equal", not "identical". This was because it must be doubted, whether a "unity of the ecological living conditions" is at all possible. Ecological conditions are signified, as a rule, by great variety and differentiation, but not by unity.

Strictly and perhaps too sophisticatedly speaking, the Treaty's wording does not mention the things that we assume. It does not intend to say that the "unity of ecological living conditions" should be established, created or even striven for. It should merely be "supported". With regard to an exact objective this leaves the question even more open – according to the wording – than is thought at present.

In short, environmental unification is a general and vague concept in the sense of scientific evaluation. But in a political sense it provokes far-reaching expectations. By framing the transition via the blueprint it simply introduces the idea of a continuation of western policy styles. However, without introducing new appropriate instruments it will not live up to the expectations because the duplication of the blueprint does not address the western shortcomings nor the worse conditions in the east.

5.3.7 Ecological limits to environmental cleanup

The term environmental cleanup raises the hope of a restoration of the natural ecological conditions. In this sense, "environmental" is used to describe policy-related impacts of man's activities on nature, whereas "ecological" tries to focus on natural conditions and substance flows in a much more fundamental sense. Even if one disregards whether an environmental cleanup could be financed, from an aspect of scientific ecology it turns out to be an illusion in two respects. Nevertheless, environmental recovery is necessary to a certain extent – in spite of and bearing in mind its fundamental futility. This is not a contradiction.

There are environmental damages whose remediation factually enhances the environment. For example, contaminated groundwater can be purified by pumping in pure water and by pumping out polluted water and leading it to filter facilities. Some substances can be extracted from the soils together with the air in the soils. Under certain conditions soils can be "washed" in appropriate facilities. Within narrow limits bacteria can be used to get rid of pollutants in soils and groundwater. Finally, heavily polluted soils can be burned in appropriate plants.

The success of all these technological means to aid ecological remediation depends on a multitude of conditions. Care must be taken that the carrying out is compatible with the environment. This cannot automatically be assumed, only because the term is "cleanup of the environment".

Leaving the question of the economy of a measure aside, the limits to the feasibility of ecological recovery follow from the kind of and the extent of pollution. For example there do not exist any possibilities for the remediation of extensive pollution caused by extremely toxic substances in low concentrations. It is also possible, that a contamination which can be cleaned up in principle, for example of groundwater, changes into a contamination which can no longer be repaired with the common means. Thus, if one waits too long and the

pollutants are given the chance to spread, degradation of the soil caused by erosion and loss of organic substances etc. cannot be repaired. In other cases, as for example when the soils are contaminated with pesticides and manure, the leakage takes decades. Certain biotopes do not recover at all.

Even where cleanup technology is used in a reasonable way, as a rule, the full restoration of the natural state prior to the pollution is very rarely attained. At best only a hygienically acceptable state of second-hand nature is reproduced.

A second ecological limit to recovery results from a systematic consideration of the effort and purpose of a relevant measure. Assuming that contamination can be lessened with technological means, this still does not guarantee that the entire environment will be bettered. The purification of soils for example takes place in expensive industrial plants with a cost of about 300 to 1000 DM per ton of soil. The production of the plants demands material, energy, technology of processing and know-how, naturally being in turn sources of environmental pollution. The balanced calculation has not yet been made. We cannot rule out the possibility that ecological recovery on a large scale demands such technological means, which themselves cause elsewhere and at some other time severe (greater?) environmental damage, though just of a different kind: climate, earth's atmosphere, pollution of the water.

Certainly it must be emphasised that such an assessment, such an ecological comparison, is an extremely difficult undertaking. At the moment, it has only been carried out in the case of relatively easy subjects such as the comparison of plastic to paper bags or other life-cycle-analysis. Considerable methodical problems arise when the tested alternatives need to be distinguished and assessed in terms of different environmental risks, and often the necessary data is not available.

Technological recovery "solutions" are often preferred above environmental precaution. And this does not happen because the above mentioned methodical problem exists, but because cleanup technology is inherent to the economic system of the industrial production of goods. Therefore, for example in the passionate discussion about the pros and cons of refuse incineration, it is often ignored that during the production of certain goods more pollutants get into the environment than later during all the hotly discussed strategies of waste management. This means that the emission of certain pollutants could actually be reduced more effectively by intervening into the production than by improving waste management.

Despite this, there remains the requirement, that technological processes of enhancement have to be used, when dangers to human health and of environmental degradation must (and can) be avoided.

6. The way forward: a speculation

Reviewing the way forward in terms of environmental policy means to speculate on the basis of the two assumptions that (i) environment and (industrial) development are strongly connected, and that (ii) there is a need to rethink political concepts of unification.

Today, to some extent, the state of the environment is better than it was in 1989. This is true particularly for air pollution by SO_2. In terms of other parameters the situation is not as good. Market economy and transition are causing a lot of new environmental damage. This is associated with increasing motorisation, surface sealing, growing urbanisation etc. The way forward will bring improvements in terms of new innovative technologies and will introduce the "normality" of modernised high-tech environmental risks associated with the waste problem, the marketing of new chemical substances, with chemicals and heavy metals irreversibly entering the food chain and with the decline of natural resources. Additional "transition-induced" environmental damage will increase.

In the immediate future, the most effective enhancement will not result from environmental policy but from economic decline. The closing down of industrial facilities, changes in the layout of production and innovative investment are responsible for improvements in air quality, reduction in waste water discharges, and other environmental figures. What can be seen as good news for the environment is, on the other hand, bad news for social and political life in East Germany and, as a matter of fact, in Germany as a whole. Even important industrial leaders have recently discussed the danger of East Germany facing dramatic de-industrialisation with large regions becoming industrially desolate. Today, industrial net production is about 25% of the level it was in early 1990. Free competition has devaluated almost all industrial activity by newly structured eastern enterprises. Western products and industries drive out almost all eastern competitors. On top of this the latter have lost all their traditional markets in Eastern Europe. The East German gross product is only 7% of the German gross national product – and that with an East Germany covering 30% of the territory and having 20% of the population. About 150 billion DM per year are currently transferred from the West to the East. There is no end of

transfer payments in sight. This is what many people in the West look at with sorrow and with the expectation that they will be hit by budget restrictions, new taxes, or other redistributions of wealth. On the other hand, in the east the market economy has caused large scale unemployment.

