

Simonis, Udo E.

Article — Digitized Version

Preventative environmental policy: prerequisites, trends and prospects

Ekistics: reviews on the problems and science of human settlements

Provided in Cooperation with:

WZB Berlin Social Science Center

Suggested Citation: Simonis, Udo E. (1985) : Preventative environmental policy: prerequisites, trends and prospects, Ekistics: reviews on the problems and science of human settlements, ISSN 0013-2942, Athens Center of Ekistics of the Athens Technological Organization, Athens, Vol. 52, Iss. 313, pp. 369-372

This Version is available at:

<https://hdl.handle.net/10419/122602>

Standard-Nutzungsbedingungen:

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

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

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

Terms of use:

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

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

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



WZB-Open Access Digitalisate

WZB-Open Access digital copies

Das nachfolgende Dokument wurde zum Zweck der kostenfreien Onlinebereitstellung digitalisiert am Wissenschaftszentrum Berlin für Sozialforschung gGmbH (WZB).

Das WZB verfügt über die entsprechenden Nutzungsrechte. Sollten Sie sich durch die Onlineveröffentlichung des Dokuments wider Erwarten dennoch in Ihren Rechten verletzt sehen, kontaktieren Sie bitte das WZB postalisch oder per E-Mail:

Wissenschaftszentrum Berlin für Sozialforschung gGmbH

Bibliothek und wissenschaftliche Information

Reichpietschufer 50

D-10785 Berlin

E-Mail: bibliothek@wzb.eu

The following document was digitized at the Berlin Social Science Center (WZB) in order to make it publicly available online.

The WZB has the corresponding rights of use. If, against all possibility, you consider your rights to be violated by the online publication of this document, please contact the WZB by sending a letter or an e-mail to:

Berlin Social Science Center (WZB)

Library and Scientific Information

Reichpietschufer 50

D-10785 Berlin

e-mail: bibliothek@wzb.eu

Digitalisierung und Bereitstellung dieser Publikation erfolgten im Rahmen des Retrodigitalisierungsprojektes **OA 1000+**. Weitere Informationen zum Projekt und eine Liste der ca. 1 500 digitalisierten Texte sind unter <http://www.wzb.eu/de/bibliothek/serviceangebote/open-access/oa-1000> verfügbar.

This text was digitizing and published online as part of the digitizing-project **OA 1000+**.

More about the project as well as a list of all the digitized documents (ca. 1 500) can be found at <http://www.wzb.eu/en/library/services/open-access/oa-1000>.

Preventative environmental policy: Prerequisites, trends and prospects

Udo E. Simonis

The author is Director of the International Institute for Environment and Society in West Berlin, Federal Republic of Germany. He is a member of the World Society for Ekistics.

Introduction

Environmental policy can be defined as the sum of objectives and measures designed to regulate society's interaction with the environment as a natural system; it comprises aspects of restoration, conservation, and structural adjustment. Since society's existence ultimately depends on the natural environment and its resources, environmental policy in principle involves all societal rules governing the use of nature by human beings.¹ Practice, however, does not conform to such a broad definition. Generally, only selected parts of the set of relations between environment and society become the subject of environmental policy. So far, environmental policy has mostly been understood as a set of media-specific policies concerning the control of air and water quality, noise abatement, and waste disposal, with emphasis on restoration.

For a variety of reasons, this conventional environmental policy was, and is, meaningful and is still necessary. It has a number of weaknesses, however, some of which are cited in this paper, along with proposals for overcoming them through anticipatory, preventative environmental policy.

Preventative environmental policy

The concept

In his essay "The state of nature in the nation," Christian Schütze (1981) pointed out a central problem that now confronts environmental policy in Germany — and elsewhere — as it has been practiced so far: "We have started to pay back — from Ried in Hesse to Goslar, from the Bavarian Forest to the fish markets of Cuxhaven."² Since 1971, when systematic records were first kept of the funds appropriated for environmental protection, the Federal Republic of Germany has paid the handsome total of 150 billion marks (66 billion US dollars). It thus appears that the public is being grossly overcharg-

ed in backpayments for the external costs of production and consumption accumulated in the past. Amounts like these, however, are ambivalent. On one hand, they give cause for proud political statements about the successes of environmental protection. On the other hand, they are, presumably, the absolute minimum of what is necessary to secure the basis for society's long-term existence. At the same time, amounts like these reflect the changing preferences and priorities of society. But they also symbolize the shortcomings of past environmental policies: expenditures for environmental protection are made when damage to the natural environment is unmistakable and can no longer be denied. Belated, they are only repairs to the process of economic development, signs of a reactive environmental policy — a "post fact" policy that reacts to damages (and must react to them) but does not, or cannot, prevent them.

