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World Ecology
and Global Environmental Governance

by

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INTRODUCTION

Environmental problems have always been part of our history, of life, and work. Yet the way in which environmental problems are perceived and politicized has changed: If it was at first chiefly local and regional environmental problems that were recognized, in recent years global environmental problems that have been a major cause of concern. Global problems can be tackled only by means of an internationally coordinated, global environmental policy; local and regional environmental policies have to be integrated into this context.

Global environmental policy has meanwhile become a highly dynamic policy field. The first United Nations Conference on the Human Environment (Stockholm 1972) is generally regarded as its starting point. Since then a good number of environmental accords, both national and bilateral, but, in numerous cases, also multilateral and global, have been signed. The efforts undertaken thus far are, however, not comprehensive enough, and they do not appear to be sufficient. So there is still a wide policy-implementation gap between ongoing environmental degradation and the environmental agreements that have been agreed upon and the compliance record that can be noted for them.

This skeptical balance is, however, not without some positive aspects on the credit side: Recent years have seen the negotiation of new global environmental conventions, and already existing accords have been specified through implementation protocols. However, further efforts are needed to mould effective regulatory instruments out of the given environmental agreements. Direct as well as indirect instruments should be used toward that end. Furthermore, it would be essential to start restructuring environmental policy within the United Nations system and to look into the feasibility of establishing a new World Environment and Development Organization.

Figure 1

CAUSES OF ENVIRONMENTAL DEGRADATION

In essence, three causal complexes seem to be responsible for the degradation or destruction of the environment: First, both nonrenewable and renewable resources are being overused. This complex includes, inter alia, the exploitation of fossil energies and the clearance of forests for firewood to make way for agricultural and industrial uses. Second, natural sinks are being overburdened. Thus, for instance, accumulations of heavy metals in soils and greenhouse gases in the atmosphere are reaching ever higher concentrations. Third, more and more ecosystems are being destroyed or decimated to make way for man's habitat, for settlements, industrial plants, and physical infrastructures.

Prior to the industrial revolution environmental pollution caused by human activities was generally of a *local or regional nature*. Today the focus of scientific and political concern is above all on *transboundary* or *global environmental problems*. One example is the greenhouse effect, which is leading to an increase in the average global

temperature, with numerous though largely uncertain ecological, social, and economic side-effects.

Aside from truly global environmental problems, there are also *environmental problems that occur universally*. Though local or regional in scope, these may occur everywhere. Examples would include growing water scarcity or the degradation of soils, both of which are problems that are best handled at the local or regional level - though an international strategy seems necessary and would be helpful (German Advisory Council on Global Change 1996).

Most environmental problems are caused by *consumption* and the excessive *throughput of resources* associated with it. There is a close link between lifestyle or level of material consumption and environmental degradation. During the course of his life a person living in an industrialized country consumes on average more goods and pollutes the environment more heavily than 30 to 50 people in developing countries. Global consumption reached a new peak in 1998, with 24 trillion US dollars being spent, twice the figure for 1975 (UNDP 1998, pp. 4ff.).

This consumption is, however, highly unevenly distributed: The richest 20% of the world's population are responsible for some 86% of all private consumer spending, while the poorest 20% account for only 1.3% (see *Table 1*). The disparity typical of the CO_2 emissions that go hand in hand with the distribution of consumption, one of the main factors responsible for the greenhouse effect is the following: While in the U.S. in 1995 20.5 tons of CO_2 were emitted per capita, the equivalent figure for India was roughly one ton per capita. Relatively speaking, this means that nearly one quarter (24.1%) of all global CO_2 emissions originates in the U.S. (WRI 1998, p. 345).

Long-term trends in material consumption									
Con-sump-tion sector	Year	World	Indus-trial-ized coun-tries	Subsa-haran Africa	Arab countries	East Asia	Southeast Asia and Pacific	South Asia	Latin America and the Caribbean
Elec-tricity in bn. of kilowatt hours	1980 1995	6,286 12,875	5,026 9,300	147 255	98 327	390 1,284	73 278	161 576	364 772
Energy in mn of tons of oil equi-valent	1975 1994	5,575 8,504	4,338 5,611	139 241	67 287	407 1,019	102 296	180 457	306 531
Gaso-line in mn of tons	1980 1995	551 771	455 582	10 15	12 27	11 38	8 19	6 13	48 72
Cars in mn	1975 1993	249 456	228 390	3 5	2 10	0.5 7	2 7	2 6	12 27
Source: UNDP 1998, p. 56									

Table 1

To depict consumption effects, the World Wide Fund for Nature (WWF) has developed an six-component *'consumption pressure'* indicator: grain consumption, consumption of marine fish, wood consumption, including paper, drinking-water abstraction, CO_2 emissions, and cement consumption (as an expression of land consumption) (WWF 1998, p. 4). Apart from the traditional industrialized countries, the Asian Tigers and Chile top the list here (see *Figure 2*). Considering the trends, there can be no doubt that in the future production and consumption will have to be decoupled from resource use. This will mean making more efficient use of available resources, an approach for which numerous examples could be cited. The study 'Factor Four' alone lists 50 possible ways to enhance resource effectiveness (von Weizsäcker et al. 1995). Beyond individual cases, however, it seems that not enough is being done to implement this concept in practice.

