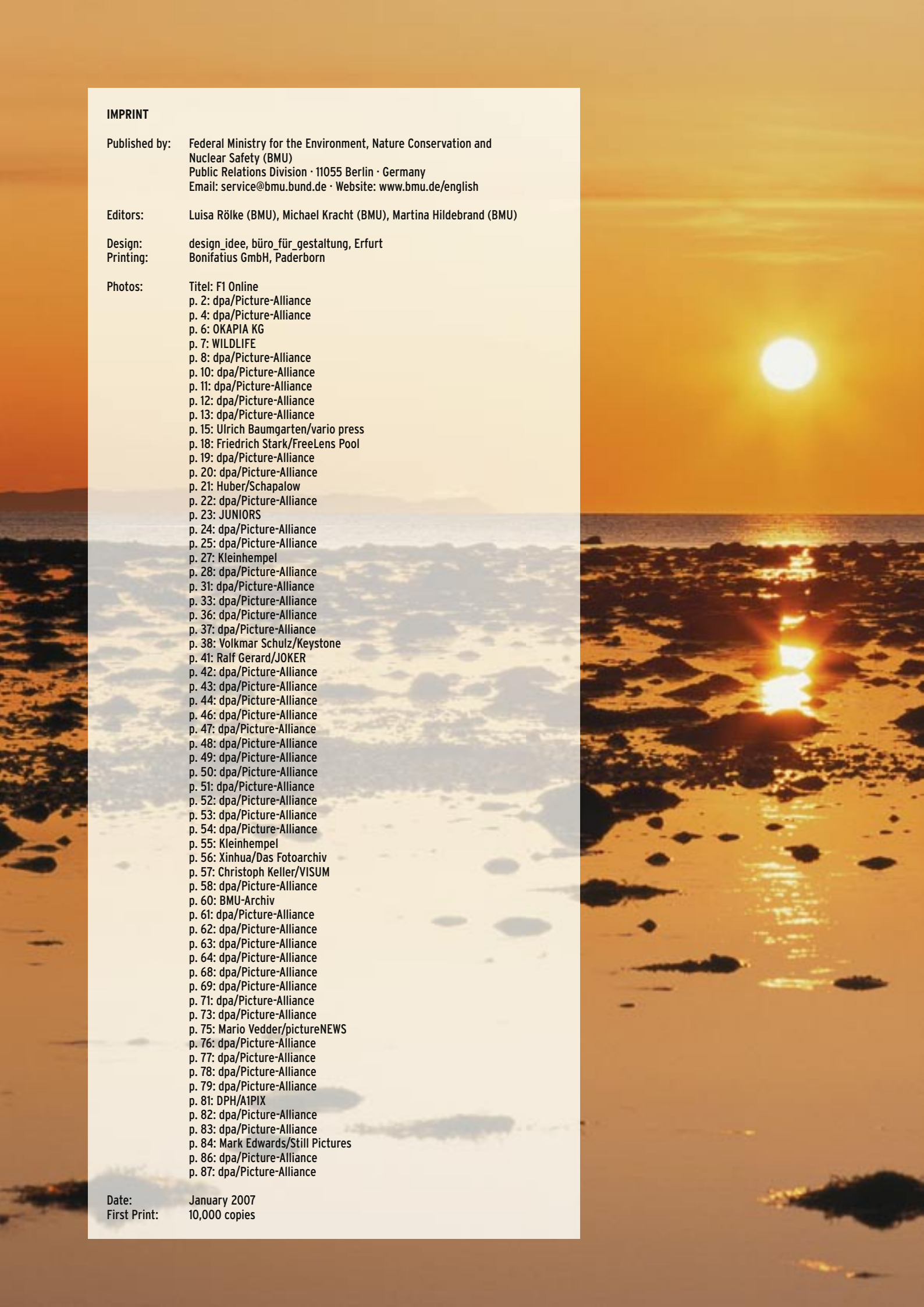
Federal Ministry for the
Environment, Nature Conservation
and Nuclear Safety

TAKING RESPONSIBILITY FOR THE FUTURE

Environmental Policy as a Global Challenge



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DEAR READERS,

In 2007 Germany takes on two important positions in international politics: the EU Presidency and the Presidency of the G8. The Federal Government aims to use this role to make progress at global level in solving the challenges of the future.

The German EU and G8 Presidencies will focus in particular on climate change and energy policy. In recent years concern about a clean and secure energy supply for the future has intensified significantly. The International Energy Agency expects demand for fossil energy to rise by more than half by 2030, if the international community does not take action to counter this. At the same time the emission of climate gases would increase, causing serious economic and social damage. Sir Nicholas Stern, chief economist for the British government, estimated that precautionary climate protection would cost around 1% of world gross domestic product (GDP). In contrast to this, losses arising from unchecked climate change would amount to between 5% and 20% of GDP per year.

Heading the agenda of international energy policy, therefore, is the same question that is posed for climate policy: how can we decouple worldwide economic growth from demand for fossil energies? The answer: with an ambitious twin-track strategy for greater energy efficiency and renewable energies, with an integrated strategy for energy and climate protection.

This strategy is the basis for an energy supply which links the goals of security of supply and climate protection without any loss of prosperity. Achieving these goals is the key challenge of the 21st century. At the same time it presents us with a great opportunity to make this century the age of sustainable energy innovations.

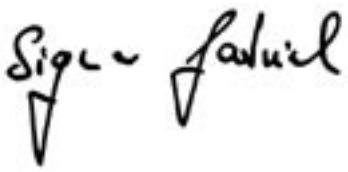
The Federal Government will support moving forward with the international negotiations on a post-2012 climate protection regime. Our aim is to prevent a global temperature rise of more than 2°C. Only this will ensure that adaptation to climate change is even possible and financially feasible. We are therefore endeavouring to ensure that the EU will commit to an ambitious greenhouse gas reduction target of 30% by 2020 compared to 1990 and elaborate proposals for the upcoming climate negotiations on how other major economies with high emissions can be incorporated.

To enable us to realise this goal, the Federal Government has placed the promotion of energy efficiency and the expansion of renewable energies at the top of its list of priorities. But this is also based on economic considerations, since those who save resources save costs and thus have a competitive edge. Scientists assume that in many sectors energy efficiency can be increased by a factor of four. Advancing developments in this direction – on a global scale – is one of Germany's key concerns. We will propose an Action Plan on Energy Efficiency to the G8 in which countries agree to take concrete measures, in accordance with the level of their technological and economic development, in order to increase energy efficiency.

In 2004 the international renewables conference took place in Bonn. It provided major impetus for the expansion of renewable energies worldwide. Economy and ecology benefit equally. In almost no other sector in Germany have so many jobs been created in recent years as in environmental technology. However, it is not only German wind turbines and solar power systems that are in demand throughout the world. The Renewable Energy Sources Act (EEG) is also an export hit. In addition to the majority of EU countries, China has now also adopted a corresponding regulation.

What is true for energy sources is in principle also true for other resources. Therefore the Federal Government is, for example, pursuing a waste policy which gives precedence to avoidance. Recovery and finally disposal take second and third place. These ambitious rules have also greatly increased the export opportunities of German industry in recent years.

In 2008 Germany will host the ninth Conference of the Parties to the UN Convention on Biological Diversity. The conference will focus on forest biodiversity and the designation of a worldwide network of protected areas. There will also be further negotiations on the equitable sharing of benefits from the use of genetic resources. Germany will intensively prepare the conference together with the upcoming EU Presidencies of Portugal and Slovenia.



Sigmar Gabriel
Federal Minister for the Environment, Nature Conservation and Nuclear Safety

INTRODUCTION: THE BLUE PLANET IN CRISIS

Looking through most old dictionaries, one will usually search in vain for entries such as "environment" or "ecology". Until the mid-1960s, these topics played a negligible role in public life. Today, by contrast, whole chapters are devoted to them in reference works. At the beginning of the 21st century, man has realised that the fragile ecosystems of planet earth, which the first space travellers reverently described as "blue pearls in space", are under acute threat. Heading off these risks must be a pivotal concern of any policy-maker. Ultimately, the very survival of mankind depends upon it.

It has long been clear that the consequences of environmental pollution and destruction do not recognise national borders. The most severe ecological problems have an international, often global character.

The twin threat to the earth's atmosphere

Human activities, particularly the burning of fossil fuels such as coal, oil and gas, have significantly increased the concentrations of carbon dioxide (CO_2) and other greenhouse gases in the atmosphere. This higher concentration is the cause of climate change. Scientists estimate that the average global air temperature will increase by between 1.4°C and 5.8°C by 2100 – compared with 1990 levels – if action is not taken to counter it. At the same time, it is feared that sea levels will rise by between 10 and 90 centimetres.

The careless use of chlorofluorocarbons (CFCs) in spray cans, refrigerators and foam production has severely damaged the stratosphere, the layer of ozone which protects us. Since the late Seventies, scientists have regularly noted sharp declines in ozone over the Antarctic, and more recently over the Arctic. This "hole in the ozone" allows more harmful UV-B rays to reach earth from the sun. This can lead to an increase in skin cancer and cataracts in humans, as well as causing damage to marine plankton.

The loss of biological diversity

More and more species of flora and fauna are becoming extinct. The man-made destruction of entire habitats has reached alarming proportions. Not since the disappearance of the dinosaurs around 65 million years ago has the earth lost so many species in such a short space of time. Every organism alive today is the result of around 3.6 billion years of evolution; once extinct, they can never be recovered.

What is more, this irreparable depletion of nature threatens the very foundations of human life, since biodiversity – i.e. the diversity of ecosystems, species and genetic diversity within spe-

cies – is a key prerequisite for clean water, fertile soil and fresh air.

The destruction of the forests

In particular, the destruction of the rain forests as a result of forest clearance, human habitation and improper use has increased sharply since the middle of the last century. If it continues at its current pace, by 2050 the area will have shrunk even further, from its current size of 17 million square kilometres to 6 million square kilometres. The consequences are further climate change, desertification, and a drastic loss of biological diversity.

The pollution of our oceans

We pollute the marine ecosystems in many different ways – via pollutants and nutrients from the air and rivers, via shipping, fishing, and oil and gas extraction. World fish stocks have plummeted, putting a major human food source at risk.

The wastage and destruction of fresh water resources

Although global supplies of fresh water remain adequate, it is very unevenly distributed across the planet. While industrialised countries are often very wasteful in their use of fresh water, around 1.2 billion people, primarily in developing countries, struggle to survive without access to safe drinking water, while 2.4 million people are deprived of basic sanitation. Many arid regions of the earth (including the Middle East) are embroiled in disputes over the use of rivers, lakes and groundwater, indicating that battles over scarce supplies of fresh water could well threaten regional stability with global consequences.

The threat to our soils

In many places, human activities have damaged the soil, devaluing it or rendering it unfit for agricultural use. Worldwide, varying degrees of degradation are to be found on almost 2,000 million hectares of land, corresponding to around 15 % of the earth's surface that is not covered by ice. Already, one-third of our soil has only limited usability.