Reactive — *ex post* — environmental policy has many shortcomings. First, it is expensive. It usually identifies the problem very late, and the measures it employs occasionally take effect so late that the ecosystems involved can no longer be saved. Besides, such a policy is focused on only a part of the relations between environment and society; it is pursued as a media-specific policy for controlling the air and water quality, for noise abatement, and waste disposal. Thus, it runs the special risk of lacking coordination among its "measures," which may result in shifting an environmental problem from one medium to another — from air to water, for example and, through spatial displacement, from one place to another, as is the case with long-range pollution. In addition, conventional environmental policies become entangled in a dilemma of principles because the causes of the problems can be reinterpreted at a later stage. If immediate steps simply *must* be taken, the argument gets shifted in the process of political bargaining from a "polluter pays" principle — which is advocated in general — to the "taxpayer pays" principle, thus switching the distribution of the burden of environmental protection from the individual — private — polluter to the community, the government and the society at large.

The concept of "preventative" — *ex ante* — environmental policy can counterbalance these shortcomings of traditional environmental policy, and can point the way toward a gradual transition from "react-and-cure" strategies to "anticipate-and-prevent" strategies.³

Research on preventative environmental policy, though difficult, is necessary because:

- of growing pressure, given the abundance of tasks to be accomplished — for example, significant reduction in automobile emissions and desulfurization of energy plants — and the necessity to find solutions that are more acceptable economically than those involved in ex post measures;
- the early identification of future environmental problems, such as the impacts of new technologies, is needed; and,
- priorities for action as for example in the case of forest damage, must be set in time.

Research on the ways of implementing preventative environmental policy is difficult because:

- preventative environmental policy is confronted with the problems of complexity, uncertainty, and time pressure;
- analytic methods and political procedures are required that are not sufficiently well known or not yet adequately tested; and,
- to make anticipatory action possible, institutional arrangements and special administrative skills are required such as enacting of measures and programs.

For many practical reasons, turning to prevention does not make ex post environmental policy superfluous, for previous damage must be rectified and unforeseen problems dealt with. Pragmatically speaking, ex ante and ex post approaches complement each other in environmental policy, much as they do, for instance, in medicine.

A second essentially different view of preventative environmental policy is possible, a view that can be called "Ecological modernization of other policy areas." Along with and beyond established environmental policy — control of air and water quality, noise abatement, and waste disposal — the decisions in other established policy areas impinge on environmental quality. This is especially true of those policy areas that have a part in regulating the material cycle and corresponding technical systems: agricultural policy, technology policy, and energy policy, in particular. In terms of preventing environmental pollution, it is interesting to ask if and how many ecological considerations, aspects, and approaches have been incorporated into these traditional policy areas, or if ecological patterns of thinking can be gradually introduced and practiced in policy areas relevant to the natural environment.

The expectations regarding environmental policies in which the aspect of prevention is more pronounced than in the past should not be placed too high, however. Even future environmental policy will not be geared solely to avoiding damage but, at best, to limiting it more effectively than conventional environmental policy has.

Environmental information and reporting

Whereas ad hoc environmental protection measures are designed to deal with individual acute and, hence, known problems, preventative environmental policy keys in on environmental damage that might occur. This involves many interdependent impacts and complexly interrelated variables. Therefore environmental policy oriented

toward prevention requires better, comparatively sweeping and comprehensive information and the information aspect can be explored along three main questions:

- What special information does preventative environmental policy require, and how should a corresponding system of environmental reporting ideally be shaped?
- Where do these types of approaches already exist?
- Which factors promote environmental reporting relating to prevention and which work against it?

Principles of environmental reporting: Preventative environmental policy can be understood as active, longterm structural policy, focusing particularly on the ecologically sound development of economic, technical and social structures. Unlike conventional environmental policy, which is organized according to media, preventative environmental policy thus relates more to the structural conditions giving rise to environmental problems. Unlike conventional environmental policy, which is oriented toward treating special and dangerous situations, preventative environmental policy centers on the everyday forms of production, consumption, communication, and transportation.