Figure 2

Consumption is not the only factor burdening the environment, there are also other causes of environmental degradation. *Degree of industrialization* is a highly relevant factor in this connection. The first surges of industrialization were accompanied by environmental degradation, with air, soils, and bodies of water being heavily polluted. The fear is that in the course of their industrialization the developing countries may degrade the environment in much the same way as the industrialized countries have done - unless it proves possible to decouple the use of energy and materials from the growth of gross national product (GNP).

Apart from industrialization, population growth is a further cause of environmental degradation. If overall population growth is not slowed down, it will, on the one hand, exacerbate the consequences of industrialization. On the other hand, rapid population growth has a tendency to lead to the impoverization of large segments of the population. Poor people tend to overuse natural resources such as forests and soils, poverty in this case being responsible for environmental degradation. Recent United Nations population projections have revised growth figures downward. Still, a doubled world population, with the attendant environmental problems, continues to be seen as a real possibility for the end of the century.

THE NEED FOR ACTION: STRENGTHENING GLOBAL ENVIRONMENTAL GOVERNANCE

Though still young, environmental policy is a highly dynamic policy field. It is marked by several *peculiarities:* To begin with, the need for an international environmental policy had to be recognized in the first place, while other policy fields, like security policy, have always constituted a fixed element in the canon of the tasks incumbent on the state. Environmental policy is at present under strong pressure and is therefore caught up in a permanent process of learning and adjustment. Pressing new ecological problems are emerging that call for regulation. There is often no clear-cut chain of cause and effect, however, and this gives rise to uncertainties for political decision-making. And these uncertainties may be aggravated by the close interrelations of environmental policy with other policy fields, in particular with economic policy and international trade.

Environmental policy has its origins in the industrialized countries in the 1960s. It was here that pollution of air, soil, and water became openly manifest. It was clear from the beginning that this pollution was diminishing people's quality of life. It was also recognized that, thanks to prevailing consumption patterns and exponential economic growth, some nonrenewable resources (e.g. fossil energy sources) would be exhausted within the foreseeable future. It was in this way that the need for political action became clear. The fact that environmental degradation was recognized as a national problem was due in large measure to the work of citizens' initiatives and nongovernmental organizations (NGOs). Apart from pointing to the problems, they also mobilized popular opposition to individual industrial and infrastructure projects, in this way contributing to awareness-building and the process of ecological sensitization.

These developments first initiated an era of *domestic environmental policy* for which efforts were largely restricted to national, or at least proximate, ecological problems. It was the U.S. that paved the way here by establishing, in 1970, the first major national environmental authority, the Environmental Protection Agency (EPA). After the 1972 UN Conference on the Human Environment in Stockholm, some other industrialized countries followed suit, creating ministries or agencies responsible for protecting the environment. Germany was a straggler here. Its environment ministry

was not created until the Chernobyl accident in 1986, though an initial environmental policy plan had been elaborated as early as 1971, a step followed by the establishment in 1972 of an environment department in the internal affairs ministry and in 1974 by the opening of the Federal Environment Office [*Umweltbundesamt*] in Berlin.

The successful establishment of national environmental policies and institutions, however, made it increasingly clear that environmental pollution and resource degradation must also be approached at the *international level*, since, apart from its national character, the environment also has the character of an international or global common. Many environmental problems have transboundary impacts, their spread depends on geographic or climatic factors which know no state boundaries. On the other hand, environmental problems are closely linked with the growth of the world economy and international trade, which has expanded enormously in recent decades. We need think here not only of the trade in hazardous substances but of ecologically harmful products, techniques, and wastes as well.

Aside from growing ecological interdependencies, the complexity of physical-chemical cause-and-effect relations is one further reason for an environmental policy conceived along international lines. We are often faced with persistent effects or indeed irreversible environmental damage so severe that they can be dealt with, if at all, only by means of joint international efforts. The great number of political actors involved, with their often highly contradictory interests and divergent economic and technical capacities, are a further reason for the need for internationally coordinated action. And it is not least the close intertwinement of environmental policy with other policy fields such as economic, development, and security policies that suggests internationalizing the former, especially in view of the fact that in these policy fields important decisions have long since been taken at the international level.

At the level of the United Nations it is also generally recognized that environmental policy is in need of strengthened cooperation. As early as 1968 the UN General Assembly scheduled a *UN Conference on the Human Environment*, which took place in Stockholm in 1972. This first 'environmental summit' was marked by a clash of interests between North and South. Many developing countries failed to recognize environmental degradation as a problem in need of regulation. Some of them saw environmental protection as pure luxury, and insisted on their right to industrial development and economic growth. For their part, the industrialized countries were still in the initial phase of their efforts to institutionalize environmental protection and translate it into concrete programs.

There are two reasons for the fact that the Stockholm summit met, as is generally agreed, with success in spite of these conflicting interests. First, the conference laid the cornerstone of an international environmental policy. It was in particular the adoption of the *plan of action* and the *declaration* that, for many countries, constituted the basis of national environmental legislation in the years that followed. A second important result of the Stockholm summit was the establishment of the United Nations Environment Programme (UNEP) [see box on *UNEP*].