This loss of fertile soil is juxtaposed against a rapid increase in the world's population, with accelerating consumption of raw materials. Fifty years ago, just over two billion people shared the earth's limited resources of soil, mineral resources, clean water, clean air, fauna and flora. Today this figure has tripled, and in fifty years' time it is estimated that almost ten billion people will live on earth.

These serious problems indicate that we are overexploiting the earth's ecosystems, and pushing the planet to its limits. Future generations will have to pay the price.

Unless we can succeed in halting and reversing these trends, environmental and development problems will pose a growing threat to peace and security. Natural resources will become ever scarcer, increasing the risk of countries going to war over the remainder. If we continue plundering the earth in this fashion, broad sections of the earth will eventually become uninhabitable, not as a result of natural disasters or nuclear bombs, but because man himself will be committing ecological suicide.

To prevent this and align global development with the principle of sustainability we must accept responsibility for the future of the planet and its current and future inhabitants. One nation cannot achieve this in isolation; concerted global efforts towards cooperation are essential in order to have any chance of success. For this reason, the German Government pursues an environmental and development policy based on partnership, in order to avert ecological, economic and social crises. It vigorously pursues this objective in all relevant international organisations and committees, within the context of international environmental conventions, and through bilateral cooperation with other nations.

In order to drive international environmental cooperation forward, we need national role models, of which Germany has been a successful example over the past ten years. For example, the German Government's "Renewable Energy Sources Act" to promote solar power, windpower, hydropower and biomass, which entered into force in April 2000, is a pioneering piece of legislation which has been emulated by many other governments. In future, the German Government will continue to promote ecological modernisation in its own country, and strive to advance international environmental policy. Its ultimate aim is to achieve sustainable global development, to the benefit of mankind and the environment.

I. THE AIMS OF INTERNATIONAL ENVIRONMENTAL POLICY

A. Sustainable development

Since the 1992 *World Conference on Environment and Development* in Rio, "sustainable development" has been considered the way forward for future global action. We need to alter our perspective in order to concretise this term and help people to understand the tangible threat to the environment.

For example, this includes taking account of a product's "ecological rucksack", which is a way of quantifying its cost to the environment. In southern hemisphere countries, 20 litres of water are consumed in order to produce one litre of orange juice, while in Florida the figure is up to 1,000 litres of water. 166 grams of cyanide are used, on average, to extract one gram of gold. Not only does this contaminate 500 litres of water with toxic substance, but also produces one tonne of excavated material.

The smaller a product's ecological rucksack, therefore, the more sustainable it is. Emissions trading converts this way of thinking into a concrete policy by imposing higher charges on heavier rucksacks than on ecological lightweights.

The "ecological footprint" is a model for visualising the total resources consumed by an individual or a nation, whereby the contents of all ecological rucksacks are added together and converted into the amount of land needed to satisfy this consumption. Our ecological footprint is currently 1.2 times greater than the earth's surface. In the long term, such overexploitation will pose a serious threat to life on our planet.

The industrialised countries' lifestyle is at odds with the principle of "ecological justice". The excessive consumption by privileged classes in the northern hemisphere, and increasingly in parts of the southern hemisphere as well, is not only unfair to the poor (especially south of the equator) but also destroys the opportunities and liberties of future generations. As such, it contradicts the model of "sustainability" as defined by the 1983 Brundtland Commission and as accepted by the 1992 *Conference on Environment and Development* in Rio.

"Sustainable development is the ability to provide for the needs of current generations without damaging the ability of future generations to provide for themselves".

This definition of "sustainability" aims to reduce economic capacity, social responsibility and environmental protection to one common denominator. All countries should have fair opportunities for development. At the same time, it is important to protect the natural resources for future generations. The Federal Government is committed to these principles. We urgently need to find solutions to prevent society from eating into its capital and consuming the future.

The model of sustainable development goes way beyond ecological responsibility and is seen as a cross-sectional task for all policy areas. Above all, it is vital to ensure the support of players from the transport, industry, energy, commercial and agricultural sectors. Sustainable development demands ecological fairness from all players in industry, society and politics.

The focus on sustainability is changing the face of global politics. In the past, attention focussed on the needs of northern hemisphere countries, which were never questioned, and their charitable aid to poorer countries. These two policy areas existed side by side. Today, it is more a question of tackling aberrant developments in both north and south with coherent, multi-layered strategies. By joining forces, our hope is that all human beings, current and future, will be able to lead a dignified existence on our planet.

1. Protection and sustainable use of resources and the environment

Over the past fifty years, man has transformed planet earth more rapidly and more radically than in the whole of its preceding history. The associated risks are vast. All of the earth's inhabitants are utterly dependent on its ecosystems and on the basic necessities of life such as food, water and climate. In the long term, lasting production as well as social and cultural success cannot exist independently of these essential natural resources. Therefore, the protection and sustainable use of resources and the environment are key goals of the German Government's policy, goals which it also pursues at international level.

The core principles of environmental policy were laid down by the Rio "Earth Summit":

- The **precautionary principle** obligates us all to avert concrete risks and above all, to minimize the risks to man and the environment as science and technology progress.
- The **polluter-pays principle** means that the party responsible for creating waste must prevent or rectify any associated environmental impacts.
- Under the **cooperation principle**, environmental protection is viewed as a joint challenge for the government, people and industry.
- The **integration principle** means that environmental protection cannot be treated in isolation; instead, environmental aspects must always be taken into account in the formulation and implementation of many other policy-making areas such as transportation, energy and agricultural policy.

Agenda 21 was adopted in Rio as a vehicle for implementing the model of sustainable development. It is a global action programme for the 21st century which calls on all nations to formulate concepts and strategies for sustainable development. At the 2002 World Summit for Sustainable Development in Johannesburg, these targets were extended to include new objectives and priority action areas in the fields of drinking water, basic sanitation, biodiversity, energy policy, chemical safety, and sustainable patterns of consumption and production.

2. Environmental protection as an opportunity for innovations

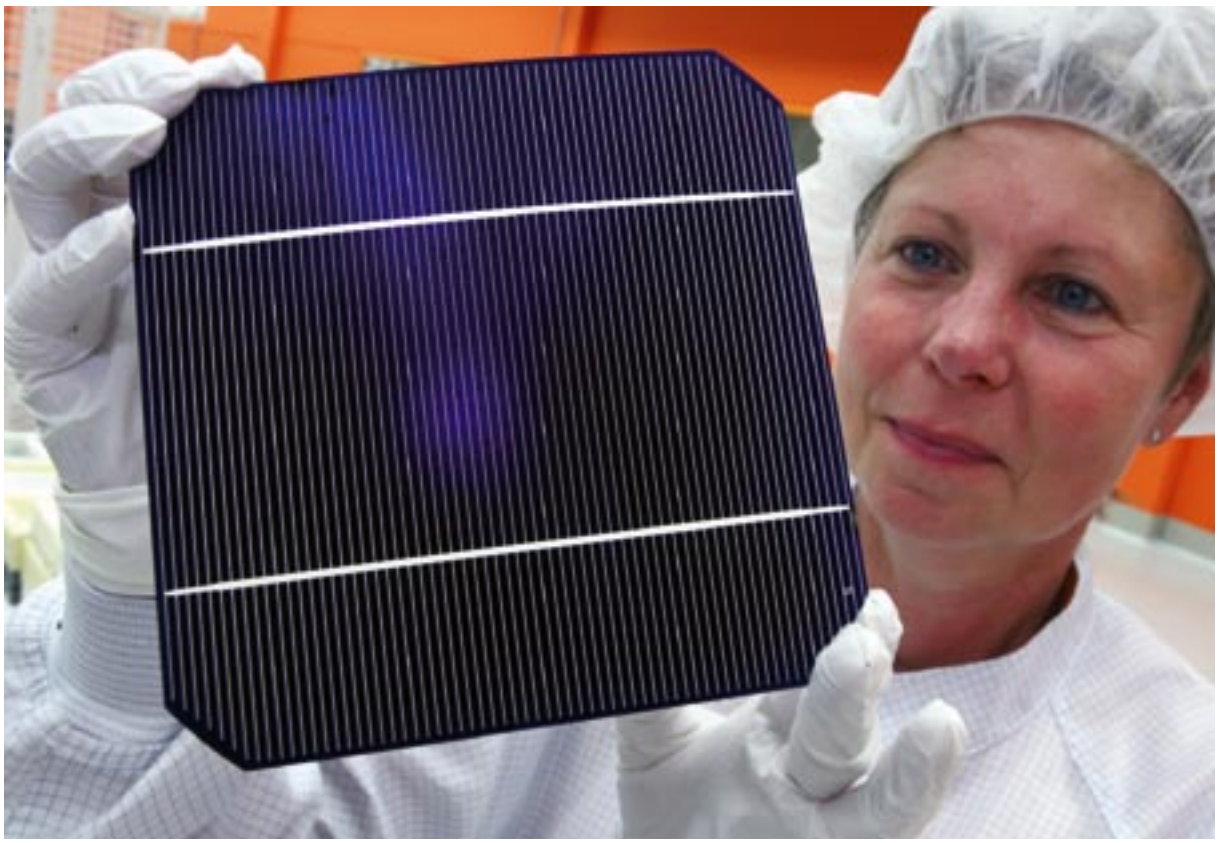
Sustainable development cannot confine itself to technical innovations but must also take place at a social and economic level. Any modernization strategy should also include innovations for the provision of resources and the industrial production process; it must incorporate social consumption patterns, and be geared to a fair and equitable world order.

Nevertheless, technology is the undisputed backbone of sustainable development in the 21st century. The more efficient use of scarce natural resources is at the crux of this approach. We need to take a quantum leap forward in this area if we are to succeed in harmonising the needs of a growing global population with ever-scarcer resources. Take energy, for example: Not only do we need to increase the use of renewable energy resources; we must also make far better use of the energy generated than at present. After all, people just want a warm, well-lit sitting room – they are not concerned with using the maximum amount of energy in order to achieve this. The same goes for industrial pumps and other machines. If we are to weather an improvement in global living standards, we need to cut our energy consumption drastically.

Innovative environmental technology also helps to regain control over the damage already inflicted. Many newly industrialising countries have recently gone on to repeat the sins and mistakes of western industrialised countries, often using antiquated technology. Environmental regulations are an important driving force for shifting the focus of production.

The intelligent, economical handling of energy and raw materials is at the heart of global environmental protection and a way of helping to improve international fairness; furthermore, it is also increasingly becoming an important economic factor. Environmental protection offers major opportunities for economic success and for creating new jobs.

For one thing, it is simply cheaper to buy fewer raw materials. Whereas in the past, environmental protection was often viewed as a cost factor, many have now come to realise that this ecological necessity also makes good financial sense.



Environmental protection is not a luxury; only those economies which face up to the challenges of environmental protection will prosper in future.

The German economy is a particular beneficiary of this growing correlation: Germany is a world champion exporter of environmental technology. Its ambitious environmental policies have made a decisive contribution to the evolution of innovative environmental technology. There is now a demand for these products and systems worldwide. In this way, German companies are contributing to global environmental protection. At the same time, international environmental policy has a favourable influence on employment and economic development in Germany.