In the every-day perception of people in the east there is a big difference between what they expected to happen when they voted for unification and what they are experiencing today in terms of the "disappearing" of jobs, of "their" TV and print media, theatres, museums, publishing companies etc. Almost the entire system of science and research facilities has been abolished or fundamentally changed by western managers. Frequently, unification is experienced as devaluation, political and moral *déclassement*, and sometimes, especially among intellectuals, as impoverishment, partly absolute, partly relative. Western managers, civil servants, journalists, and entrepreneurs are in some ways partially responsible for this notion. Bitterness is a widespread mood amongst people in East Germany. For sure, it has not yet reached the point that they want to rebuild the wall and the old regime. However, they are hurt by ignorance and arrogance, and by disparaging remarks and attitudes. The average western official, industry or media manager is believed to think little of the people in the former GDR, and to be trying to abolish what little remains of the self-esteem and positive identification of the East German people.

Against the background of this scenario of industrial policy and public opinion, the environmental issue seems of minor importance. However, the future development of environmental policy can only be explained and foreseen within the scope of this scenario because environmental policy depends on this political and economic framework.

The administration of environmental policy, the way environmental regulations will be enforced, and the regulative capacity (work force, organisation, "power") of East German institutions will be an issue of ongoing debate. Most probably there will be a lot of differences between what the new *Länder* set up and how they organise enforcement. For the next couple of years, the extent of these differences will not be much bigger than existing differences among the old *Bundesländer*.

In the years to come, one might expect a particular relationship between western and eastern environmental policy. Differences might increase. However, not environmental policy but general economic patterns will have the predominant influence on the state of the environment. As pointed out in chapter 5, the main idea of transitional environmental policy was to transfer Western environmental law to the

former GDR, with some slight differences. Today this blueprint approach is called into question by those people who ask whether the general political and economic approach to unification was justified. This notion definitely does not entail a demand for the re-establishment of the old regime, but it does express the desire to introduce a policy which approaches the special conditions in the new *Bundesländer* in a more appropriate manner.

On the other hand, transitional costs and transfer payments from the west to the east are leading to large scale budget restrictions. Generally, budget restrictions are commonly forcing limits on environmental policy. It is likely that leading western politicians will increasingly demand a reduction in environmental duties, the abolition of new environmental programmes and the less stringent enforcement of existing regulations. In this way, environmental transition in East Germany bounces back and changes what used to be West German, and is now German, policy.

It does not seem a realistic notion to assume that environmental policy will be able to influence big policy choices. However, there is a growing political notion which endorses in a certain sense a re-thinking of well-known political transition-concepts. As an underlying line of thought this notion focusses on some doubts as to whether the application of the streamlined "blueprint-solution" is a promising way to meet the specific needs of the East German situation. The key question is whether or not East Germany should be given a special position in German law-making and legal enforcement. In terms of the financial system and tax-money distribution, high ranking politicians have already demanded a special position for the five new *Bundesländer*. For the time being, "Bonn" still denies that such a need exists. Assuming that this political blockade will not last a very long time one should add that, as it looks today, the environment will not be among the first issues when it comes to a re-thinking of political strategies.

7. Summary

The transition in Eastern and Central European countries can be described as all political, economic and social measures necessary for the restoration of a sustainable economic growth that rely on private property, a free and partially state controlled market, competition, civil and administrative law and individuals acting within this system. The criteria of transition and development that are currently considered the most decisive one's are (without giving them any ranking): political stability and stable financial control, establishment of private property,

capital investment, economic growth, establishment of a market economy and external cooperation.

Among these criteria environmental issues do not play any role at all. If the environment is mentioned at all, then only as another restraint to economic growth. This may even be justified in order to achieve short-term success in the performance of these criteria. However, it is impossible to assure any sustainable social and economic development if ecology, and especially the environmental cleanup are simply deleted from the agenda of restoration. The following points must be taken into account:

- environmental risks may pose a serious threat to health and become an obstacle to further economic development;
- emergency response measures must be developed and a long-term cleanup strategy set up;
- an innovative cleanup strategy can have a positive impact in terms of creating people's self-reliance and in terms of industrial (re)development.

The design of environmental policy, especially as regards the compliance of new investment with standards concerning clean air, waste water treatment, drinking water and waste management, will determine whether environmental demands serve as an incentive to an innovative industrial policy or whether the demands are too high to be achievable and, thus turn out to contribute to the depression of downgraded regions. The design has to provide comprehensive targets and timetables in order to avoid separate point approaches.

Starting conditions for transition differ from country to country. While the GDR cannot serve as a model for economic transition in other countries some experiences in the field of environmental policy have worked well and others did not. It may then be worth drawing conclusions in regard to implementation elsewhere.

Chapter 2 summed up the people's perception of environmental policy during the time of the GDR's decline and unification. It examined the way in which an important popular demand was to become a subsidiary issue in unification treaties. Chapter 3 reviewed environmental risks as far as data are available at the time being. The compilation of empirical data on the state of the environment provides the key element for a full scale environmental analysis. Some of the key issues might be regarded as patterns of environmental decline in the whole of Eastern Europe. As an empirical baseline for political measures to come, this review pointed out which environmental risks

are already tackled by the environmental policy. It also highlighted further risks which are likely to play an important role in the future some of which are induced by the transition. The background analysis in chapter 4 provided a general idea of how the present environmental situation arose. It roughly addressed the political mechanisms and constraints of the old system as related to environmental issues. Chapter 5 pointed out the new political approach to environmental transition in the former GDR. The environmental transition was described as a duplication of the existing West German environmental regulations with some deviations and modifications. The paper first of all delt with the framework set up by the unification documents. It then emphasised the political targets and timetables for environmental transition and the legal and political implementation of key issues (new instruments, costs, liability etc.). Analysing the way environmental transition has so far been implemented, the paper showed a set of shortcomings both as regards the regulatory approach and as regards the administration of existing regulations. Finally, it was stressed that there are ecological limits to environmental cleanup which are neglected by political goals. The paper emphasised and supported the increasing political notion that the duplication of the West German policy approach does not fit into what is necessary in East Germany to find a way out of industrial decline, unemployment, and the generation of additional environmental damage. The paper underlined the need for more specific regulations, instruments and political approaches to promote environmental cleanup and the need to meet the requirements of the people in the former GDR.