Just about 20 years later, the first environmental summit was followed by a second, important world conference, the *UN Conference on Environment and Development* (UNCED) in *Rio de Janeiro*. It was attended by delegations from more than 175 countries as well as over 1 400 NGOs. In essence, this conference was initiated through the work of and the report published by the World Commission on Environment and Development in 1987 (the so-called *Brundtland Report*). Among other things, this report injected the concept of *sustainable development* into the international discussion [see box on *Sustainable Development*]. The report made it clear that the efforts undertaken thus far by nationally oriented policy were not sufficient and called for further globalization of environmental policy.

UNCED's goal was a rather ambitious one: Proceeding from the available knowledge on the extent of global environmental degradation and worldwide social immiseration, the conference's aim was to identify approaches to a sustainable development in both North and South for the coming century. However, instead of the necessary global and sense of long-term responsibility required of the main actors concerned, the negotiating stances of the participating countries were determined by short-term economic and political interests. Many industrialized countries at first dragged their heels, refusing to cooperate. At the same time their intransigence also reinforced some developing countries in their attitude of rejection. This attitude took on the shape of a willingness to engage in environmental efforts at home only if the North consented to transfer both technologies and additional funds to the South.

The United Nations Development Programme (UNEP)

UNEP was established in follow-up to the first United Nations environmental summit, held in Stockholm in 1972. UNEP is based in Nairobi, Kenya, which makes it the first UN body to be headquartered in a developing country. UNEP is a 'program' (i.e. a secondary organ) of the UN, not a specialized agency with a specified membership and legal personality of its own. UNEP's goal is to coordinate and consolidate existing efforts in the field of environmental protection. Furthermore, UNEP has the task of developing contacts with private groups and economic actors. A further task is to provide information on the environment as a means of giving early warnings about impending environmental threats. UNEP is funded mainly via voluntary member-state contributions, but also on the basis of the regular UN budget as well as additional contributions. In the 1998/1999 fiscal year UNEP had a budget of US$ 107.5 million.

Decisions on UNEP's programmatic orientation and the deployment of its funds are taken by its 58-member administrative council. This body is elected by the UN General Assembly, in keeping with a regional key, for a four-year term of office. Its one-country-one-vote principle ensures that the body has a majority from the developing countries. The decisions taken by the administrative council are carried out by the UNEP secretariat. UNEP is run by its executive director, who is elected by the General Assembly. Since April 1998 this has been Klaus Töpfer, a former German environment minister.

Many observers regard UNEP's work as weak and unsatisfactory, and this perception has led to the advancement of a number of reform proposals from both political and academic circles. The proposals generally aim at upgrading UNEP. An initiative by Germany, Brazil, South Africa, and Singapore launched at the 18th Special Session of the General Assembly in 1997, for instance, called for the establishment in the medium term of a UN organization for global environmental issues. But since this proposal was linked neither with ongoing environmental debates nor with general efforts to reform the UN, the response it met with was very reserved. It was suspected that this was more a publicity-oriented action than a serious proposal. The fact that even today - three years later - still no measures have been taken to set up such an institution tends to confirm this hunch.

But the report of the 'UN Task Force on Environment and Human Settlement', presented in June 1998, contains concrete proposals for restructuring UNEP. Its recommendations include not only merging UNEP and HABITAT but also closer cooperation between, or indeed fusion of, the various convention secretariats, and intensified efforts toward coordinating international environmental policy, and these efforts would include participation of representatives of civil society.

Some of these demands have been met, at least nominally; since Rio the principle of *common but differentiated responsibility* has been anchored in all multilateral environmental agreements. This means that the North has acknowledged its responsibility as the main historical source of environmental degradation. The North has at the same time also conceded to the South scopes for further economic growth and a certain right to continue to burden the environment. Structural analysis of the international treaties on the protection of the ozone layer, the Montreal Protocol, the climate, biodiversity, and the law of the seas convention has shown that the developing countries have in this way gained new and greater bargaining power (Biermann 1998).

Sustainable Development

Sustainable development is a normative concept which seeks to find a balance between economic efficiency, social cohesion, and ecological stability. The Brundtland Report chose a definition that led to intense controversy throughout the world: The task facing the world, the commission noted, is to satisfy the needs of today's generation without jeopardizing the chances of future generations to satisfy their needs.

Normative definitions inevitably take on a contentious hue when we seek to concretize them. Different interest groups may differ in the emphasis they place on the concept's components: For some, the economic component is more important than the social and the ecological component, while others may tend to reverse these priorities. Put figuratively, the sides of this new 'magic triangle' differ in length in the public, social, and scientific discourse. The underlying concept, though, rests on the assumption that this triangle is an equilateral one, and that the economic, social, and ecological goals and decision processes it exemplifies are of equal import.

In spite of the in part sharply contrasting interests with which it has to contend, in the 1990s UNEP produced some significant results. It was instrumental in the adoption of three declarations or programs - the *Rio Declaration*, the *Forest Declaration*, and *Agenda 21* - and the signing of several conventions binding under international law - in particular the *Climate Convention* and the *Biodiversity Convention*.