The innovation potential is still far from exhausted, particularly with regard to resource efficiency. Several objectives may be pursued simultaneously: Utilisation of the environment is minimised, the costs are reduced, and at the same time, new, future-viable markets can be exploited.

A more efficient use of raw materials can be achieved in a variety of ways. Either less energy or materials are used from the outset to produce the same product or achieve the same benefits as before; or alternatively, the product can be designed intelligently to allow the materials to be recovered in full and without loss of quality at the end of its useful life. Finally, innovative companies can also aim to save or earn money by adopting more sustainable lifestyles and consumption patterns, for example, by arranging to share the use of items that are only needed occasionally.

There is potential for boosting productivity throughout every stage of a product's lifecycle, from extraction of the raw material, to separation from other materials, to travelling many thousands of miles to be refined and processed into products. The item is purchased and used, and eventually becomes waste, from which as many as possible of its valuable constituents should then be separated.

Two figures illustrate the potential gains to be made from raw material efficiency: In Germany, more than 40 % of the manufacturing costs are currently attributable to the procurement of materials, while wage costs account for less than 25 %.

3. Integrating environmental protection into other policy areas

It is now clear that environmental protection policy cannot be considered in isolation. Key ecological targets such as the economical use of energy, the more eco-friendly production of food, the conservation of fauna and flora species and their habitats, and environmentally-friendly mobility can only be achieved by adopting cross-sectoral strategies. For this reason, environmental requirements need to be taken into account in energy and transport policy, as well as in our cooperation with developing countries. Environmental aspects should be a central consideration when drafting international agreements and conditions of global trade, investment and financing.

The German Government feels that four policy areas are particularly important:

1. International agreements on resource conservation e.g. in the areas of water, energy and transport.

2. Greater integration of environmental aspects into the world trade system (WTO) and international finance flows.

3. Development cooperation with an emphasis on the environment

4. Environmental protection and sustainable resource conservation as a component of foreign and security policy.

Multilateral agreements on environmental protection are already forcing changes in other policy-making areas. Thanks to the *Kyoto Protocol*, the goal posts have been moved for energy producers and consumers in the northern hemisphere: In order to ensure compliance with the Kyoto Protocol commitments in industrialised countries, new economic instruments were developed, e.g. the European emissions trading scheme. At the same time the Kyoto Protocol improves development opportunities for countries of the South. The Clean Development Mechanism plays an important role in this.

The 2008 Conference of the Parties to the Convention on Biodiversity in Bonn will also address ways in which the guardians of genetic diversity e.g. in tropical countries could benefit financially from the associated revenues. This aspect is also covered by the WTO-administered *Convention on Trade-Related Aspects of Intellectual Property Rights (TRIPS)*.

Negotiations are also currently underway for a European strategy on marine conservation. Such a provision will have major impacts on agriculture, whose fertilizers and sprays currently pol-

lute our oceans. Here too, Germany is hoping to assume a pioneering role.

The *renewables2004* conference on increasing the global use of renewable energies has already influenced energy policy in many countries. Strategic environmental partnerships are also closely intertwined with the energy, production and waste recycling sectors. An agreement reached between Germany and China in 2006 is one such example. At EU level the *Air Pollution Control Directive* helps to steer the research and development efforts of car manufacturers in the direction of sustainability.

Conventional development aid is also evolving, prompted by the realisation that without functioning ecosystems, there can be no lasting development success. Even those in charge of foreign and security policy now view the conservation of freshwater reserves and other natural resources as a vital precondition for peace.

In short, because pollutants are flooding the planet and upsetting the natural equilibrium, an ecological policy is vital. At the same time, environmental conservation is an economic necessity: the growing scarcity of reserves necessitates an ecological approach to industrial policy if we wish to retain our international competitiveness. This is a change of paradigm.

4. No fairness without environmental protection

Environmental protection is an essential precondition of ecological justice. Take climate change, for example: Southern hemisphere countries are particularly hard-hit by the consequences of climate change caused mainly by countries in the north. Increasingly, residents of the Sahel region and Bangladesh are becoming victims of drought and flooding, yet they themselves bear very little responsibility for climate change.

Soot and other particles and pollutants are detrimental to the forests, soils, water and health of people across the globe. Gold mining using cyanide potassium is a potential source of contamination for the drinking water supplies over a wide surrounding area and everyone downstream. If the feeding grounds of migratory birds are used for industrial purposes in one country and entire flocks are prevented from reaching their breeding grounds, another country will lose

a species which is vital to its ecosystem – not to mention a possible tourist attraction.

Comprehensive climate protection, stringent provisions on mining and industry, the internalisation of environmental costs into the price of goods, agreements on the protection of migratory species and the development of a global network of interlinked nature reserves are all instruments aimed at achieving ecological fairness worldwide. It is inadequate to prohibit the use of certain leather tanning agents in Germany or the EU, for example, if shoes treated with these same materials are still imported from other southern hemisphere countries. Fairness must also be extended to include the transfer of technologies, to help southern hemisphere countries to achieve higher standards of environmental and health protection.

Ecological justice relies on participation at all levels, and consumers too must play their part. Travelling by train instead of taking long-distance flights, cycling to work rather than taking the car, eating locally grown apples instead of those imported from overseas, insulating your own home – all these measures help to limit climate change, and ensure *fair play*.

B. European integration for the environment

1. Germany's EU Council Presidency 2007

The EU has become an increasingly important player in environmental policy. While this issue was considered insignificant in the early years of the Community, the early Seventies saw the first environmental-related provisions. 1987 marked the adoption of the *Single European Act*. Since then, environmental competencies have been explicitly anchored in the EC Treaty. The *Maastricht Treaty* went much further: Since 1992, environmental protection has been one of the central tasks of the European Union.

Directives from Brussels have since been adopted in nearly all areas, from nature conservation and air pollution control, through to resource efficiency. 80 % of all German environmental legislation is now based on EC law.

These stringent provisions now extend to the new Member States following EU enlargement; the importance of this achievement often goes unnoticed. At international level too, the EU regularly acts as a pioneer and a driving force. By defining standards and targets, it helps to raise the bar a little further each time. Because poor air quality and other forms of environmental pollution do not recognize national borders, international cooperation is extremely important.

In recent years, Germany has raised its profile as a key player in environmental policy. Thanks to increased cooperation, we are making significant headway with environmental protection in Brussels. Germany's Presidency of the EU Council in the first half of 2007 represents both an opportunity and a challenge.

The objective is clear: To encourage sustainable production, both in the EU and worldwide. We want to inspire innovations with clever environmental policies, which in turn will create jobs and wealth. An eco-industrial policy is the answer.

Germany will use its pioneering role in many areas to lend impetus at international level. The following environmental policy targets will be our top priorities during Germany's Presidency of the EU:

- **Climate protection:** The international *Kyoto Protocol* only regulates emissions of climate-damaging gases until the year 2012. Germany is keen to agree ambitious limits for the period thereafter.
  Emissions trading needs to be developed, and should also include air travel. The European Commission has announced that it will make a proposal on this at the end of 2006.

- **Energy policy:** Germany is calling for a twin-pronged strategy: promoting energy saving, and developing renewable energies.

- **Sustainable, eco-friendly mobility:** The EU Commission has made proposals for improving the exhaust gas quality of cars and lorries. Germany is keen to adopt high standards as a matter of urgency.

- **Preserving biodiversity:** The 9th Conference of the Parties to the *Convention on Biological Diversity* is scheduled to take place in 2008. Forest conservation will be a top priority. Germany is keen to start preparing for this conference in close collaboration with Portugal and Slovenia, who will succeed Germany in its EU Presidency.

2. Linking all policy areas

Germany's Presidency of the EU Council will highlight the debating of cross-sectional issues. There is a need for "horizontal strategies" which incorporate various different policy areas in order to achieve a sustainable result. Key starting points include the Lisbon Strategy, which comprises measures for renewing the EU economy, and the European Sustainability Strategy.

The German Government wishes to highlight the fact that environmental protection can pursue several objectives simultaneously. Environmental protection can create permanent jobs and help to safeguard the economic foundations of the social state, as well as being pivotal to the conservation of natural resources.

The Lisbon Strategy, adopted in the Portuguese capital by the Heads of State and Government of the European Union in 2000, is a blueprint for the comprehensive modernisation of the EU. It is an ambitious plan which it hopes will transform the Community into the most dynamic, competitive economic area in the world. Recognising that clean air, the preservation of natural habitats and healthy foods are just as essential as effective legal provisions, in 2001 the European Council included the environment in the Lisbon Strategy at its conference in Göteborg.

In the same year, the European Union also adopted its strategy for sustainable development which aims to sever the link between economic growth and the consumption of resources. The EU is also campaigning for "ecologically correct pricing", whereby the costs to society are included in the product price. For example, if a certain mode of transport or power plant contaminates the air, this should be reflected in the transport or energy prices. In this way, users can contribute to the consequential costs such as medical treatment, which would otherwise be borne by the general public. Examples of this include the eco-tax, the HGV toll and EU emissions trading.

In June 2006, the EU Heads of State and Government undertook a comprehensive assessment of European sustainability strategy and agreed to conduct regular progress reviews. They also updated their strategy, with extensive contributions from the German Government. The revised plan sets out targets and measures designed to put a halt to non-sustainable trends.

In 2006, the Heads of State and Government also expressed a desire for a further improvement in energy efficiency. The inventors of eco-efficient devices or processes will be eligible for financial aid to help to proliferate such technologies. Even after 2010, the use of renewable energy will be further increased and emissions trading continued in order to achieve the European Union's climate protection targets as cost-effectively as possible. For next year, the EU Heads of State and Government have resolved to present an action plan on energy policy within the context of the Lisbon Strategy. It is hoped that this plan will achieve progress in three directions: Supply reliability, competitiveness, and environmental compatibility.

The EU Member States themselves are responsible for concrete implementation of the environmental protection targets. National subsidy programmes are justified as a way of motivating companies to design eco-friendly equipment which far exceeds the minimum standards. This will help to support the rapid proliferation of eco-efficient technologies, as well as boosting companies' competitiveness, since environmental protection goods represent a growth market. Germany is calling for the creation of targeted programmes with minimal administrative input which comply with the EU's regulations on competition.

3. The new EU members

Following the collapse of the communist system, it became clear that the environment in many Central and Eastern European countries was far more seriously damaged than had previously been thought. Although governments have made major efforts in recent years to improve their protection of natural resources, much still needs to be done. New sewers and sewage treatment plants are expensive, and a regulated waste disposal system is a costly investment.

In 2004, the EU underwent a substantial enlargement when it was joined by eight Central and Eastern European states plus Malta and Cyprus. Bulgaria and Rumania became EU members on 1 January 2007. The accession candidates Turkey, Croatia and Macedonia are likewise preparing to implement the EU's legal requirements. The EU's high environmental standards pose a considerable challenge for these countries – but they also offer a major opportunity.