From these characteristic features of preventative environmental policy emerge the goals and main areas constituting the ideal type (*Idealtypus*) of continuous environmental reporting: information is required about how the complex conditions at the root of environmental problems develop. Thus information about environmental pollution at the end of the chain of effects (disposal, resulting damage) must be supplemented by more information about causes, especially about:

- the development of polluting emissions and the originating levels of waste;
- the consumption or degree of use of resources, for instance, energy and land;
- the technical processes and the products that pollute the environment; and, on the other hand,
- the development of those economic sectors, systems of transportation, types of consumption and ways of life with relatively low environmental impacts.

Environmental reporting oriented toward prevention, thus aims primarily at providing a continuous flow of information about the structural development of the economy and society from an environmental point of view. This approach must make it possible to recognize environmentally relevant developments in time to avoid a situation that reduces or even eliminates the alternatives for action.

Conceptual approaches and applications of preventative reporting: Several countries and international organizations have developed conceptual approaches to environmental reporting that take up the aspect of prevention.

● The Materials/Energy Balances (MEB): The Bureau of Statistics of the United Nations has put forward draft guidelines for MEB as part of a comprehensive concept for environmental statistics.⁴ This statistical system is designed to "reconstruct" the cycle of material and energy from their procurement and conversion from natural resources to final use — and from there back

to the natural environment (as waste) — or to further use in the production process — through recycling. In a certain sense, MEB can be considered as the input-output method being applied to environmental matters. This system needs data about:

- production, consumption and the stock of resources;
- the flow of resources through production and conversion processes and consumption sectors;
- production, depreciation and inventories of durable goods; and
- the relationships between economic activities and the generation and distribution of waste.

Considering the statistical capacity of most countries, this system is thus highly demanding. It can also be criticized for its failure to consider the impacts environmental pollution has on human health. So far only some case studies have made practical use of this approach.

● The Stress-Response Environmental Statistical System (STRESS): The focus of STRESS is on the relationship between production/consumption activity and the change in the state of the environment; it differentiates between "preventative" and "curative" measures.⁵ The use of this system requires data about:

- *stress*; activities contributing to impacts on the environment,
- *response*; the observable effects of stress on the environment, and
- *activity*; collective and individual reactions to environmental changes, conservation measures.

The STRESS system was used in a case study of the lower St. Lawrence River in Canada and in combination with ecological investigations. The Economic Commission for Europe (ECE) has presented a study on the practicability of the system for structuring compendia of national statistics.⁶ The STRESS system was considered an important instrument for recording environmental phenomena and improving the data base relating to the natural environment.

It must be emphasized, of course, that these and similar systems do not exhaust the possibilities and points of departure for supplying the information on which to base preventative environmental policy. In particular, the systematic screening of micro and macroeconomic accounting from an environmental point of view should be mentioned here.⁷ All in all, however, a convincing and theoretically founded environmental reporting is still not yet available.

● In the Federal Republic of Germany, in this comprehensive view, preventative environmental reporting is still in its beginnings, and the respective work has just entered the project stage. From the most important series of reports on the state of environmental quality and environmental protection, the following can be concluded:

Most environmental reporting in the past has consisted of reports focusing on specific media — primarily the quality of air and water — and of reports on the type and development of specific environmental impacts — noise, waste, radiation. This includes the media-specific reports prepared by the state governments (*Laender*), the Federal Authority for Environmental Affairs (*Umwelt-*

tbundesamt), and regional institutions (such as the Commission for the Protection of the Rhine River (*Rheinschutz-Kommission*), the clean-air plans of individual *Laender*, relevant passages in reports by the Council of Experts for Environmental Issues, (*Sachverständigenrat*), various sections in the materials relating to the *Umweltbundesamt's* report on emission control,⁸ and — last but not least — the *Umwelt-Atlas* by Koch and Vahrenholt.⁹

Cross-media reports on environmental quality are rare. Among the *Laender* there has been a trend in recent years, spurred primarily by efforts in Baden-Württemberg, to report more systematically on ecological relationships and to improve the quality of such work. One example of this is the recent environmental report prepared for Rhineland-Palatinate.¹⁰ That document, too, is organized according to the state of the environment in individual environmental media, but various areas relevant to prevention — such as transportation systems and types of farming — are included. The state of this kind of reporting is not at all uniform, however. Some *Laender*, for example, have merely circulated certain kinds of political campaign pamphlets highlighting environmental issues; others have produced no comprehensive report on environmental quality so far. A systematic approach to environmental reporting that combines media-specific and cross-media information has been worked on at the *Umwelt Bundesamt* for some time ("Daten zur Umwelt"), but were published only recently.¹¹

Reports on environmental protection activities have been customary for many years at the local, state and federal levels. Recently, there has been an increasing number of reports on measures in the energy sector — conversion to district heating, energy conservation, etc. — in which environmental considerations had originally been peripheral at best. As a rule, the reports itemize the measures concerned, their costs, the degree to which the measures have been implemented, or the observable results. Thus these separate bits of information are not yet sufficiently integrated, weighed or evaluated.