While the two last-named conventions are undergoing further development in the framework of regular conferences of the parties, the Commission on Sustainable Development (CSD) was placed in charge of verifying the implementation of Agenda 21 [see box on the *Commission on Sustainable Development* (CSD)]. The CSD prepared

the 19th Special UN General Assembly session dedicated to this topic, which took place in June 1997 in New York. This *'Rio + 5' Conference* was to evaluate the existing and planned measures aimed at ending poverty- and civilization-related environmental degradation and reinvigorating the 'spirit of Rio'. It turned out in the end that the parties' commitment to the model of sustainable development was of a more declamatory nature, while concrete action was being determined largely by strategies of privatization and deregulation. One sign of a setback vis-à-vis the view prevalent in Rio in 1992 was that the parties were unable to agree on a final *political* declaration. While the 1997 final New York document does contain a description of the problems, confirming that the state of the environment had further deteriorated five years after Rio, no consensus was possible on the analysis of causes and on the formulation of measures designed to counter them.

The UN Commission on Sustainable Development (CSD)

The initiative to set up a new UN commission goes back to Agenda 21, adopted in Rio de Janeiro in 1992. The UN General Assembly took up the proposal in December 1992, establishing the Commission on Sustainable Development and placing it under the responsibility the UN Economic and Social Council (ECOSOC). The CSD has 53 members who are elected in keeping with a regional key. It has in essence three tasks: to monitor the implementation of Agenda 21 at the local, national, and international level; to work out political options and guidelines for the follow-up to Rio; and to contribute to building and deepening dialogue and partnership between governments, the international community, and civil society.

The Commission's cross-cutting aims up to the year 2003 include, inter alia, reduction of poverty and altered patterns of consumption and production. The CSD deals annually with different priorities, for instance, with the issue of financial resources, with trade and investment, economic growth, and sustainable agriculture.

The initial hope that as a new institution dedicated to cross-cutting issues the CSD would be able to play an important role in global environmental and development policy has diminished considerably. One reason for this is that the most important environmental and development-related decisions continue to be taken in sector-oriented structures; the other is that it is for the most part only environment and development ministers are represented at CSD conferences, not, however, the ministers responsible for financial, economic, or foreign affairs.

GLOBAL ENVIRONMENTAL GOVERNANCE: AIMS, INSTRUMENTS, AND INSTITUTIONS

The Stockholm and the Rio de Janeiro conferences are important landmarks of the emerging global environmental-policy architecture. The main means used to establish principles, standards, rules, and procedures for a given problem area are *international environmental regimes.*

The *ozone regime* can be cited as an example of a successful international environmental regime. The ozone regime regulates the production and consumption of ozone-depleting substances, particularly chlorofluorocarbons (CFCs), and it is intended to check and rectify the depletion of the stratospheric ozone layer. The regime is based on the *Framework Convention for the Protection of the Ozone Layer*, signed in Vienna in 1985. This convention contained no concrete reduction targets, though it defined the means by which the signatories were to cooperate in reducing, limiting, or preventing activities that deplete the ozone layer. Proceeding from this agreement on common principles and standards, the follow-up process has succeeded in specifying targets. The most important step was the signing of the 1987 *Montreal Protocol*, which, for the industrialized countries, provided for a 50% reduction of the most common CFCs as well as a freeze on the production and consumption of halons. These goals were tightened up at the subsequent conferences of the parties to the protocol in London and Copenhagen (1990 and 1992). These conferences decided on accelerated phase-out timetables and included additional ozone-deleting substances in the reduction agreements. In accepting the setup of an instrument of financial and technology transfer (the so-called Multilateral Ozone Fund), the developing countries likewise declared their willingness to join the regime and to assume specific obligations. The outcome was a roughly 85% reduction in the worldwide consumption of CFCs by the year 1996 (compared with 1987 levels; UNEP 1998, p. 6). An additional reduction of CFC consumption is likely for the future, since it was only in 1996 that some newly industrializing and developing countries initiated reduction measures of their own (see *Figure 1*).

Further international regimes - modeled for the most part on the ozone regime - have been set up for other environmental media as well. The *Framework Convention on Climate Change* signed in Rio de Janeiro is likewise conceived as a framework

agreement to be concretized and implemented with the help of protocols. The *Kyoto Protocol* was a first step in this direction. This protocol, negotiated at the third conference of the parties in December 1997, for the first time sets out legally binding reduction targets for six greenhouse gases (carbon dioxide, methane, nitrous oxide, CFCs, perfluorated carbons, sulfur hexfluoride). Accordingly, within the timeframe of 2008-2012 (the so-called first budget period) the industrialized countries are obliged to reduce their emissions by an average of 5.2%, the EU by 8%. These targets are to be reached by increasing energy efficiency as well as by means of flexible mechanisms [see box on the *Kyoto Protocol*]. At the fourth conference of the parties in Buenos Aires in November of 1998 it was decided to reach agreement by the year 2000 on the flexible mechanisms at the sixth conference of the parties in The Hague.