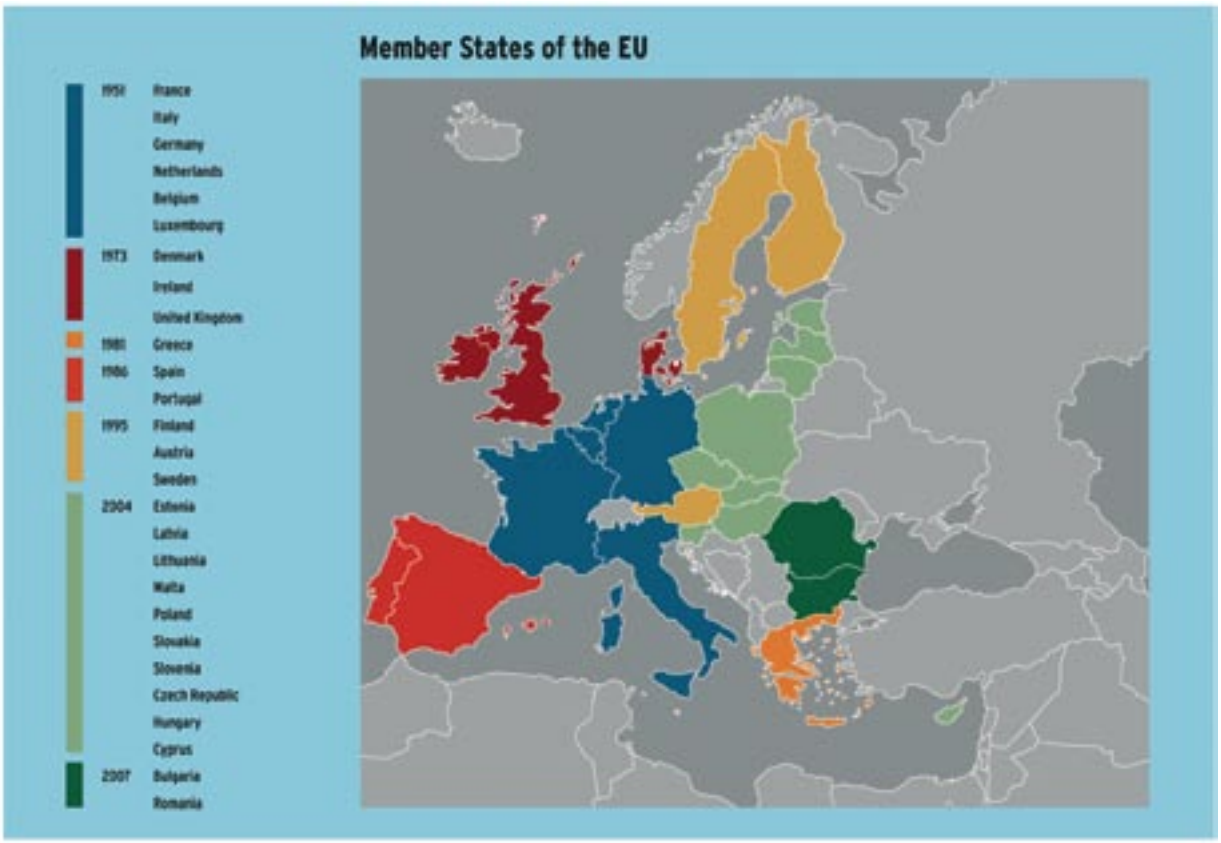
We should not underestimate the significance of this adaptation process for both the economy and ecology. Identical high environmental standards must prevail throughout the entire Community and the laws must be effectively applied in order to allow real competition. Regulations and their enforcement are pivotal to a functioning internal market.

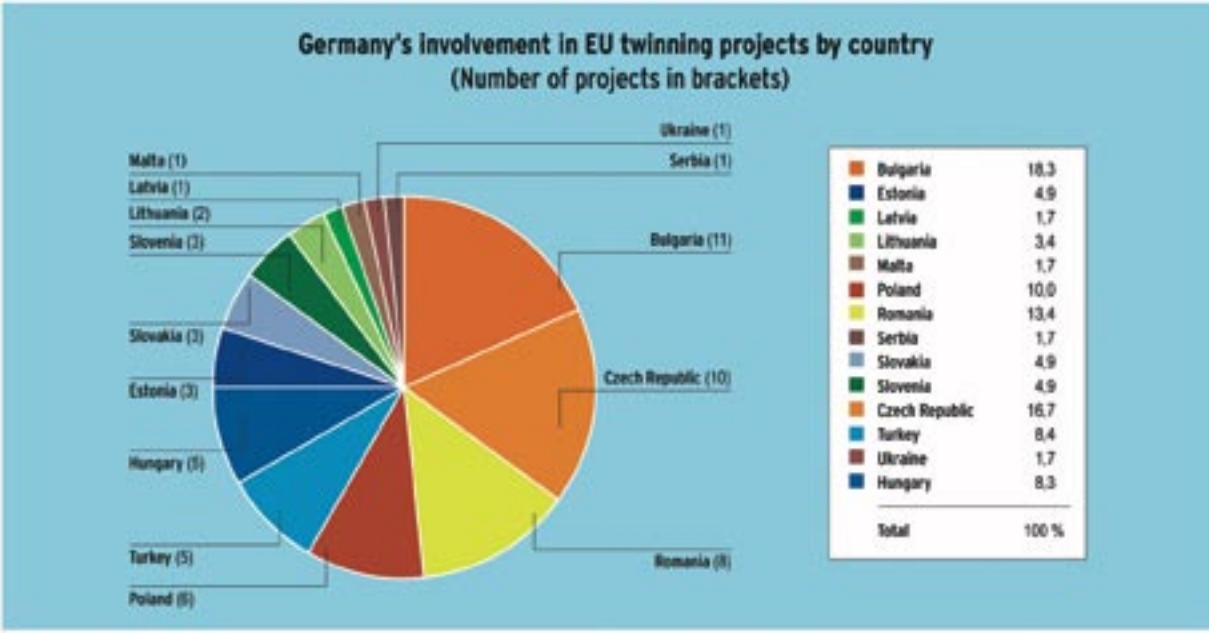
The accession countries themselves must provide most of the funding for environmental protection, but they also receive a significant level of support. The EU has created a number of programmes offering investment aid and technical advice. In particular, existing EU countries help new members and candidates to develop the requisite institutions. Not only do they need to adapt their legal and technical standards, but also to ensure that the relevant requirements are actually implemented. To this end, they need proper, functioning licensing and supervisory authorities and an effective justice system, *inter alia*.

3.1 The EU twinning programme

1998 saw the launch of the so-called *Twinning Programme*, whereby government authority staff from the old EU Member States share their knowledge and experience with their Eastern European counterparts by spending one or two years in the partner country, where they advise on day-to-day operations and provide training courses. The programme not only targets new Members and accession candidates but is also available to the EU's new neighbours in the Western Balkan, Mediterranean and Southern Caucasus.

Germany is very active in the environmental sector and has been involved in projects in all Eastern European accession and candidate countries. It has also set up twinning partnerships with the Ukraine and Serbia. To date, Germany has participated in 61 projects, and is involved in more twinning tandems for environmental protection than any other "old" EU Member State.





Source: Federal Ministry for the Environment, Nature Conservation and Nuclear Safety (BMU), Dec. 2006

3.2 Programmes by the German Government

Between 1992 and 2000, the German Government supported environmental protection projects within the context of *TRANSFORM*, a programme aimed mainly at projects in eastern European countries, to which it has donated some € 15 million in total. Its encouraging experiences with this programme prompted the German Environment Ministry to create a separate advisory aid programme in the year 2000.

3.2.1 The advisory aid programme

The programme initially received a budget of € 2 million per annum, which was topped up to € 2.24 million after two years. Around half of the funds will benefit EU accession countries and candidate countries

Financing by the Federal Environment Ministry often makes it easier to obtain additional funding from charitable foundations etc., so that larger projects become viable. The spectrum of topics is very broad, although water and sewage projects have been key themes in recent years. This includes advising on the modernisation of pipelines, sewers and treatment plants as well as supporting transboundary cooperation in large water catchment areas, as called for by the EU Framework Directive on Water. For example, precautionary measures on the Njeman River, which flows through Lithuania and the Russian Federation, have successfully been transferred to other rivers.

3.2.2 Pilot projects for environmental protection abroad

The Federal Environment Ministry has furthermore created another investment programme to support model environmental projects, which also benefits Germany. Examples include transboundary initiatives to tackle contamination of the River Elbe and the Baltic Sea, or air pollution in the Erz Mountain Range. The programme is also aimed at "transferring philosophy", in order to sensitize the general public e.g. to climate protection, energy modernisation of buildings, cogeneration and wind farms. The aim is always to establish "flagship projects" which will appeal to and motivate multipliers to become active themselves.

For example, between 2003 and 2005, Germany supported Latvia with a pilot project to renovate 466 prefab apartments. The apartments did not have any thermal insulation and required large amounts of energy to heat. These experiences are now being evaluated by property owners and management companies, banks and local authorities in collaboration with the Latvian Environment Ministry. Conclusions are to be drawn with reference to a broad-based support programme.

Since 1992, under the auspices of this programme, 17 projects in the Czech Republic, Poland and Latvia have received funding totalling some € 67 million.

C. Making globalisation fair and equitable

1. An ecological framework for globalisation is essential

Global environmental policy needs to keep pace with the rapid disappearance of trade restrictions. If we want to leave our planet in a good condition for future generations, we must impose clearly defined social and ecological guidelines within which market forces may act. For this reason, environmental policy needs to advance at a similar pace as competitive freedom. To allow everyone to participate in the wealth of a market economy, the rules of play must be clear and properly enforced by well-run institutions.

The current challenge therefore lies in strengthening and expanding the global regulatory framework. We need clear and ambitious rules, multilateral agreements and powerful institutions. Not only is this the central requirement for sustainable global development; what is more, world peace is also dependent upon it, in the face of growing conflicts over the use of limited natural resources. International environmental policy is a policy for peace.

The *Kyoto Protocol* exemplifies clear regulations, and provides a framework for climate policy in the 21st century. The climate protection process shows that it is possible, in principle, to combine a globalised economy with an equally global regulatory framework setting out the social and ecological limits for our future development.

Strengthening international environmental legislation

Over the past three decades, international environmental legislation has developed at a rapid pace. Figures vary according to the counting method used, but there are now somewhere between 200 and 500 multilateral treaties aimed either wholly or partially at protecting the environment. Admittedly, these treaties have so far failed to achieve an adequate improvement in the real situation, because many states have difficulty in actually meeting their contractual obligations. In particular, application of the relevant legislation is often a sticking-point.

In order to reduce these deficits, Germany is calling for two things:

- When negotiating environmental agreements, care must be taken to ensure that they are structured in an implementation-friendly way. Where necessary, developing countries in particular should receive support to help them to develop adequate capacities.

- Treaties should include adequate controls and sanctions, to prevent governments from quietly shirking their obligations without facing the consequences.

For both of these objectives, governments need the support of environmental organisations and other representatives of civil society. The specialist knowledge of non-government organisations can be instrumental in helping to devise functioning rules and detect possible violations. For this reason, when drafting treaties, the German Government attributes particular value to transparency and public participation.