References[1]

Adabaschew, I.I. (1977): *Tragödie oder Harmonie? Natur – Maschine – Mensch*, Leipzig/Jena/Berlin (DDR).

Akademie der Wissenschaften der Sowjetunion (Hrsg.) (1978): *Ressourcen und Wirtschaftswachstum*. Reihe "Probleme der modernen Welt", Nr. 11, Moskau.

Akademie für Staats- und Rechtswissenschaft der DDR und Minister für Umweltschutz und Wasserwirtschaft (Hrsg.) (1978): *Sozialistische Landeskultur und Umweltschutz*. Textausgabe ausgewählter Rechtsvorschriften mit Anmerkungen und Sachregister, Berlin (DDR).

Allumfassende Sicherheit erfordert eine wirklich internationale Zusammenarbeit. Rede von Eduard Schewardnadse auf der 43. UNO-Vollversammlung, in: *Neues Deutschland*, Berlin (DDR), 28.9.1988.

Altvater, E. (1991): Eine Chance für die Umwelt? Die Transformation der Gesellschaft der ehemalgen DDR, in: *Forum Wissenschaft, Zeitschrift des BdWi*, Marburg, Nr. 4/1991, pp. 8-12.

Arbeitsgemeinschaft TÜV Bayern und L.U.B. (1991): *Umweltsanierung des Großraumes Mansfeld*. Abschlußbericht zum F+E-Vorhaben i.A. des Umweltbundesamtes, Berlin.

Arbeitskreis Umweltschutz der Wirtschaftsministerkonferenz (1991): *Altlastenfinanzierung*. Bericht vorgelegt zur Sitzung der Wirtschaftsministerkonferenz am 3. u. 4. September 1991 in Kiel.

Autorenkollektiv (1978): *Die materiell-technische Basis des Kommunismus*, Berlin (DDR).

Autorenkollektiv (1986): *Landeskulturrecht*, Berlin: DDR-Staatsverlag.

Bachmann, G. (1981): Ökologie und Sozialismus. Eine Einführung in die in den sozialistischen Ländern geführte Diskussion über die ökologischen Perspektiven der Menschheit, in: *Blätter für deutsche und internationale Politik*, Heft 1, Köln: Pahl-Rugenstein.

Bahro, R. (1980): Sozialistische Alternative und Ökologie, in: *Materialien zur 1. Sozialistischen Konferenz (1.-4.4.1980)*, Konferenzreader, Kassel.

Bauer, A. und H. Paucke (1979): Einheit und Kampf zwischen Natur und Gesellschaft, in: *Deutsche Zeitschrift für Philosophie* (DZfPh), Berlin (DDR), Nr. 5.

[1] All references in German unless title in English.

Bauer, A. und H. Weinitschke (1973): *Landespflege und Naturschutz als Teilaufgabe der sozialistischen Landeskultur*, Jena.

Beck, U. (1986): *Risikogesellschaft. Auf dem Weg in eine andere Moderne*, Frankfurt am Main: Suhrkamp.

Beck, U. (1989): Risikogesellschaft – Die neue Qualität technischer Risiken und der soziologische Beitrag zur Risikodiskussion, in: M. Schmidt (Hg.), *Leben in der Risikogesellschaft. Der Umgang mit modernen Zivilisationsrisiken*, Karlsruhe: Verlag C.F. Müller Alternative Konzepte 71, pp. 13-28.

Behrens, H. (1991): DDR-Öko-Bewegung. Begründung für ein Forschaungsprogramm zur Geschichte der ökologischen Bewegung der DDR, in: *Forum Wissenschaft, Zeitschrift des BdWi*, Marburg, Nr. 4/1991, pp. 21-25.

Behrens, H. (1991a): *Marktwirtschaft und Umwelt. Zur Formationslogik von Umweltproblemen – Beispiel Landwirtschaft*, Frankfurt am Main/ Bern/ New York/ Paris: Peter Lang Verlag.

Behrens, H. und U. Benkert (1991): *Was wurde aus der GNU – Von den Natur- und Heimatfreunden im Kulturbund zur demokratischen Erneuerung Deutschlands zum Bund für Natur und Umwelt e.V. in Ostdeutschland*, Typoscript, Berlin.

Beleites, A. (1990): Die Arbeit der kirchlichen Umweltgruppen in der DDR, in: *Politische Ökologie* (Zs.), Heft 18, München, pp. 44-48.

Belitz, H., J. Blazejczak (1992): Ökologische Sanierung in den neuen Bundesländern – Impulse für den wirtschaftlichen Strukturwandel, in: *Wochenberichte des DIW*, Heft 8/92, pp. 83-89.

Belitz, H., J. Blazejczak, M. Kohlhaas, E. Schulz, T. Seidel, S. Vesper (1992): Ökologische Sanierung und wirtschaftlicher Strukturwandel in den Neuen Bundesländern – Ökologisches Sanierungskonzept Leipzig/Bitterfeld/ Halle/Merseburg. *Beiträge zur Strukturforschung des DIW*, Heft 132, Berlin.

Bittighöfer et al. (1972): Theoretische und politisch-ideologische Fragen der Beziehungen von Mensch und Umwelt, in: *Deutsche Zeitschrift für Philosophie* (DZfPh), Berlin (DDR), Nr. 1.

Bönisch, R. et al. (1976): *Territorialplanung*, Berlin (DDR).

Borissow, K. (1977): Der ökologische Krieg, in: *Neue Zeit*, 6.

Borner, J. (1991): Die Unmöglichkeit der Umweltsanierung im Osten Deutschlands, in: *Forum Wissenschaft, Zeitschrift des BdWi*, Marburg, Nr. 4/1991, pp. 13-16.

Brake, K. (1992): Szenarien räumlicher Entwicklung im Gebiet der ehemaligen DDR, in: BdWi (Hg.) (1992), *Umweltsanierung in den neuen Bundesländern*, Marburg, pp. 75-89.

Buhr, M. und G. Kröber (Hrsg.) (1977): *Mensch Wissenschaft Technik. Versuch einer marxistischen Analyse der wissenschaftlich-technischen Revolution*, Köln: Pahl-Rugenstein.