The Kyoto Protocol

Acclaimed by some as a decisive breakthrough in global climate policy, the Kyoto Protocol all the same contains some weak points which will be outlined and discussed in what follows:

1. Low reduction rates: The Intergovernmental Panel on Climate Change (IPCC) noted that by the year 2050 it is necessary for the world's greenhouse-gas emissions to have been reduced to 60% of 1990 levels (this means cuts by the industrialized countries of more than 80%) if the earth's climate system is to be stabilized. In view of this long-term target, the average -5.2% agreed upon in the Kyoto Protocol for the industrialized countries for the years 2008-2012 (first budget period) appears highly inadequate. In anchoring binding targets, however, the protocol did take a first step in the right direction. In the future it will be necessary - in analogy with the ozone regime - to tighten up reduction targets, setting a dynamic process in motion.

2. Dubious distinctions between the industrialized countries: While the EU is forced to cut its emissions by 8% by the first budget period (2008-2012), the figure for Japan and the U.S. is 7%, while Australia is allowed to raise its emissions by 8%, Island by 10%, and Norway by 1%. This outcome of the talks appears arbitrary to most observers.

3. Erosion of targets due to 'flexible mechanisms'? The Kyoto Protocol defines as flexible mechanisms international emissions trading (ET), joint implementation (JI), the clean-development mechanism (CDM), the bubble concept, and the inclusion of sinks.

With a *trade in emissions* envisioned for the future, countries with 'few' or 'too many' emitted substances will be able to come together as trade partners, dealing in emission rights. A large part of this trade is likely to develop between the Western industrialized countries, the Russian Federation, and Ukraine, since for the time being the agreement does not provide for any emission trading with the developing countries. Despite the

decline in their industrial output, the Kyoto Protocol allowed Russia and Ukraine to emit as much in 2008/12 as they did in 1990. Assuming that the economic situation remains precarious in the future, this could mean trade in emission contingents that exist only on paper (so-called 'hot air'). This would not help the global climate system. In general, however, the crucial advantage of emission trading is quite evident: the instrument can be adjusted with an eye to the ecological situation and is highly advantageous in economic and efficiency terms.

As for other, flexible instruments, the industrialized countries are allowed to meet part of their reduction obligations by carrying out projects in other countries. If such projects are conducted in other industrialized countries or countries in transition (so-called Annex I countries), the Kyoto Protocol speaks of joint implementation. The clean-development mechanism (CDM) was introduced into the protocol to cover such projects carried out between industrialized and developing countries. The underlying idea is that a given country's industrial and energy-producing facilities may be converted with the help of funds and technologies from another country in such a way as to reduce greenhouse gases. The cuts achieved in this way are to be credited wholly or in part to the account of the donor country (so-called *crediting*), although the relevant permissible percentages are still a matter of dispute. One good reason for a joint effort of this sort is that it makes more sense to achieve internationally higher emission cuts for one and the same amount of money (and investment funds) than would be possible at the national level. To avoid 'ransoming practices', such measures may, however, have to be limited to certain levels (caps or ceilings). In this way the greater part of the reduction measures might have to be carried out in the industrialized countries themselves.

While it was above all U.S. arguments that led to the inclusion of the flexible mechanisms in the Kyoto Protocol, it was mainly due to EU insistence that the *bubble concept* was adopted. It concedes to individual countries the right to join forces with others to form a 'bubble', in this way jointly meeting the reduction targets set out under the protocol. While the EU's argument was that as a regional organization it was automatically entitled to form a 'bubble', other countries are now also allowed to join forces to form such bubbles.

Inclusion of sinks: Sinks are the places in which CO_2 is stored or sequestered, e.g. in forests, soils, and the oceans. The Kyoto Protocol provides for making allowance for sinks in the process of verifying compliance with the national reduction targets. In this way, aside from technical reductions of emissions in industry, commerce, and transportation, the capacity of natural sinks to absorb greenhouse gases has also been given relevance in climate policy. Accordingly, the dispute over what should be recognized as a sink, and to what extent it may be credited, is vehement. Since such decisions are definitely in need of consensus, the IPCC was asked to clarify the issue, and the decision on this instrument has been put off until the next conference of the parties.

Important International Environmental Agreements
(Selected treaties with the years in which they were signed, and came into force)

- Convention for the International Regulation of Whaling (1946, in force 1948)
- International Convention on the Prevention of Pollution of the Sea by Oil (OILPOL, 1954, in force 1958)
- Convention on Fishing and the Conservation of Living Resources of the High Seas (1958, in force 1966)
- Convention on Wetlands of International Importance, especially as Waterfowl Habitat (Ramsar Convention, 1971, in force 1975)
- Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES, 1973, in force 1975)
- International Convention for the Prevention of Pollution from Ships (MARPOL, 1973, in force 1983)
- International Convention for the Protection of the Ozone Layer (1985, in force 1998); Montreal Protocol (1987, in force 1989)
- International Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal (Basel Convention, 1989, in force 1992)
- United Nations Convention on Biological Diversity (1992, in force 1993)
- United Nations Framework Convention on Climate Change (1992, in force 1994); Kyoto Protocol (1997, not yet in force)
- United Nations Convention to Combat Desertification in Countries Experiencing Serious Drought and / or Desertification, particularly in Africa (1994, in force 1996)
- Global Convention on the International Trade in Hazardous Substances (PIC Convention 1998, not yet in force)

The year 1992 also saw the adoption of the *Biodiversity Convention*, which is designed to protect biological diversity (protection aspect) and regulate its sustainable use (use aspect). The *Desertification Convention*, adopted in 1994 and in force since 1996, is designed to combat soil degradation in arid regions experiencing serious drought and desertification. This - regionally limited - convention could, in the medium to long term, give rise to a global convention on the protection of soils. There are also many other *international environmental regimes*, such as those on the protection of the oceans, individual rivers or lakes, or specific animal and plant species [see box on *Important Environmental Agreements*].