The *World Trade Organisation (WTO)* plays a central role in global economic development. It has created a comprehensive set of regulations to safeguard and further liberalise global free trade. In November 2001, the Member States resolved to contractually anchor environmental aspects in the next round of talks. Their main aim is to clarify the relationship between the regulations of the WTO and those of multilateral environmental protection agreements. However, these negotiations were suspended indefinitely in July 2006, when the parties failed to reach an agreement due to a severe conflict of interest in other areas.

In order to structure globalisation in an ecological way, environmental protection must play a bigger role in global finance flows. International financial institutions such as the World Bank and regional development banks should do more to promote projects aimed at the protection and sustainable use of the environment. At the same time, it is important to ensure that public funding is not used to finance environmental destruction.

En route to a UN environmental organisation

Since the early Seventies, environmental issues have had a firm place in global politics. The institution which represents these topics at global level is the United Nations Environment Programme (UNEP).

UNEP was founded in 1972 with three main tasks:

- To review and assess the global environmental situation
- To coordinate environmental programmes and activities within the UN
- To exchange and cooperate with other international organisations in the environment sector.

UNEP's budget is comparatively modest. The "Environment Fund" is financed by voluntary contributions. In 2005, the annual budget was just 58 million US dollars. By way of comparison, *UNESCO*, which is responsible for education, science and culture, enjoyed an annual budget of 172 million US dollars, while the *UN Development Programme (UNDP)* boasted 4 billion US dollars.

The world's environmental problems have become much worse in recent years. Many governments and non-government organisations now feel that global environmental protection should be the responsibility of an international organisation with a structure comparable to that of other policy areas. The ambitious tasks assigned to *UNEP* in its founding resolution require an appropriate level of authority. At present, representatives of the UN environment programme are not even on a par with other major players within the UN system, not to mention the *World Trade Organisation (WTO)*, the *World Bank* and the *International Monetary Fund (IMF)*.

For this reason, the EU is calling for UNEP to be upgraded to *a United Nations Environment Organisation (UNEO)*, which would continue to be based in Nairobi. Like the *World Health Organisation (WHO)* or the *FAO* (responsible for world food), the *UNEO* should receive better and more reliable funding than is currently the case for *UNEP*. This would make UNEO better-placed:

- to develop suitable regulations in order to create a balance between economic globalisation and global environmental protection.

- to give policy recommendations to a wide range of recipients, not just UN organisations and institutions set up on the basis of multilateral environmental agreements. It goes without saying that UNEO should also be involved in decisions made by the international finance institutions.

- within the UN system, to ensure that the obligations of the Rio and Johannesburg Summits are taken seriously and properly reviewed.

- to support the developing countries in implementing international, regional and national environmental policy. To this end, the *UNEO* would need to collaborate with development organisations in particular, in order to move the necessary capacity-building process forward.

- to address pressing environmental problems, including declining biological diversity, climate change, water and air pollution, environmental disasters, and non-sustainable consumption and production patterns. In collaboration with other organisations such as the *World Bank, UNDP* or the *Global Environmental Facility (GEF), UNEO* should also work at preventing transboundary conflict or offer conflict follow-up services where necessary.

- to heighten global awareness of the precarious state of the environment.

2. More environmental protection increases international security

The significance of environmental policy in relation to war and peace has long been underestimated. However, it is often an important tool for preventing crises from occurring in the first place. At the same time, environmental policy can make a decisive contribution towards stabilising peace.

The award of the 2004 Nobel Peace Prize to the Kenyan environmental protection expert Wangari Maathai drew the world's attention to this correlation. Today, environmental protection and resource conservation are integral components of an extended interpretation of security.

For one thing, the growing scarcity of vital resources like fresh water can exacerbate regional conflicts, and there have been many wars over energy resources. For another, local, regional and global environmental changes can also cause security problems.

There have been numerous indications that the very foundations of human life are disappearing for good:

- Habitable land is being lost due to desertification or rising sea levels

- Agricultural land is being eroded

- There is a lack of drinking water due to persistent drought.

Many observers believe that the conflict in Darfur (Sudan) is rooted in a dispute over dwindling water and land resources. Already, the number of environmental refugees worldwide is estimated at 25 million. According to figures supplied by the *Institute for Environment and Human Security*, affiliated to the United Nations University, the number of environmental refugees could escalate to 50 million by 2010, posing a major threat to peace in regions already susceptible to crisis.

However, environmental protection also offers major opportunities for international cooperation. Transboundary environmental projects are ideal for promoting trust between governments in tense situations. This has been shown, for ex-

ample, in South-East Europe since July 1999, with a number of cooperation partnerships under the Balkan Stability Pact. Similar experiences have also been seen with transboundary conservation areas in southern Africa, and there are also positive examples of cooperation in the field of water.

What is more, energy-saving and promoting renewable energies offer a "peace dividend" by reducing the demand for scarce fossil fuels from conflict regions and for nuclear power.

In short, "environment and security" is becoming an increasingly important issue. In Germany, this is reflected in the Federal Government's overall concept for *Civil Crisis Prevention, Conflict Resolution and Peace Consolidation* of April 2000. An action plan based on this concept was adopted in May 2004, and contains an extensive chapter on the environment. Two years later, the Federal Government reported on a range of initiatives both current and future.

Admittedly, the wide range of initiatives in this field is now so large that better coordination is needed. With this in mind, the Federal Environment Ministry has supported the development of two information platforms, "Civil Crisis Prevention" and "Environment and Resources", which are organised on a regional and sectoral basis.

Additionally, the German Government is calling for greater consideration to be given at international level to the correlation between environmental protection targets and security targets. During Germany's Presidency of the EU, it is hoping to launch an initiative which will concretise existing statements on the European security strategy.

The EU is not the only body to take an interest in this issue. *OSZE, UNEP* and the *UN-ECE* have likewise taken a keen interest. The project *Environment and Security – Transforming risks in cooperation* initiated by *UNDP, UNEP, OSZE* and *NATO* in collaboration with various partner countries is extremely important. Not only has it led to more in-depth conflict analysis, but on this basis, has also initiated agreement processes in the Caucasus region, in Central Asia and in the Balkan Region.

The post-conflict department of UNEP operates in a similar fashion. Initially, international experts convene with colleagues from the affected countries to take stock of the environmental damage caused by the conflict, then draw up proposals on how it can be remedied. Reports have so far been published on Afghanistan, Iraq, Palestine and Liberia.

3. Eco-friendly growth in newly industrialising countries

Rapid economic growth has resulted in major ecological problems in many newly industrialising countries. There is a growing realisation that environmental policy is not a luxury, but something which makes good financial sense. Only countries which advance resource and energy efficiency and increase the use of renewable energies will prosper in the long term, while those which adopt a *laissez-faire* attitude to environmental policy are not only destroying the opportunities of future generations, but also stifling industry's innovative strength. Much can be gained through close environmental collaboration with newly industrialising countries:

- An improvement in the environmental situation and energy supply worldwide
- Increased export of German technologies to these countries and, associated with this, positive effects for the German labour market
- Improved cooperation with these countries on key global environmental policy issues, which in turn has a beneficial effect on international negotiation processes.

We must make wider use of this potential in collaboration with German companies and industry organisations.

4. Tackling poverty through environmental protection

Poverty and destruction of the environment are closely intertwined. Climate change, water shortages, and contamination and erosion of the soil threaten the very foundations of human life, particularly for the world's poorest people. In order to survive, they often feel they have no other choice than to destroy the environment still further, leading to a downward spiral. Conversely, environmental protection is a fundamental prerequisite for improving the financial situation of these same people.

In the Millennium Declaration, the Member States of the United Nations promised to tackle global poverty, safeguard peace, and practice fair, sustainable globalisation. Development, the eradication of poverty and the protection of our shared environment were high on the list of priorities. Additionally, the Declaration also contains a series of concrete commitments by the international community, which form the starting point for the *Millennium Development Goals (MDGs)*.

In the Millennium Declaration, industrialised and developing countries recognise their shared responsibilities. The aim is to halve the number of people living in poverty and hunger by the year 2015. Additionally, the Declaration promises to improve general educational opportunities, advance equal opportunities between men and women, and promote basic healthcare. Protection of the environment is likewise a key item in the Declaration.

The Agenda was concretised and extended at the *World Summit on Sustainable Development* in September 2002 in Johannesburg. Areas with particular relevance for environmental policy include chemicals management, basic sanitation, energy and resource efficiency, and conserving biological diversity.

In future, the German Government will continue to press for a stronger environmental dimension in the Millennium Development Goals. At the same time, it is important for all parties to uphold the resolutions of Rio and Johannesburg.

II. PRIORITIES, ACTION AREAS AND PLAYERS IN SUSTAINABLE DEVELOPMENT

A. Climate protection

Although comparatively small in volume terms, without them there could be no life on earth. Around 0.3 percent of the atmosphere is comprised of trace gases which are crucial to the distribution of temperature and precipitation. In particular, carbon dioxide (CO_2), water vapour (H_2O), methane (CH_4), dinitrogen oxide (N_2O) and ozone (O_3) create the natural greenhouse effect which reduces the amount of heat from the sun that is irradiated back into space from the earth's surface. It is thanks to this effect that the average temperature on our planet is 15°C, rather than the icy chill of space.

Since the onset of industrialisation, man has emitted increasing volumes of greenhouse gases into the atmosphere. More than 50 percent is attributable to the combustion of fossil fuels such as oil, coal and gas, in which CO_2 is unavoidably released. The consequence is that over the past 100 years, the average temperature worldwide has risen by 0.8 °C. The consequences of warming are already being clearly felt. There are more and more incidences of storms and flooding, spells of extreme drought are on the increase, and glaciers in the Alps, for example, have already shrunk by 70 %. Within 20 years they are likely to have disappeared altogether.

Unless we put a radical halt to our emissions of greenhouse gases, experts are predicting that the consequences could be far worse:

- Sea levels will rise by between 10 and 90 centimetres. Islands and coastal cities will be flooded.
- Food production will decline as a result of soil erosion, desertification and water shortages.
- Millions of people will be forced to leave their homes because they are no longer able to live in this new environment.
- Many species will fail to adapt to the rapid shift in climate zones and will become extinct.
- Tropical diseases like malaria and dengue fever will advance into previously unaffected areas.

In 1992, the international community responded to these alarming predictions. At the Rio *"Earth Summit"*, 154 countries adopted a global *Framework Convention on Climate Change* aimed at stabilising the concentration of greenhouse gases at a safe level for the world climate. In December 1997 in Kyoto, industrialised countries subsequently promised to reduce their emissions of the six main greenhouse gases by a total of five percent between 2008 and 2012 compared with 1990 levels. Following its ratification by Russia in February 2005, the *Kyoto Protocol* was finally able to enter into force.

Varying reduction commitments were made by individual countries in order to meet this target. For example, the EU and many Eastern European countries have promised to reduce their emissions by eight percent, Japan and Canada by six percent, and Russia must maintain its 1990 levels.

The EU countries wanted its emission reductions to be calculated jointly. Having agreed on burden-sharing, Germany accepted the highest share of 21 %.