Bundesminister des Innern (1976): *Fortschreibung des Umweltprogramms der Bundesregierung vom 14.7.1976*, Stuttgart.

Bundesminister für Umwelt, Naturschutz und Reaktorsicherheit (1990): *Eckwerte der ökologischen Sanierung und Entwicklung in den neuen Ländern*, Bonn.

Busch, K.-F., D. Uhlmann, G. Weise (Hrsg.) (1983): *Ingenieurökologie*, Jena: VEB Verlag G. Fischer.

Busch-Lüty, C. (1981): Zur Umweltproblematik in sozialistischen Systemen - Ideologie und Realität, in: *Aus Politik und Zeitgeschichte*, B 27/81, pp. 18ff.

Busch-Lüty, C. (1990): Das Umwelterbe des real existierenden Sozialismus, in: *Politische Ökologie* (Zs.), München, Heft 18, pp. 12-19.

Chatschturow, T.S. (1978): Ökonomische Probleme der Ökologie, in: *Gesellschaftswissenschaftliche Beiträge*, Moskau, Nr. 10.

Conrad, J. (1989): Risiko, Ritual und Politik, in: M. Schmidt (Hg.), *Leben in der Risikogesellschaft. Der Umgang mit modernen Zivilisationsrisiken*, Karlsruhe: Verlag C.F. Müller Alternative Konzepte 71, pp. 179-206.

Cornelsen, D. (1992): Privatisation in the former GDR: Lessons for the Central and East European Economies, paper contributed to the Conference *Impediments to the Transition: The East European Countries and the Politics of the European Community*, January 1992, European University Institute, Florence.

Council of Environmental Advisers (1989): *Summary of the Report on Abandoned Hazardous Sites (Altlasten)*, December 1989, Wiesbaden.

Der Umweltschutz, Internationale Diskussion von Marxisten (1972), in: *Probleme des Friedens und des Sozialismus*, Prag/Berlin (DDR), Nr. 6.

Die Folgen des Wettrüstens für die Umwelt und andere Aspekte der ökologischen Sicherheit. Erklärung der Teilnehmerstaaten des Warschauer Vertrages, in: *Neues Deutschland*, Berlin (DDR), 18.7.88.

Djoshkin, W.W. (1978): *Leben und Umwelt*, Leipzig/Jena/Berlin (DDR).

Douglas, M. and A. Wildavsky (1982): *Risk and Culture*, Berkeley.

Edelhäuser, H. (1991): Altlastensanierung im Bundesland Mecklenburg-Vorpommern, in: *FGU-Seminar Altlastensanierung - Grundsatzfragen, Gefahrenbeurteilung, Techniken, Schwerin*, November 1991.

Engels, F. (1978): *Dialektik der Natur*, in: MEW 20, Berlin (DDR).

Fedorenko, N.P. (1968): Zur ökonomischen Bewertung der natürlichen Ressourcen, in: *Sowjetwissenschaft. Gesellschaftswissenschaftliche Beiträge*, Moskau, Nr. 3.

Fedorenko, N.P. (1976): Wissenschaftlich-experimentelle Arbeiten zur ökonomischen Bewertung von Naturressourcen in: *Sowjetwissenschaft. Gesellschaftswissenschaftliche Beiträge*, Moskau, Nr. 8.

Fedorenko, N.P. (1979): Aktuelle Probleme der Wechselbeziehungen zwischen Gesellschaft und Umwelt, in: *Sowjetwissenschaft. Gesellschaftswissenschaftliche Beiträge*, Moskau, Nr. 3.

Fedorenko, N.P. (1979): Die Ziel-Programm-Methoden in Planung und Leitung, in: *Gesellschaftswissenschaften*, Moskau, Nr. 4.

Fedorenko, N.P. und K. Gofman (1973): Rationelle Gestaltung der Umwelt als Problem der optimalen Planung und Leitung, in: *Sowjetwissenschaft. Gesellschaftswissenschaftliche Beiträge*, Moskau, Nr. 3.

Fiedler, H.J. (1990): *Bodennutzung und Bodenschutz*, Jena: VEB Verlag G. Fischer.

Fjodorow, J. (1979): Wissenschaftlich-technische Revolution, Ökologie, Umwelt, in: *Der philosophische Ideenkampf in der modernen Naturwissenschaft*, Materialen einer wissenschaftlichen Konferenz 1975 in Moskau, Frankfurt/M.

Förster, H. (1991): Umweltprobleme und Umweltpolitik in Osteuropa, in: *Aus Politik und Zeitgeschichte, Beilage zur Wochenzeitung Das Parlament* B 10/91, 1.3.1991, Bonn, pp. 13-25.

Füllenbach, J. (1977): *Umweltschutz in Ost und West. Umweltpolitik in Osteuropa und gesamteuropäische Zusammenarbeit*, Bonn.

Funktionsüberlagerung im Territorium. Schlußbericht der Wissenschaftlichen Tagung der T.U. Dresden 21.-24.11.1972, in: *Wissenschaftliche Zeitschrift der T.U. Dresden*, vol. 22, Heft 4.

Gaus, G. (1983): *Wo Deutschland liegt. Eine Ortsbestimmung*, Köln: Kiepenheuer und Witsch.

Glagow, M. (Hrsg.) (1972): *Umweltgefährdung und Gesellschaftssystem*, München.

Goldman, M.I. (1972): Umweltzerstörung und Umweltvergiftung in der Sowjetunion, in: M. Glagow (Hrsg.) (1972).

Graf, D. (1978): Zu einigen Grundfragen der ökonomischen Bewertung von Naturressourcen im entwickelten Sozialismus, in: *Wirtschaftswissenschaft*, Berlin (DDR), Nr. 7.

Graf, D. (1984): *Ökonomie und Ökologie der Naturnutzung. Ausgewählte Probleme*, Jena.

Grundmann, S. und E. Stabenow (1971): Beziehungen von Mensch und Umwelt, in: *Wirtschaftswissenschaft*, Berlin (DDR), Nr. 12.

Gudoznik, G. (1974): *Wissenschaftlich-technischer Fortschritt. Wesen, Grundlagen, Tendenzen. Überarbeitete und ergänzte deutsche Ausgabe*, Berlin (DDR) (russische Ausgabe: Moskau 1970).