A look at the *'degree of maturity'* of the various regimes may serve to highlight the dynamics of international environmental policy. Alongside solidly established and successful regimes like the ozone regime, there are rather weak international regimes like the *PIC Convention* (Prior Informed Consent) signed in September 1998. This convention is designed to protect man and the environment against the improper use of pesticides and other chemicals by enabling the developing countries to decide in the future whether or not to agree on importing hazardous substances.

The *POP Regime*, designed to reduce persistent organic pollutants, so-called POPs, which include DDT and accumulate in animal and human body tissues, is still in the negotiation phase. In June 1998 a commission was empanelled to negotiate an international convention by the year 2000.

Creation of international environmental regimes to regulate individual environmental problems is, in general terms, an adequate approach to dealing with such problems, though international regimes also have their weak points, particularly since they often lack provisions on dealing with noncomplying countries. Furthermore, an approach geared to specific media or sectors can unduly divert attention from existing interdependencies. If each and every international regime builds up its own institutional apparatus (with secretariat, conference of the parties, advisory boards), this could also lead to fragmentation and discrimination of the developing countries. Thanks to their low capacity as regards funding and manpower, these countries are often neither able to participate in the conferences nor in a position to provide sufficient support and funding to implement the signed environmental regimes.

Aside from the diversity and numerousness of the actors involved, the issue of interlinking the individual *policy levels* in environmental policy is increasingly proving to be a precarious problem. International resolutions are signed by governments, though they can take effect only when they have adopted and implemented at the local and regional level. The *Local Agenda 21* movement, with its goal of implementing sustainable development at the municipal level, is symbolic of this [see box on *Local Agenda 21*]. This movement shows that it is only through a coordinated effort involving all the different levels of politics - from the local to the national, up to the global level - that an effective environmental policy can be developed and implemented.

Local Agenda 21

Agenda 21, adopted in Rio de Janeiro, underlines in Chapter 28 the role of municipalities in implementing sustainable development. Municipalities have an important role to play in setting up, administering, and maintaining economic, social, and environmental infrastructure, contributing in this way not only to municipal but also to national and international environmental policy. Agenda 21 therefore calls on the world's municipal administrations to enter into a dialogue with their citizens, public organizations, and the private sector at large as well as to adopt their own local Agenda 21 (LA 21).

By the end of 1996, already more than 1800 municipalities in 64 countries had embarked on such LA 21 processes, most of them, though, in industrial countries. In the meantime their number has grown considerably. Generally, participation of municipalities is greatest in the countries where there are national platforms on Agenda 21 or other coordinating institutions.

In Germany, for instance, in the year 2000 more than 1 200 municipalities are involved in the Agenda 21 process. In view of Germany's total of 16 000 municipalities, though, this may not seem much. In Italy some 30% of all municipalities are participating in the Agenda 21 process, in the UK the figure is nearly 60%, and in Norway 99% of local communities are involved.

New Actors

If environmental policy was, in its infancy, understood basically as domestic environmental policy, only later taking on the role of external environmental policy - the state being in both cases the central actor - we can now speak without reservation of *global environmental policy*. This, however, does not imply that the day of the state as the primary actor of politics is over or that the state should or could be released from its responsibility in this regard. What is meant is that states may be overtaxed as actors when endowed with exclusive responsibility, and it is exactly for this reason that new actors are entering the stage.

Thus, for instance, over 100 cities that are responsible for some 10% of global CO_2 emissions have joined forces to forge a *'climate alliance'*. To reduce their own CO_2 emissions, these communities are stepping up their investments in local and regional public transportation, in solar technology, and in large-scale public-awareness campaigns. Using methods of this sort, the city of Toronto has within a few years managed to cut its CO_2 emissions by 20% (Flavin 1998, p. 17). Individual companies and branches of industry have announced voluntary commitments in this direction. German industry, for instance, on the occasion of the first conference of the parties to the Climate Convention, announced its intention to cut its CO_2 emissions by 25% as compared with the year 1990. States, too, have made pledges. The declared goal of the German government is to cut CO_2 by 25% by the year 2005, and a specific climate protection program ("Klimaschutzprogramm 2000") was recently launched.

Alongside cities, municipalities, and industry, other, *nongovernmental organizations* (NGOs) are active in environmental policy, including large international NGOs like Greenpeace, WWF, or Friends of the Earth. The increasingly close interaction between states and NGOs may be regarded as a special characteristic of global environmental policy.

This interaction becomes particularly clear when we consider the role of NGOs at environmental conferences. At the first UN environmental conference in Stockholm in 1972 only 255 NGOs were accredited as official participants, at the second conference in Rio de Janeiro in 1992 there were over five times as many NGOs officially represented. While the first NGOs to be accredited were internationally active ones, since 1996 national and local NGOs have been officially welcome as well [see *Table 2*].