Data on sectors of the economy relevant to prevention, like environmentally demanding production, technology, and transportation systems, so far appear for the most part outside official and unofficial environmental reporting.

Summing up, it is clear that environmental reporting in the Federal Republic of Germany — much as in other countries — is still underdeveloped as far as preventative policy is concerned. Whereas there is a preponderance of media-specific reports, which focus on damages rather than causes, environmental reporting that deals with prevention — and causes — is just beginning. Much of the information needed for such reporting, however, is contained in report series outside the environmental reporting practice.¹²

Future prospects for preventative environmental reporting

The following factors would seem to favor environmental reporting oriented toward prevention:

- Triggered by environmental damage that can no longer be overlooked, such as forest damage, environmental awareness in general, and, hence, the political pressure for an effective environmental

policy has grown in recent years. In addition, the concept of preventative environmental policy has found increasing support. Information on developments in areas causing environmental pollution and on measures that can deal with the causes effectively is therefore gaining political importance.

- Since structural data relevant to prevention are linked through intermediary channels to the acute environmental damage only, institutions depending on public legitimacy find such data less intimidating than environmental information dealing with damage itself. Furthermore, areas relevant to prevention are quite often regarded in a positive vein, energy conservation being a case in point, because of the economic advantages it involves.
- Much of the structural data relevant to prevention, and that are not only ecologically but economically socially and technologically important, are already available. Unlike data related to damage, data related to prevention need not be gathered totally anew. The costs of collecting such information is thus more acceptable.

On the other hand, certain factors make rapid development of preventative environmental reporting difficult:

- Systematically observing certain sectors of the economy, transportation, and technology from an environmental point of view and publishing the resulting data will provide an information gain for environmental institutions and the public at large, but this will simultaneously mean a relative loss of information for other institutions; information, in this way, determines the range of political power.
- The interest in "information autonomy" of those individuals, firms and authorities whose actions are to be reported on from an environmental perspective must be considered. As happens with an actual or alleged threat on "information

autonomy," environmental information oriented to prevention will therefore encounter resistance that — paired with basic political and ideological positions — can systematically frustrate efforts for improving environmental reporting.

- Finally, practical environmental policy in most countries is patterned according to the specific environmental media — air, water, noise — and not according to a systemic ecological pattern. It may, therefore, be possible to accomplish only a partial and gradual transition toward preventative environmental policy and the corresponding type of environmental reporting.

Notes

1. Research Program 1983-1987, International Institute for Environment and Society (Berlin, October 1982), p. 6.
2. Scheidewege, vol. 11, 1, 1981, p. 139.
3. Research Program 1983-1987, op. cit., p. 7 ff.
4. Report of the Secretary-General on Environment Statistics, Draft Guidelines on Materials/Energy Balances (New York, 1976).
5. Survey of Environment Statistics, "Frameworks, Approaches and Statistical Publication," Statistical Papers, Series M, No. 73, United Nations, Department of International Economic and Social Affairs, Statistical Office (New York, 1982), pp. 34 ff.
6. CES/SAEP, "Comparative Survey of National Compilations of Environmental Statistics," Working Paper (Geneva, 1982).
7. H.M. Peskin, "National Income Accounts and the Environment," in *Environmental Regulation and the U.S. Economy*, edited by H.M. Peskin et al. (Baltimore, London, 1981), pp. 77 ff.
8. Umweltbundesamt (Ed.), Materialien zum Immissionsschutzbericht der Bundesregierung 1977, 1981 (Berlin, 1977, 1981).
9. E.R.Koch/F. Vahrenholt, *Die Lage der Nation. Umwelt-Atlas der Bundesrepublik* (Hamburg, 1983).
10. Ministerium für Soziales, Gesundheit und Umwelt des Landes Rheinland-Pfalz, *Umweltqualitätsbericht 1983*, (Mainz, 1983).
11. Umweltbundesamt (Ed.), *Daten zur Umwelt*, (Berlin, 1984).
12. V. Prittwitz, "Der Informationsaspekt präventiver Umweltpolitik," Working Paper, International Institute for Environment and Society (Berlin, 1984).