Hansmeyer, K.-H. und B. Rürup (1974): Umweltgefährdung und Gesellschaftssystem, in: *Umwelt* (Informationen des Bundesministers des Innern zur Umweltplanung und zum Umweltschutz), Bonn, Nr. 30.

Harich, W. (1975): *Kommunismus ohne Wachstum. Babeuf und der Club of Rome*, Reinbek bei Hamburg.

Harnisch, B. (1978): Der Einfluß der Umweltnutzung auf die gesellschaftliche Arbeitsproduktivität, in: Richter (1978).

Hartkopf, G. und E. Bohne (1983): *Umweltpolitik I*, Opladen.

Havemann, R. (1980): *Morgen. Die Industriegesellschaft am Scheideweg. Kritik und reale Utopie*, München.

Hegewald, H. (1990): Zwischenbericht der PDS-Untersuchungskommission zur Unterlassungspraxis der ehemaligen Führung. Veröffentlicht als "Wer steuerte den Kahn in die Öko-Krise?", in: *Junge Welt*, 8.3.1990.

Heine, M. (1990): Ökologische Perspektiven in der DDR, in: Ders. et al. (Hg.), *Die Zukunft der DDR-Wirtschaft, Rowohlt Sachbuch*, Reinbek.

Heine, M. (1991a): Zur Quadratur eines Kreises: Regionalpolitik in den neuen Bundesländern, in: A. Westphal et al. (Hg.), *Wirtschaftspolitische Konsequenzen der deutschen Vereinigung*, Frankfurt am Main/New York: Campus Verlag, pp. 195-214.

Heine, M. (1991b): Chancen und Risiken. Regionalwirtschaftliche Entwicklungen in den neuen Bundesländern, in: *Forum Wissenschaft, Zeitschrift des BdWi*, Marburg, Nr. 4/1991, pp. 17-20.

Heinisch, E., A. Kettrup, S. Klein (1991): Ecochemical-ecotoxicological consequences of massive uses of DDT/lindane in the GDR in 1983/84, in: SECOTOX (1991), pp. 15-25.

Heinrichs, W. (1987): *Umfassende Intensivierung und Reproduktionstheorie*, Berlin (DDR).

Helmbold, M. (1976): Internationaler Entspannungsprozeβ und Lösung globaler Umweltprobleme, in: *IPW-Berichte*, Berlin (DDR), Nr. 10.

Hertle, H.-H. (1991): Vor dem Bankrott der DDR. Dokumente des Politbüros des ZK der SED aus dem Jahr 1988 zum Scheitern der "Einheit von Wirtschafts- und Sozialpolitik" (Die Schürer-Mittag-Kontroverse). Mit einem Gespräch mit Gerhard Schürer, ehem. Mitglied des Plitbüros und Vorsitzender der Staatlichen Plankommission der DDR. *Berliner Arbeitshefte und Berichte zur sozialwissenschaftlichen Forschung*, Berlin, Nr. 63.

Hitziger, L. (1979): *Der Erde Brot. Müssen Menschen hungern?*, Berlin (DDR).

Honecker, E. (1983): Rede auf der Internationalen Wissenschaftlichen Konferenz des Zentralkomitees der SED "Karl Marx und unsere Zeit -der Kampf um Frieden und sozialen Fortschritt", in: *Einheit*, Berlin (DDR), Heft 5/1983, pp. 430.

Horsch und A. Leonhardt (1973): Probleme der Umweltkrise im staatsmonopolistischen Kapitalismus, in: *IPW-Berichte*, Berlin (DDR), Nr. 4.

Hübler, K.-H. (1986): Umweltpolitik zwischen Theorie und Umweltrealität in der Bundesrepublik Deutschland und der DDR - ein Vergleich, in: M. Haendke-Hoppe, und K. Merkel (1986): *Umweltschutz in beiden Teilen Deutschlands, Bd. XIV der Schriftenreihe der Gesellschaft für Deutschlandforschung*, Berlin (West), pp. 13-39.

Hübler, K.-H. (1990): Politische Rahmenbedingungen, Problembewuβtsein und Umweltsituation in der DDR im partiellen Vergleich mit der Bundesrepublik, in: *Politische Ökologie* (Zs.), München, Heft 18, pp. 32-42.

Hübler, K.-H. (1991): Perspektiven für die Umweltpolitik im internationalen und föderalen Kontext - pragmatische Lösungen in den neuen Bundesländern, Typoskript zur Tagung *Umweltsanierung in den neuen Ländern* des BdWi, November 1991, Berlin.

Hübler, K.-H. (1992): *Umwelt und Entwicklung in Ost-Europa*. Vortrag anläβlich des Sachverständigengespräches der Arbeitsgemeinschaft für Umweltfragen (AGU) am 25.5.1992 bei der ENVITEC in Düsseldorf.

Informationen zur Entwicklung der Umweltbedingungen in der DDR und weitere Maβnahmen - Basisjahr 1988 - Materialien für die Beratung am Runden Tisch, Berlin(DDR), 29.1.1990.

Jänicke, M. (1986): Umweltpolitisches Staatsversagen im Realen Sozialismus, in: H. von Schreiber (Hrsg.), *Umweltprobleme und Umweltpolitik in Mittel- und Osteuropa*, Frankfurt am Main.

Klein, D. (1992): Konstellationen für ökologischen Umbau am Ende des Ost-West-Konfliktes, in: BdWi (Hg.) (1992), *Umweltsanierung in den neuen Bundesländern*, Marburg, pp. 9-17.

Kloepfer, M., E. Rehbinder, E. Schmidt-Aßmann unter Mitwirkung von P. Kunig (1991): *Umweltgesetzbuch. Allgemeiner Teil. Berichte 7/90 des Umweltbundesamtes*, Berlin: Erich-Schmidt-Verlag.

Köhler, J. (1974): Zur Problematik der produktiven und unproduktiven Arbeit sowie der Dienstleistungen, in: *Wirtschaftswissenschaft*, Berlin (DDR), Nr. 6.

Köhler, J. (1976): Der Charakter der Kosten für den Umweltschutz, in: Autorenkollektiv, *Ausgewählte Probleme der Leitung und Planung des Umweltschutzes*, Freiberger Forschungshefte D 102, Leipzig.