In order to meet this target, in the summer of 2005 the German Government presented the second National Climate Protection Programme. It reviews the extent to which its predecessor programme from the year 2000 achieved the anticipated emission reductions, and highlights the further measures needed. The emphasis is now on private households and transport; progress is already being made in industry and the energy sector thanks to emissions trading.

Germany's climate strategy is based especially on the following pillars:

- Buildings offer considerable potential savings. The CO_2 building restoration programme helps to maximise this potential.
- Cogeneration plants receive financial support to boost energy efficiency.
- The plan is that renewable energies should meet at least 4.2 % of primary energy demand by the year 2010, and at least 10 % by 2020.
- The ecotax is a tax on energy consumption, and serves as an incentive to use energy sparingly.

Germany is now fairly close to meeting its obligations under the *Kyoto Protocol*. Between 1990 and 2004, German emissions of greenhouse gases were cut by around 18 %. By contrast, in many industrialised countries – including the USA, Australia and Japan – emissions continued to increase significantly.

The *Kyoto Protocol* is an important first step towards protecting our climate, but it is by no means enough. Climate change is already causing major human suffering and extensive economic damage. In the year 2002, almost 200 people lost their lives as a result of flooding on the River Elbe, and the cost of repairing the material damages was around 9 billion Euros. If climate change is not curbed the resultant damages are already expected to run to several trillion Euros by the middle of this century. Experts predict this will account for up to ten percent of global economic output by the year 2100. In the medium to long term, such a development would cancel out all economic and social progress. This is why we need an effective international climate regime. Incentives need to be created to minimise the growing energy demands and the associated increase in emissions.

A successful climate policy depends on an energy supply with minimal use of fossil fuels. To this end, energy efficiency needs to take a massive leap forwards, firstly in order to ensure far more effective utilisation of energy carriers by power stations, and secondly, by designing machines, homes and transport systems which use far less energy, while continuing to offer the same benefits. Increasing the use of renewable energies is also high on the list of priorities.

The *Kyoto Protocol* offers three so-called "flexible mechanisms" to encourage the necessary investments in a modern, low-emission energy infrastructure and promote the transfer of technology into developing countries:

- Emissions trading is a market for carbon pollution rights. The lower a company's emissions, the fewer pollution credits it will need to purchase.

- The *Clean Development Mechanism (CDM)* allows industrialised countries to improve their emissions balance by financing climate protection projects in developing countries.

- *Joint Implementation (JI)* is a vehicle for industrialised countries aimed at the joint execution of climate protection projects.

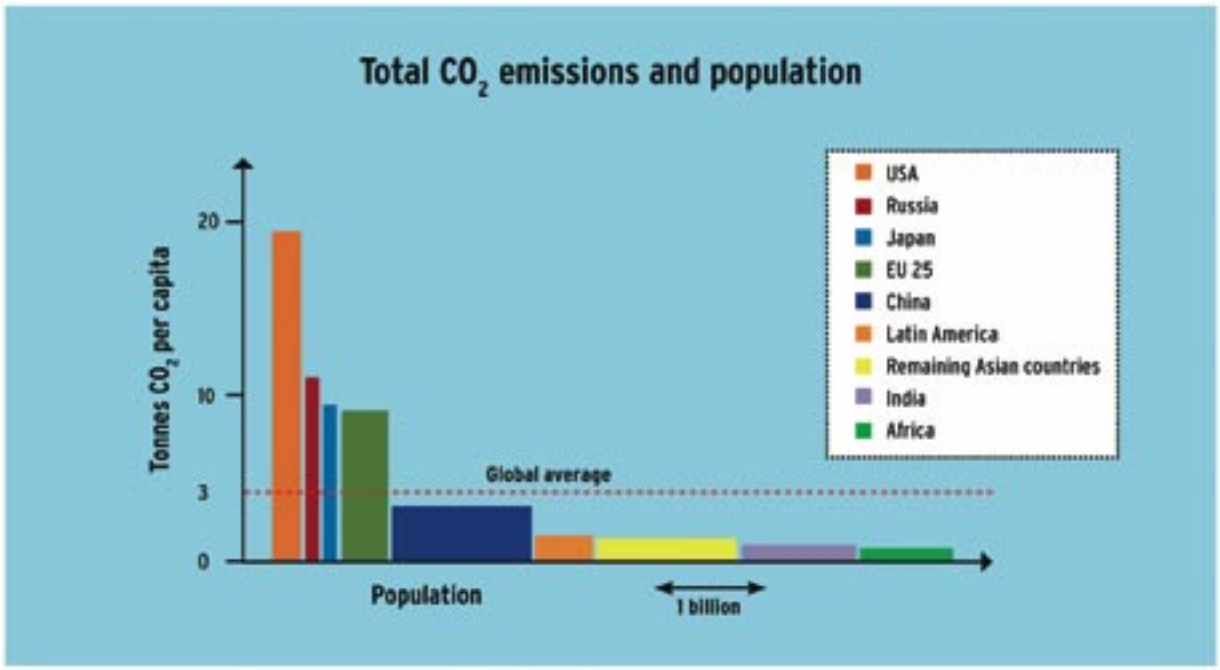
Experience has already shown that these mechanisms work. Our next challenge is to expand them and ensure their long-term protection. This requires the continuation of the climate regime post 2012, when the first commitment period under the *Kyoto Protocol* ends. The aim must be to achieve a binding and ambitious reduction in greenhouse gases for the period after 2012.

The international community had already set an important signal in this respect at the 2005 World Climate Conference in Montreal, when the Parties to the Kyoto Protocol resolved to discuss new, ambitious reduction targets. Parallel to this, there is an on-going dialogue with all countries under the Framework Convention on Climate Change, including the USA and Australia. Both processes were launched in May 2005 in Bonn.

Both Germany and the European Union have a clear objective in mind for these negotiations: To prevent global warming of more than 2 degrees Celsius compared with pre-industrial levels. Only this can give us a realistic chance of averting an ecological and economic disaster. In order to meet the 2 degree target, the increase in global emissions needs to be stopped within the next one to two decades. Huge reductions are necessary in order to achieve this: By the middle of this century, our emissions of greenhouse gases must be half the level of 1990.

The countries of the European Union are in agreement that all industrialised countries must maintain ambitious reduction commitments even beyond 2012. Not only are industrialised countries the main emitters at present; they are are also responsible for the bulk of climate gases in the past. The EU believes that industrialised countries should accept reduction targets of 15 to 30 % by the year 2020, and 60 to 80 % by 2050. This may sound utopian, but in fact, the technology already exists to achieve these reductions.

However, efforts by industrialised countries alone are not enough. Emissions from newly industrialising countries with fast-growing economies, such as China or India, will continue to rise over the next few years and account for a growing proportion of global greenhouse gases. In future, therefore, these countries must likewise contribute to climate protection. To be fair, their contribution will be unable to match that of industrialised countries, given that the average German emits around 10 times as much climate gas as the average Indian. What is more, for countries such as India, Brazil and South Africa, eradicating poverty is quite rightly the number one political priority. It is therefore only fair that industrialised countries should lead the way, to give the economies in developing countries a chance to catch up and tackle poverty.

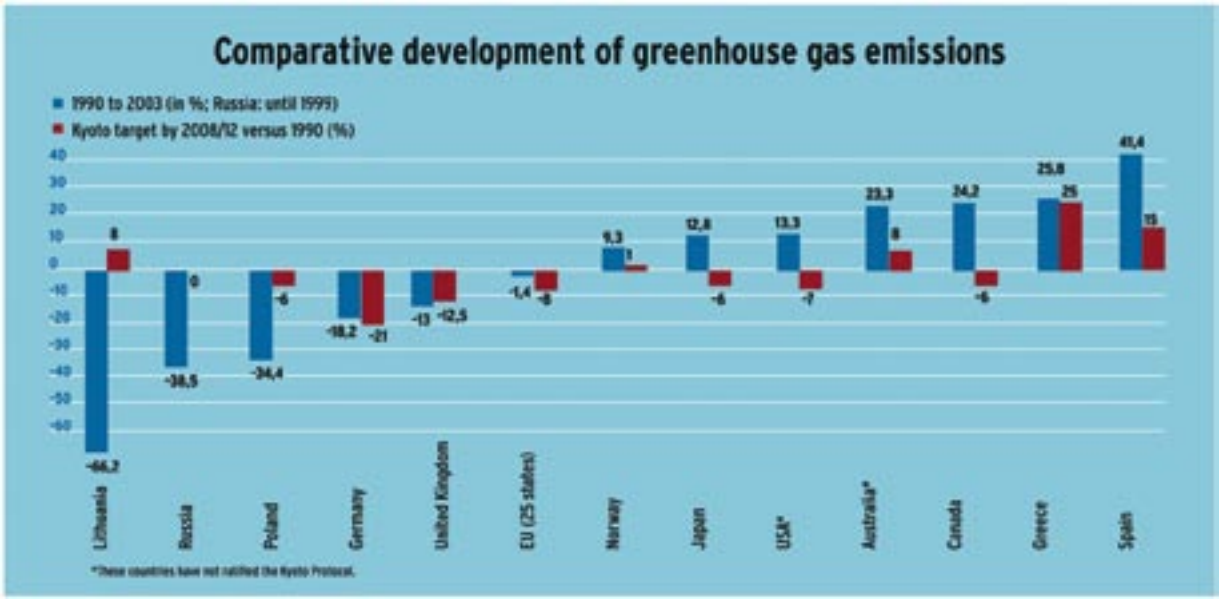


Source: Deutsches Institut für Wirtschaftsforschung / United Nations, 2005

At the beginning of 2007, Germany will take over the Chairmanship of G8 and the Presidency of the EU Council. Its main objective will be to drive international negotiations for a post-2012 climate protection regime forwards. The clock is already ticking. By the end of 2009, an agreement needs to have been reached in order to ensure a seamless transition between the first and second commitment periods. The decisive political impetus must happen in 2007.

The EU has decided to set a positive example among industrialised countries and to continue to play a leading role. During its Presidency of the EU, the German Government will call for an EU reduction target to be set by 2020, and has announced that if the EU can agree on a reduction target of 30 % by 2020, then Germany is willing to commit to an even higher reduction.

The involvement of the USA and major newly industrialising countries is essential if the climate negotiations are to be successful. Germany's Presidency of G8 in 2007 is a major opportunity to create the political push needed for the UN climate process. Climate protection and energy efficiency will therefore be high on the agenda at the summit in Heiligendamm. The G8 should de-



Source: United Nations Framework Convention on Climate Change (UNFCCC)

monstrate their political determination by adopting tangible measures to act as beacons. Additionally, the Gleneagles Dialog between the world's 20 highest energy-consuming countries represents an important bridge of understanding between leading industrialised and newly industrialising countries.

The aim is not only to reduce greenhouse gases and prevent untenable ecological, economic and social climate damage; what is more, an ambitious climate protection policy is the correct strategy for global energy. An integrative strategy on climate and energy policy not only helps to reduce greenhouse gases and prevent untenable ecological, economic and social climate damage; at the same time, it also makes us less dependent on rising raw material prices and imports from economically unstable regions, and safeguards the future energy supply.