The involvement of NGOs influences the course and the outcome of conference diplomacy. While 'green' NGOs, offshoots of the environmental movement, are generally concerned to tighten up political regulations with a view to protecting the environment (the environmental 'activists'), industry-oriented 'gray' NGOs are for the most part to be found on the side of the environmental 'heel-draggers'. Existing alliances of states are in this way influenced in the one direction or the other by accredited NGOs. The climate negotiations, for instance, saw the emergence of a special alliance consisting of environmental NGOs, the small island countries potentially affected by the greenhouse effect (the Association of Small Island States - AOSIS), and - in issues concerning details - member countries of the EU. On the other hand, the oil-exporting countries (OPEC) have often enjoyed the support of NGOs set up by the oil industry. This shows that while on the one hand new alliances can

be built to support an effective environmental policy, the involvement of NGOs can on the other hand also strengthen the hand of the 'eternal nay-sayers'.

Accreditation of NGOs to Environmental Conferences		
Year	Environmental conference	No. of accredited NGOs
1972	UNCHE Stockholm	255
1992	UNCED Rio	1 420
1994	Biodiversity Convention: 1st conference of the parties	106
1995	Climate Convention: 1st conference of the parties	177
1996	Climate Convention: 1st conference of the parties	212
1996	Biodiversity Convention: 1st conference of the parties	264
Sources: Feraru 1974, p. 33; Morphet 1996, pp. 124ff.; Yamin 1997, pp. 8f.		

Table 2

The assessments of the increased admission of NGOs to official negotiations among states tend to differ: While some observers see this as an act of *democratization* of international negotiations, others question the *legitimation* of NGOs, since they may not be elected and may not be obliged to account for or justify their activities. But it is a fact that NGOs offer a variety of services such as inexpensive research, policy advice, and public awareness-building and contribute to toward monitoring the commitments of signatory states. It is not only in the negotiations at world summits and parallel events ('countersummits') that NGOs are active, at the local and regional level they may also be important partners in initiating and implementing environmental policy.

New Instruments

One institutional innovation that has been gaining ground in connection with the globalization of environmental policy since the mid-1980s is the enlargement of the

set of instruments used for *direct control*. Financial and technology transfers provide the developing countries with incentives to assume and meet international obligations. New mechanisms of financial and technology transfer have been anchored in nearly all international environmental regimes. In 1990, for instance, the Multilateral Ozone Fund was set up within the framework of the Montreal Protocol. The fund, which is supported on a voluntary basis by the industrialized countries, is used to finance the setup of CFC-free plants and technologies in developing countries (so-called *conversion*). Another important instrument is the Global Environment Facility (GEF), which is used to finance projects under different environmental regimes [see box *The Global Environment Facility (GEF)*].

There are other far-reaching examples of financial and technology transfers: For instance, Article 1 of the *Biodiversity Convention* sets out a triad consisting of conservation of biological diversity, sustainable utilization of its elements, and a balanced and equitable distribution of the benefits accruing from the use of genetic resources. As guiding principles, this article provides for an adequate access to genetic resources, an adequate transfer of relevant technologies, and adequate funding. The provisions of the *Climate Convention* are similar and the Kyoto Protocol provides for the Clean Development Mechanism (CDM).

Aside from such direct instruments, means of *indirect control* can also be used to improve global environmental policy. The concern here is chiefly capacity-building: training of personnel, strengthening of national administrations, funding of relevant research, development of information and communication, establishing clearing-house functions. While capacity-building in general is conceived as the task of all countries, the primary concern here is the developing world.

New Decision-making and Negotiating Procedures

A further innovation can be seen in the manner in which decisions are prepared and taken. Recently, at the international level, a new, double-weighted voting procedure has come into being (see Multilateral Ozone Fund and GEF). While the general UN principle is 'one-country-one-vote' rule (which gives the developing countries a majority of votes), the rule governing the Bretton Woods institutions (World Bank, IMF) is that a member country has voting rights in accordance with the financial shares it holds (this 'one-dollar-one-vote' principle gives the industrialized countries the majority). In global environmental policy these two procedures have been linked

in the sensitive area of financial transfers: Both in the Multilateral Ozone Fund and in the GEF decisions are taken in accordance with a coupled procedure: In the GEF decisions require a two-thirds majority, and this majority must represent both 60% of the countries involved in the Global Environment Facility (GEF) and 60% of financial contributions to the GEF. This procedure amounts in effect to North-South parity, one that accords to both developing countries and industrialized countries an effective veto position (Biermann / Simonis 1998, p. 8).

The Global Environment Facility (GEF)

The GEF is a financial mechanism that provides funds for environmental-protection projects for developing countries and countries in transition. The projects promoted thus far have been in four areas: climate protection, protection of biodiversity and international waters, and protection of the ozone layer. The GEF was set up in 1991 as a three-year pilot project on the initiative of France and Germany. The main aim was to meet the need for financing mechanisms for international environmental protection that was addressed in the 1987 Brundtland Report.

In March 1994 the GEF was reformed, on the one hand in order to improve its information functions, on the other to give a more democratic shape to its voting procedures: In the first, pilot phase decisions on allocations of project funds were still taken by the World Bank, in which only the states that pay contributions have voting rights, today the decisions are taken by the GEF Council, which consists of 32 members; 16 of them are from developing countries, 14 from OECD countries, and two from countries in transition. Both the group of industrialized countries and the group of developing countries are able to block decisions, which means that it is necessary to seek consensus.