Kotschurow, B. (1992): Ökologische Situation in der ehemaligen UdSSR und diesbezügliche Prognosen, in: M. Springer (Hrsg), *Biologische Sanierung schwermetallkontaminierter Böden - Ansätze, Verfahren und Konzepte zur Sicherung, Sanierung und Nutzung großräumig kontaminierter Standorte*. Beiträge zum Kongreß UTECH 1992, Berlin 17.-21.2.1992.

Kuczynski, J. (1975): *Vier Revolutionen der Produktivkräfte*, Berlin (DDR).

Kutzschbauch, K. (1978): Stoff- und energiewirtschaftliche Aspekte der Umweltnutzung, in: Autorenkollektiv (1978), *Rohstoff und Energie im gesellschaftlichen Reproduktionsprozeß und ihr Wechelverhältnis zur materiell-technischen Basis*, Forschungsbericht 28, Hrsg. v. Zentralinstitut für Wirtschaftswissenschaften der Akademie der Wissenschaft der DDR, Berlin (DDR).

Leonhardt, A. und G. Speer (1977): *Umweltreproduktion im staatsmonopolistischen Kapitalismus. Zur Kritik bürgerlicher Konzeptionen einer marktwirtschaftlichen Lösung des Umweltproblems*, Reihe "Zur Kritik der bürgerlichen Ideologie", Nr. 79, Frankfurt am Main.

Lersner, H. von (1991): *Umweltschutz im geeinten Deutschland*, Vortrag bei der Industrie- und Handelskammer Hannover-Hildesheim am 29.8.91, Typoskript.

Lojter, M.N. (1977): *Naturressourcen, Umwelt und Investitionseffektivität*, Berlin (DDR) (aus dem russsischen).

Lüdemann, H. (1973): Gesellschaft und Umwelt, in: *Wissenschaftliche Zeitschrift der TU Dresden*, Heft 4.

Maier, H. (1975): Das Wechselverhältnis von produktiver und nicht produktiver Arbeit als theoretisches und praktisches Problem bei der Schaffung der entwickelten sozialistischen Gesellschaft, in: *Wirtschaftswissenschaften*, Berlin (DDR), Nr. 11.

Maier, H. (1977): *Gibt es Grenzen des ökonomischen Wachstums?*, Reihe "Zur Kritik der bürgerlichen Ideologie", Nr. 78, Berlin (DDR).

Maier, R. (1992): Ein Vergleich des Umweltbewuptseins zwischen der alten Bundesrepublik Deutschland und der ehemaligen DDR, in: BdWi (Hg.) (1992), *Umweltsanierung in den neuen Bundesländern*, Marburg, pp. 40-49.

Marx, K. (1953): *Grundrisse der politischen Ökonomie*, Berlin (DDR).

Marx, K. (1979): *Das Kapital I*, in: MEW 23, Berlin (DDR).

Marx, K. (1979): *Das Kapital III*, in: MEW 25, Berlin (DDR).

Maßnahmen zur Erreichung der Qualitätsnormen der Richtlinie 80/778/EWG (Trinkwasserrichtlinie) bis 31.12.1995 im Trinkwasser der Bundesländer Brandenburg, Mecklenburg-Vorpommern, Sachsen, Sachsen-Anhalt und Thüringen (1992): Bericht an die Kommission der Europäischen Gemeinschaft unter Federführung des Bundesgesundheitsamtes.

Minc, A.A. (1976): *Die ökonomische Bewertung der Naturressourcen*, Gotha/Leipzig: VEB Verlag H. Haack.

Minister für Naturschutz, Umweltschutz und Wasserwirtschaft, Dr. Diederich (1990): *Konzeption für die Entwicklung der Umweltpolitik*, Vorlage für den Ministerrat vom 5.3.1990, Berlin.

Mottek, H. (1972): Zu einigen Grundfragen der Mensch-Umwelt-Problematik, in: *Wirtschaftswissenschaft*, Berlin (DDR), Nr. 1.

Neef, E. (1979): Ökologie, eine Grundform wissenschaftlichen Denkens, in: K.-F. Schreiber (Hrsg. im Auftrag der Gesellschaft für Ökologie) (1979), *Verhandlungen der 8. Jahrestagung der Gesellschaft für Ökologie in Münster 1978*, Bd. VII, Göttingen.

Neef, E. und V. Neef (Hrsg.) (1977): *Brockhaus Handbuch Sozialistische Landeskultur*, Leipzig.

Nick, H. (Leiter des Autorenkollektivs) (1979): *Zur materiell-technischen Basis in der DDR*, Berlin (DDR).

Nowikow, R.A. (1978): Die Zusammenarbeit im Bereich des Schutzes und der Verbesserung der Umwelt. Ökologie und europäische Sicherheit, in: Autorenkollektiv (1978), *Europäische Sicherheit und Zusammenarbeit. Voraussetzungen, Probleme und Perspektiven* (hrsg. von der Akademie der Wissenschaften der UdSSR), Moskau.

Nuti, D. M. (1992): Economic Inertia in the Transitional Economies of Eastern Europe, paper contributed to the Conference *Impediments to the transition: The East*

European Countries and the politics of the European Community, January 1992, European University Institute, Florence.

Oehler, E. (1978): Zu den staatlichen und rechtlichen Problemen der Landschaftsplanung, in: Richter (Hrsg.) (1978).

Paucke, H. (1992): Umweltforschung in der ehemaligen DDR, in: BdWi (Hg.) (1992), *Umweltsanierung in den neuen Bundesländern, Forum Wissenschaft*, Studie Nr. 17, Marburg, pp. 34-39.

Paucke, H. und A. Bauer (1978): Zu einigen Prinzipien der Naturnutzung im Sozialismus, in: *Deutsche Zeitschrift für Philosophie* (DZfPh), Berlin (DDR), Nr. 8.

Paucke, H. und A. Bauer (1980a): *Umweltprobleme - Herausforderung der Menschheit*, Frankfurt am Main (Berlin (DDR) 1979).

Paucke, H. und A. Bauer (1980b): Zum Verhältnis von Natur- und Produktionskreisläufen, in: *Deutsche Zeitschrift für Philosophie* (DZfPh), Berlin (DDR), Nr. 8.

Paucke, H. und G. Streibel (1977): Zur Wechselbeziehung von Materialökonomie, Technologie und Umweltschutz, in: *Wirtschaftswissenschaft*, Berlin (DDR), Nr. 10.