B. Sustainable energy policy

Concerns over energy reliability have been heightened in recent years. Many of our oil and gas supplies are located in politically unstable regions and will run out sooner or later. At the same time, demand for energy is constantly rising, both in some industrialised states, as well as in newly industrialising countries such as China and India in particular, where economic growth is prospering. If we continue on our present course, the global demand for fossil raw materials will increase by at least a further 50 % by the year 2030.

For this reason, the energy policy agenda is dominated by the same question as climate protection: How can we sever the link between economic growth and the demand for fossil fuels? The answer is also the same: By means of an ambitious, twin-pronged strategy for greater energy efficiency and renewable energies, without any loss of wealth.

The objectives of supply reliability and climate protection are therefore closely interlinked, and pose one of the central challenges of the 21st century. At the same time, they also offer a major opportunity. Industrialised and developing countries would benefit in equal measure from a structural change in favour of greater efficiency, through economic growth and rising employment. What is more, a twin-pronged strategy of this kind also helps to boost competitiveness.

Energy efficiency

The less energy we produce, the less environmental damage and financial costs we will incur. As such, energy efficiency is outstandingly important from both an ecological and an economic point of view. What is more, when demand is lower, it is much easier to guarantee a reliable supply.

There is a vast economic potential for improving efficiency. Huge savings could be achieved if the technology already available today were to be widely used. Take coal-fired power stations, for example: If efficiency were to increase from 30 % to 45 % by converting to a system which maximises the energy content of the lignite, the electricity efficiency would increase by 50 %. Put another way, the power plant operator would need to purchase and use one-third less coal than at present.

The potential savings on the demand side are even greater. Through good thermal insulation and modern heating systems, the heating demands of many houses could be met by a fraction of the energy volume used today.

The German Energy Agency (dena) set up by the German Government for this specific purpose is a key player at both national and international level as a centre of excellence for energy efficiency. Through its diverse activities and campaigns targeting buildings and electricity use, it makes a vital contribution towards boosting energy efficiency. Through its campaign “Climate seeks protection”, the German Environment Ministry is also seeking to maximise the substantial economic potential for improved energy efficiency among buildings.

Cars also consume several times more energy than they would need if they were to operate with innovative drives or alternative fuels. Because the buildings and transport sectors are the greatest consumers of energy in the EU – accounting for 70 % between them – progress in these areas is a particularly urgent priority. However, significant improvements can also be made with energy transformation, process heat and drives.

With this in mind, in October 2006 the EU Commission presented an action plan on energy efficiency.

The German Government believes that there is a particular need for progress in the following areas:

- The EU labelling system for the energy rating of household appliances should adapt dynamically in line with technical developments. In other words, the most economical solution available at any given time should become the general yardstick.

- The EU Eco-Design Directive needs to be implemented promptly. Apart from imposing ambitious consumption standards, this also focuses on reducing energy wastage in stand-by mode.

- The EU Commission's cross-sectoral action plan on energy efficiency needs to be concretised and promptly implemented in these and in other areas. This includes improving energy transformation, in particular by promoting cogeneration. In the industrial sector, the use of process heat and better drives could achieve huge savings.

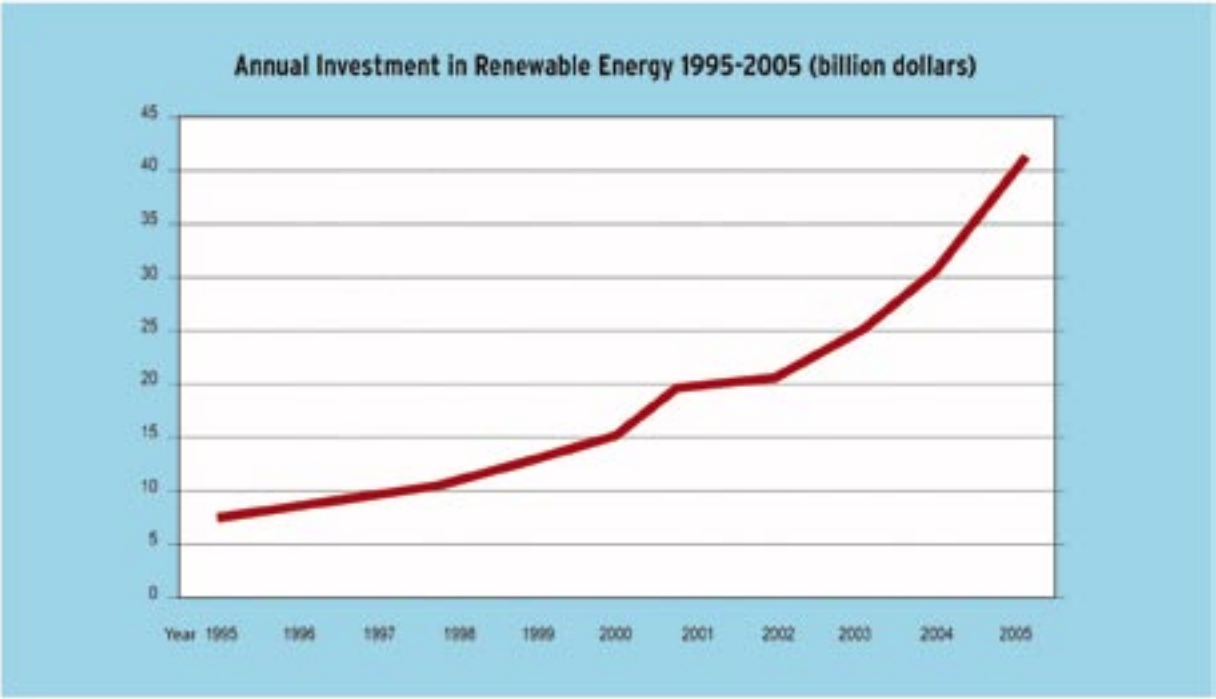
- In order to promote new, efficient power plants, electricity from renewable energies and cogeneration, it is important to ensure that new power plant operators throughout all European Union countries are entitled to non-discriminatory connection to the various grids. For this reason, liberalisation of the internal European electricity and gas market needs to be consistently expanded.

Renewable energies

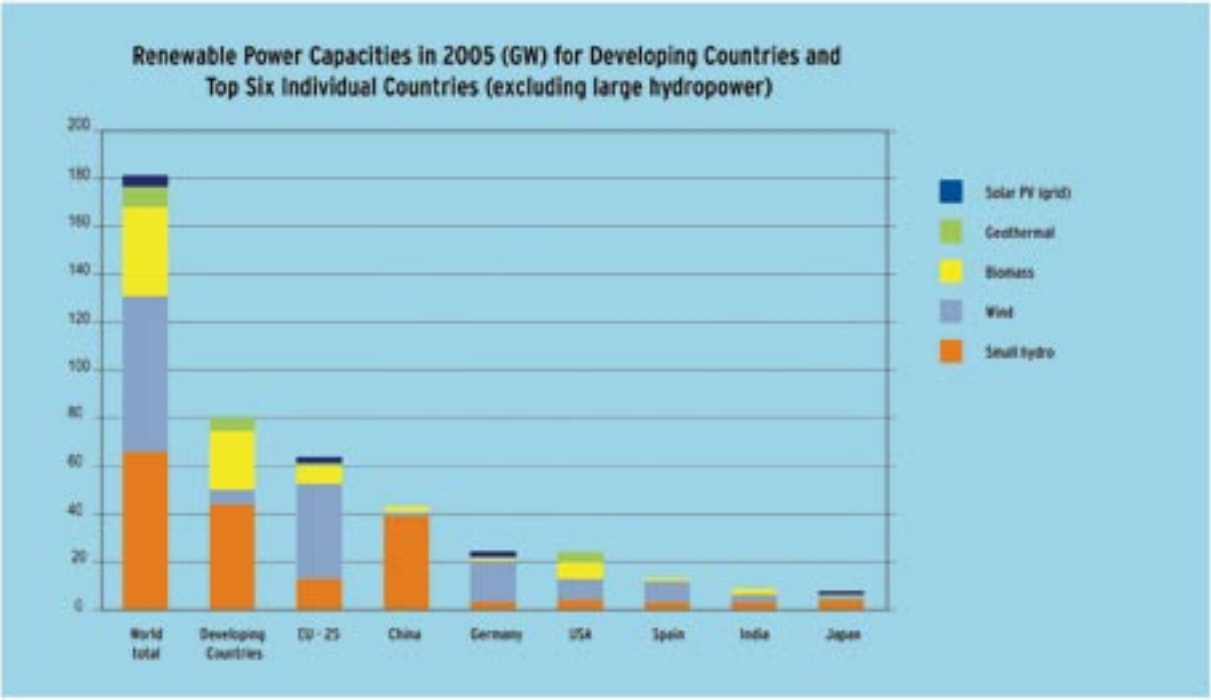
Southern hemisphere countries are currently paying more for oil and gas imports than they receive in government development aid, which undermines all their efforts to combat poverty. Conversely, the use of renewable energies could help to make them more independent. As such, introducing this technology not only contributes to climate production but also to stable, sustainable long-term economic growth in developing and newly industrialising countries.

The international conference on renewable energies, *renewables2004*, was held in Bonn in June 2004, and served as a global signal to increase the use of renewable energies. In total, the conference was attended by more than 3,600 representatives of politics, administration, international organisations, civil society and private industry.

The most successful outcome of *renewables2004* was the *International Action Programme (IAP)*, in which public and private institutions from around the globe committed to more than 200 measures aimed at promoting renewable energies. These include concrete expansion targets as well as suitable formulation of the political framework conditions. Other voluntary commitments concern the development of training capacity and research and development projects. The parties also agreed to step up private and public funding. If the *International Action Programme* is implemented in its entirety, global CO_2 emissions will fall by around 1.2 billion tonnes per annum from 2015. This is hardly peanuts: it is equivalent to approximately five percent of global CO_2 emissions. Reports to date are optimistic: Almost 80 % of the actions are already underway or have even been completed (**http://www.ren21.net**).



Source: REN 21 Renewables Global Status Report 2006 Update, www.ren21.net



Source: REN 21 Renewables Global Status Report 2006 Update, www.ren21.net

A comprehensive overview of the current state of affairs vis-à-vis renewables may be found in the status report by the global *Renewable Energy Policy Networks (REN21)*. This organisation was created at renewables2004, and is designed to serve as a platform for cooperation between governments, international organisations and representatives of civil society.

In November 2005, the Chinese government hosted a follow-up conference to *renewables2004* in Beijing. Once again, the *Beijing International Renewable Energy Conference (BIREC 2005)* was a complete success. The conference reiterated the fact that renewable energies are not the exclusive domain of industrialised countries. Countless examples from Europe as well as from developing and newly industrialising countries showed that renewable energies are already paying off in many areas. At the BIREC, the Beijing Government raised its game by announcing that 30 % of electricity in China will be produced from renewable energy sources by the year 2020.
www.birec2005.cn

Many countries have since followed suit. For example, Turkey has introduced an act to promote renewable energies based on the German model. The construction of wind farms and hydropower plants with an output of 3,000 MW has also been approved. Pakistan plans to supply 30,000 households in remote areas with wind and solar power. And in Armenia, a number of small hydropower plants each with a capacity of up to 10 megawatts are due to be built by 2010 with support from Germany. In view of the high demand from developing countries, one-third of the € 500 million earmarked by the German Government for renewable energies and energy efficiency in the wake of renewables2004 has already been allocated.