The GEF's financial framework was over two billion US-$ for a three-year period.

Figure 3

The increasing use of such voting procedures has led to changes in the forms of negotiation. More and more frequently, technical, economic, and political issues are negotiated separately, which means setting up several working groups or committees. Consequently, the new environmental regimes contain, beside the conferences of the parties, usually one committee each for technical questions and implementation issues. This differentiation of the communication process (and 'depoliticization' of technical questions) has, though, occasionally gone wrong. For instance, the subcommittee on scientific and technical questions of the biodiversity regime (the Subsidiary Body on Technical and Technological Advice, SBSTTA) has developed into a 'mini-conference of the parties', where political issues are discussed controversially.

Legal Enforcement Mechanisms

The number of multilateral environmental agreements has increased enormously since the 1960s. And yet the degradation of the environment continues apace. One way of countering this development is to tighten up the rules and regulations, for instance by adopting additional protocols to existing conventions . Another possibility is to improve compliance with given rules, which would mean sharpening the legal enforcement instruments. This could include both incentives and sanctions.

At present only a few international environmental regimes feature a specific enforcement mechanism, and those that do have such a mechanism are for the most part of a cooperative nature. What this means is that the signatories are bound to undertake joint efforts to support a noncomplying state in such a way as to enable it to meet its obligations.

This type of enforcement was first practiced in the ozone regime. The Montreal Protocol provides for a reporting system which requires all signatories to disclose, in predefined timeframes, both the technical details and the measures they have undertaken to comply with the protocol. A special committee set up for this purpose, the so-called Implementation Committee, verifies the reports and may recommend to the Conference of the Parties further measures that ought to be taken. In the past years, the Committee has been concerned both with non-compliance and with cases of (unintended) self-incrimination on the part of some countries in transition. The Committee's approach has been cooperative in such cases: The countries concerned have been questioned on the reasons for their noncompliance, and a joint search for a

way to ensure future compliance has been initiated. These supportive measures (which may also include financial and technology transfers) do not rule out the imposition of sanctions. Beside formal admonitions, such sanctions may extend to cancellation of benefits already approved. All of these measures have been fixed in an (albeit legally nonbinding) list kept by the Committee.

The climate regime, i.e. both the Framework Convention and the Kyoto Protocol, is also set to be equipped with enforcement mechanisms. The member states of the EU member states in particular are calling for a swift formulation of such arrangements. They are demanding a new body with the power to impose sanctions in cases of noncompliance with the regulations agreed on.

Both the Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and the Convention on the Northeast Atlantic include legal enforcement mechanisms. Discussion is underway on the introduction of such mechanisms for other environmental regimes, such as e.g. the Desertification Convention.

Future Political Options

Global environmental policy is, as was noted, a dynamic policy field. In fewer than 30 years citizens have been encouraged to develop environmental awareness, success has been met with at the government level in creating a domestic environmental policy, and at the international level important building blocks of a global environmental policy (ozone, climate, biodiversity, desertification, oceans) have been put in place. Despite these successes, the efforts undertaken thus far are not sufficient, the environment continues to be degraded and destroyed. The tasks for the future will consequently include consolidation and expansion of the existing instruments, creation of new and strengthening of existing institutions, and, in particular, improved coordination of the interactions between the different levels of policy.

Consolidating and Expanding Existing Instruments

The core element of global environmental policy consists of the international regimes aimed at regulating a given environmental medium. Rules of behavior have now been established for nearly all globally relevant areas, except soil and water. But not all countries are in compliance with the rules, nor does this non-compliance always lead to imposition of respective sanctions. It is therefore essential that in the future additional and effective enforcement mechanisms be built into the international regimes. This would include in particular a catalogue of sanctions for cases of non-compliance, and these sanctions should be monitored continuously. Aside from supportive ('rewarding') mechanisms, this catalogue should also include 'punitive' sanctions.

Creating New Institutions

Strengthening UNEP and streamlining CSD could give global environmental policy new clout, though this minimalist strategy is certainly not the sure-fire solution to the problem. Instead of merely calling for increased efficiency and improved coordination, the time has come to look into a proposal that has been advanced for a *World Organization for Environment and Development* as a new United Nations special agency (Biermann / Simonis 1998). This new institution should, at least, integrate UNEP, the CSD, and the relevant environmental convention secretariats. UNDP, with its huge project budget, could also be integrated into it. Care would have to be taken to ensure that the new organization would collaborate with the Bretton Woods institutions, the WTO, and the other environmentally relevant UN organizations. [see *Figure 4*]

Figure 4

Coordinating the Interactions between the Various Actors

Environmental policy can only be effective if the actors involved at the different levels (local, national, regional, global) cooperate more closely. There is still a lot of work to be done here: The 'higher' levels should, for instance, define the framework and at the same time respond dynamically to initiatives from the 'lower' (local or national) levels. Environmental policy is also strongly intertwined with other policy fields, it is a cross-sectional issue. This is why more coordination is called for, an effect that could be achieved by better intermeshing institutions responsible for environmental and trade policy.

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