Paucke, H. und G. Streibel (1980): Zur Verflechtung von Naturprozessen und volkswirtschaftlichem Reproduktionsproze*ß*, in: *Wirtschaftswissenschaft*, Berlin (DDR), Nr. 4.

Paucke, H. und H. Kroske (1976): Zur Kosten-Nutzen-Problematik von ma*ß*nahmen in Umweltschutz und Umweltgestaltung, in: Sitzungbericht der Akademie der Wissenschaft der DDR Nr. 2/1976 *Gesellschaft und Umwelt. Hans Mottek zum 65. Geburtstag*, Berlin (DDR).

Platzeck, M. (1991): Interview, in: *Politische Ökologie* (Zs.), München, Heft 23, pp. 40-45.

Pletnikow, J.K. (1976): Die Wechselwirkungen von Gesellschaft und Natur und Probleme der Noosphäre, in: *Deutsche Zeitschrift für Philosophie* (DZfPh), Berlin (DDR), Nr. 2.

Programm der Sozialistischen Einheitspartei Deutschlands (1976), Berlin.

Rechtziegler et al. (1977): Umweltprobleme und staatsmonopolistischer Kapitalismus, *IPW-Forschungsheft*, Berlin (DDR), Nr. 1.

Richter, H. (Hrsg.) (1978): *Beiträge zur planmäßigen Gestaltung der Landschaft. Wissenschaftliche Abhandlungen der Geographischen Gesellschaft der DDR*, Band 14, Leipzig.

Richter, H. (Hrsg.) (1981): *Nutzung und Veränderung der Natur, Tagungsband anläßlich des III. Geographen-Kongresses der DDR 1981 in Leipzig*, Gotha/Leipzig: VEB Hermann Haack.

Richter, H. und K.D. Aurada (Hrsg.) (1984): *Umweltforschung. Zur Analyse und Diagnose der Landschaft*, Gotha/Leipzig: VEB Hermann Haack.

Roos, H. (1976): Natürliche Umweltbedingungen und volkswirtschaftlicher Reproduktionsprozeß, in: *Geographische Berichte*, Vol. 80, H. 3, pp. 179-189.

Roos, H. und G. Streibel (Leiter des Autorenkollektives) (1979): *Umweltgestaltung und Ökonomie der Naturressourcen*, Berlin(DDR): Verlag Die Wirtschaft.

Rundtischgespräch (1973): "Der Mensch und seine Umwelt", in: *Sowjetwissenschaft, Gesellschaftswissenschaftliche Beiträge*, Heft 11 und 12; auch abgedruckt in: F. Duve (Hrsg.) (1975), *Technologie und Politik, aktuell-magazin*, Nr. 2, Reinbek bei Hamburg: Rowohlt Verlag.

Sagladin, W. und J. Frolow (1978): Globale Probleme der Gegenwart und die Kommunisten, in: *Probleme des Friedens und des Sozialismus*, Prag/Berlin (DDR), Nr. 3.

Sauerbrey, R., D. Eschner, W.-D. Lorenz und A. Titze (1991): Ökologische Aspekte der Bodenentwicklung landwirtschaftlich genutzter flachgründiger Niedermoorstandorte der ehemaligen DDR. Situationsbericht, in: *Zeitschrift für Kulturtechnik und Landentwicklung*, Berlin/Hamburg: Verlag P. Parey, 32, pp. 300-308.

Saupe, G. (1991), Zur Situation der Bodenerosion im ehemaligen Bezirk Leipzig, in: Inst. f. Geographie und Geoökologie Leipzig, *Ausgewählte geoökologische Entwicklungsbedingungen Nordwestsachsens*, Leipzig, pp. 110-125.

Schieferdecker, H. (1990/a), zit. nach Tagesspiegel v. 30.5.90.

Schieferdecker, H. (1990/b): Konzept, Erfolge und Defizite bisheriger Umweltpolitik. Vortrag in der Technischen Universität Berlin am 9.5.90.

Schindler, H. (1979): *Graben wir uns selbst das Wasser ab? Umweltprobleme in unserer Zeit*, Berlin (DDR).

Schmidt, R. (1991): Anthropogene Veränderung und Degradation landwirtschaftlich genutzter Böden in den neuen Bundesländern Deutschlands, in: *Zeitschrift für Kulturtechnik und Landentwicklung*, Berlin/Hamburg: Verlag P. Parey, 32, pp. 282-290.

Schulz, M. (1992): Sanierungsbedarf für großflächige Altstandorte im Land Brandenburg, in: M. Springer (Hrsg), *Biologische Sanierung schwermetallkontaminierter Böden - Ansätze, Verfahren und Konzepte zur Sicherung,*

Sanierung und Nutzung großräumig kontaminierter Standorte. Beiträge zum Kongreß UTECH 1992, Berlin 17.-21.2.1992.

SECOTOX (1991): *Proceedings of the International East-West Symposium on Contaminated Areas in Eastern Europe. Origin, Monitoring, Sanitation*, November 25-27, 1991.

Simonis, U.E. (Hrsg.) (1988): *Präbentive Umweltpolitik*, Frankfurt am Main/New York.

Streibel, G. (1975): Umweltschutz und Umweltgestaltung als volkswirtschaftliche Aufgabe, in: *Wirtschaftswissenschaft*, Berlin (DDR), Nr. 8.

Streibel, G. (1990): Ökologischer Umbau in der DDR, Statement zur Tagung *Deutsch-deutsche Umbrüche als Herausforderung der Wissenschaft* des Bundes demokratischer Wissenschaftler und Wissenschaftlerinnen, Hannover 27. und 28.1.90.

Streibel, G. (1992): Ökologisches Bewußtsein contra ökonomisch-ökologische Realität, in: BdWi (Hg.) (1992), *Umweltsanierung in den neuen Bundesländern*, Marburg, pp. 50-57.

Strumilin, S. (1968): Über den Preis der "unentgeltlichen" Naturgüter, in: *Sowjetwissenschaft, Gesellschaftswissenschaftliche Beiträge*, Moskau, Nr. 3.

Succow, M. (1990): *Umweltbilanz der DDR - eine übersicht*. Vortrag in der Technischen Universität Berlin am 16.5.90.

Suchotin, J. (1968): Über die Bewertung der Naturressourcen, in: *Sowjetwissenschaft, Gesellschaftswissenschaftliche Beiträge*, Moskau, Nr. 6.

Terytze, K. und M. Goschin (1991): Chlorierte Kohlenwasserstoffe in aquatischen Sedimenten in Berlin und Umgebung, in: *Wasserwirtschaft* Vol. 81, 5, pp. 233-238.

The Zaborow Declaration on Sustainable Industrial Development for Central and Eastern Europe: A Call for Action (1991), Declaration of a workshop organised by the United Nations Development Programme in collaboration with Poland's Ministry of Environment, Natural Resources and Forestry, Poland's Ministry of Industry and Trade and the United Nations Economic Commission for Europe, Zaborow/Poland, November 15, 1991.

TÜV Rheinland (1991): *Ökologisches Sanierungs- und Entwicklungskonzept Leipzig/Bitterfeld/Halle/Merseburg*. Bericht zum F+E-Vorhaben 10402803 des Umweltbundesamtes, Berlin.

Umwelt in Osteuropa, Schwerpunkt-Ausgabe der Zeitschrift *Politische Ökologie*, Januar 1990, München.

Weißenburger, U. (1988): Umweltprobleme und Umweltschutz in der Sowjetunion, in: *Osteuropa-Wirtschaft*, 30. Jg. Heft 4.

Wieczorek, B. (1991): Erkundung und Sanierung von Altlasten, in: *Umwelt* (BMU), Nr. 10, pp. 427-430.

Wieczorek, B. (1991): Schwerpunkte der Umweltpolitik, in: *Umwelt* (BMU), Nr. 11, pp. 491-493.

Wolf, K. (1991): Freistellung von der Altlastenhaftung beim Erwerb von Grundstücken, in: *FGU-Seminar Altlastensanierung - Grundsatzfragen, Gefahrenbeurteilung, Techniken, Schwerin*, November 1991.

Wolkow, G. (1978): "Ökologische Krise" und die sozialistische Nutzung der Naturressourcen, in: Akademie der Wissenschaften der Sowjetunion (1978).

Wurms, C. (1976): *Raumordnung und Territorialplanung in der DDR, Untersuchungen zur Entwicklung von Territorialstruktur, Planungsorganisation und Raumwissenschaft in der DDR*. Dortmunder Beiträge zur Raumplanung, Bd. 2, Dortmund.

Würth, G. (1985): *Umweltschutz und Umweltzerstörung in der DDR*, Frankfurt am Main.

EUI WORKING PAPERS

EUI Working Papers are published and distributed by the
European University Institute, Florence

Copies can be obtained free of charge
– depending on the availability of stocks – from:

The Publications Officer
European University Institute
Badia Fiesolana
I-50016 San Domenico di Fiesole (FI)
Italy

Please use order form overleaf

Publications of the European University Institute

To The Publications Officer
European University Institute
Badia Fiesolana
I-50016 San Domenico di Fiesole (FI)
Italy

From Name .....
Address. .....
.....
.....
.....
.....

❒ Please send me a complete list of EUI Working Papers
❒ Please send me a complete list of EUI book publications
❒ Please send me the EUI brochure Academic Year 1993/94
❒ Please send me the EUI Research Report

Please send me the following EUI Working Paper(s):

No, Author .....
Title: .....
No, Author .....
Title: .....
No, Author .....
Title: .....
No, Author .....
Title: .....

Date .....

Signature .....

Working Papers of the European Policy Unit

EPU No. 90/1
Renaud DEHOUSSE/Joseph H.H. WEILER
EPC and the Single Act:
From Soft Law to Hard Law?*

EPU No. 90/2
Richard N. MOTT
Federal-State Relations in U.S. Environmental
Law: Implications for the European Community

EPU No. 90/3
Christian JOERGES
Product Safety Law, Internal Market Policy and the Proposal for a Directive on General Product Safety

EPU No. 90/4
Martin WESTLAKE
The Origin and Development of the Question Time Procedure in the European Parliament *

EPU No. 90/5
Ana Isabel ESCALONA ORCAO
La cooperacíon de la CEE al desarrollo de America Latina: el caso de los países del Pacto Andino

EPU No. 90/6
Jobst CONRAD
Do Public Policy and Regulation Still Matter for Environmental Protection in Agriculture?

EPU No. 91/7
Ortwin RENN/Rachel FINSON
The Great Lakes Clean-up Program:
A Role Model for International Cooperation?

EPU No. 91/8
Une politique étrangère pour l'Europe.
Rapport du groupe de travail sur la réforme de la coopération politique

EPU No. 91/9
Elena FLORES/Peter ZANGL
La structure financière de la Communauté face aux défis présents et futurs

EPU No. 91/10
Hans von der GROEBEN
Anmerkungen zur Europapolitik

EPU No. 91/11
Roger MORGAN
The Consultative Function of the Economic and Social Committee of the European Community*

EPU No. 91/12
Ida J. KOPPEN/Maria Rosaria MAUGERI/ Francesca PESTELLINI
Environmental Liability in a European Perspective

EPU No. 92/13
Henning A. ARP
The European Parliament in European Community Environmental policy

EPU No. 92/14
Martin WESTLAKE
The Passage THrough the Community's Legislative System of Emergency Measures Related to German Unification

EPU NO. 92/15
Zhang YUNLING
European Economic Integration and East and South-East Asian Economy

EPU 92/16
Mihály SZÍVÓS
From Individual Privacy to the Privacy of Groups and Nations - An Approach to the Problems of the Structure of the European Public Sphere

EPU No. 92/17
Milica UVALIC
Yugoslavia: The Economic Costs of Disintegration

EPU No. 92/18
Ida J. KOPPEN
The Role of the European Court of Justice in the Development of the European Community Environmental Policy

***

EPU NO. 93/1
Zhang ZUQIAN
Revival of Regional Economic Integration – Challenge for the Asian Pacific Region

* Working Paper out of print

EPU No. 93/2
Horst UNGERER
Political Aspects of European Monetary Integration

EPU No. 93/3
Günther BACHMANN
Environmental Policy in Transition: The Need for a New Political Approach to Environmental Cleanup in the Former GDR

* Working Paper out of print