In Germany, 10.2 % of electricity was supplied by solar power, wind power, hydropower and geothermal energy in 2005. By 2020, we hope to increase this to at least 20 %. The *Renewable Energy Sources Act (EEG)* has been pivotal to this success. Many of the 25 EU Member States have adopted similar acts to promote renewable energies based on the EEG model in Germany and Spain. In order to optimise their national systems, Germany and Spain have established a feed-in cooperation model, which is also open to other interested parties.

The EU has promised to meet 21 % of its electricity demand from renewable energies by the year 2010. This translates into 12 % of total energy (including transport and heating).

During its Presidency of the EU, Germany will urge the Community to set itself an ambitious target for 2020. It is hoped that the 2007 *European Renewable Energy Policy Conference* in early 2007 will lend important impetus to this process. Additionally, a directive proposal is currently un-

der preparation aimed at promoting heating and cooling from renewable energies.

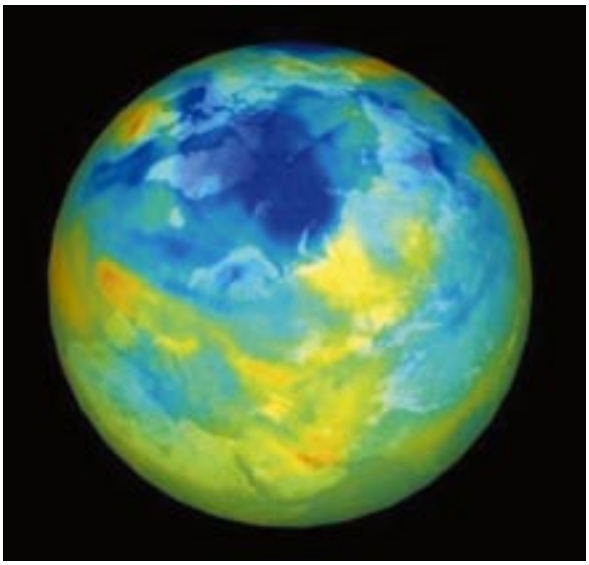
The next international milestone for increasing the global use of renewable energies will be the *15th Conference of the Commission for Sustainable Development (CSD 15)* in 2007. Two key points will feature on the agenda: Firstly, the commitments made in the *International Action Programme (IAP)* will be anchored and reviewed at UN level. Secondly, a resolution will be reached regarding the concrete implementation of measures to promote renewable energies at international level.

C. Protecting the ozone layer

The ozone layer, located at a height of 20 to 50 kilometres, protects life on planet earth from UV radiation from the sun. In recent years, particularly over the south pole, this vital protective shield has developed a hole up to 20 million square kilometres in size during the winter months. The northern hemisphere has also seen a sharp decline in ozone molecules consisting of three oxygen atoms.

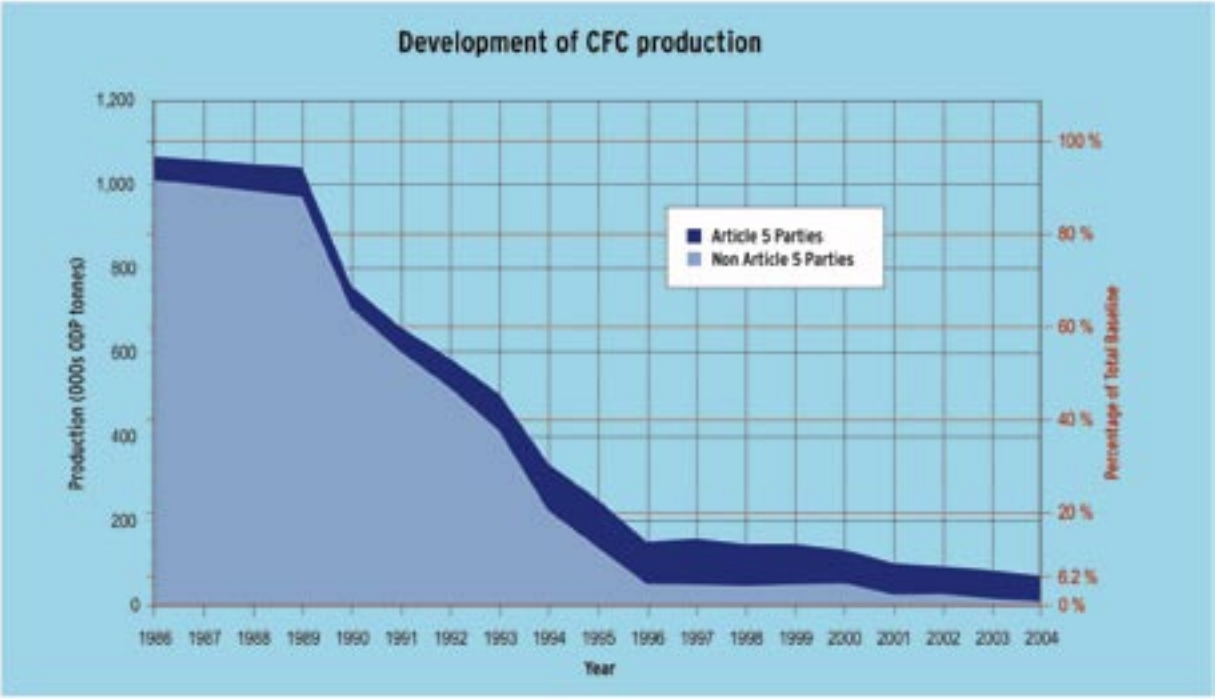
The hole in the ozone is caused by long-acting, complex chemical reaction chains, beginning with chlorine and bromium atoms from CFC, H-CFC halons and methyl bromide. For decades, these substances were used as propellants in spray cans, coolants and extinguishers and for soil fumigation, causing them to enter the atmosphere. Production has still not been discontinued completely, although the international community is well on its way to achieving this. According to the most recent agreements, the ozone layer is expected to regain its natural size between 2050 and 2060.

Ozone hole over the Antarctic

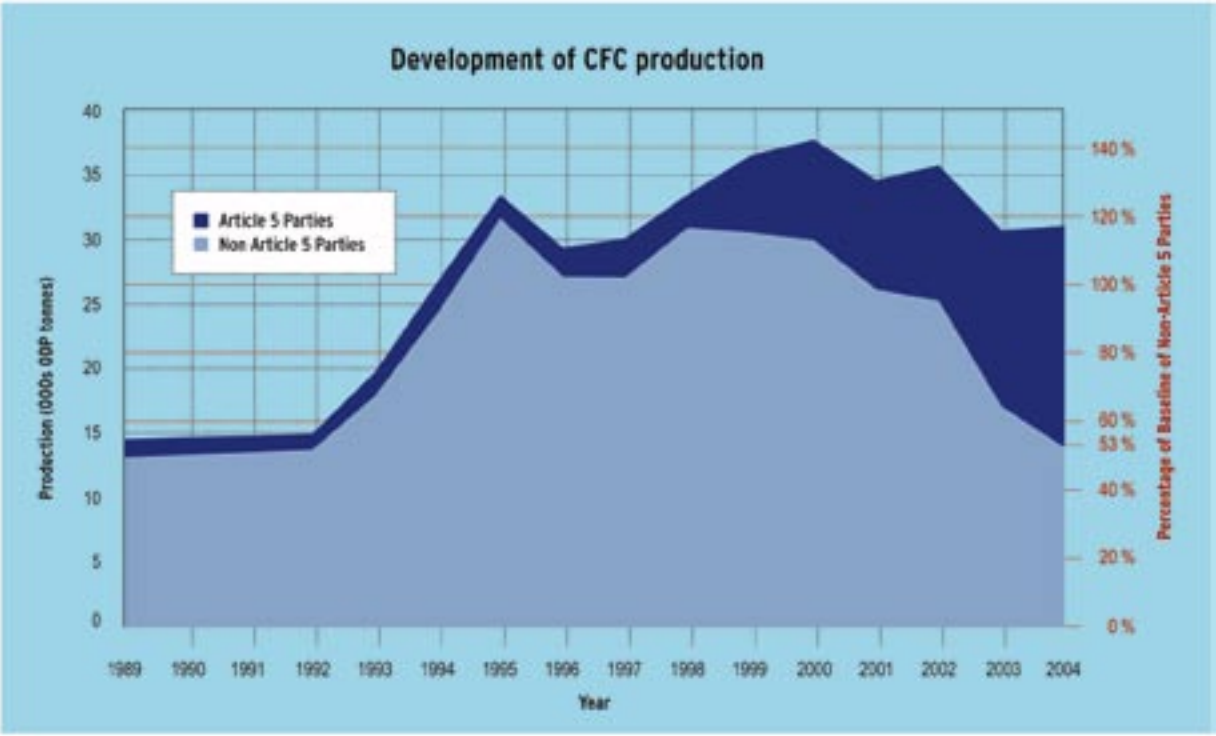


The satellite picture of the earth shows the position of the ozone layer above the Arctic. The deeper the blue colour, the thinner the ozone layer.

Source: NASA/dpa, 2000



Source: UNEP, 2005



Source: UNEP, 2005

Back in 1985, the *International Agreement on the Protection of the Ozone Layer* was adopted in Vienna. It provided the basis for the *Montreal Protocol* of 1987 which has since been signed by 190 countries. It sets out a precise timetable for the global phasing-out of the production and consumption of ozone-depleting substances. This timetable has since been tightened up several times, most recently in 1999 in Beijing.

Consequences of the "ozone hole"

- UV rays damage many useful plants: crop yields are reduced
- Less plankton is formed in the sea. This creates a shortfall at the very beginning of the food chain, with knock-on effects for animals and humans who feed either directly or indirectly on it.
- The health of humans and animals is at risk: Increased UV B radiation causes skin cancer and cataracts.

Shorter deadlines were applicable to industrialised countries from the outset, and in fact the phasing-out of CFCs and halons was already largely complete in these countries by 1995. Germany actually met its target as early as 1994. By contrast, developing countries have until the end of 2009 to completely discontinue the production and use of these substances. In industrialised countries, H-CFCs will be completely banned by 2030, and in developing countries by 2040.

The EU Member States will meet the phasing-out requirements far sooner than required by the Protocol. H-CFCs are expected to be discontinued completely by 2014, a full 15 years earlier than agreed.

Developing countries are supported by a multilateral fund to help them to meet their obligations under the Montreal Protocol. For the period 2006 to 2008 alone, the industrialised countries have earmarked 470 million dollars (approximately 370 million Euros) for this purpose. Germany is the third-largest contributor accounting for around eleven percent, after the USA and Japan.

In the near future, Germany and the EU will be pursuing the following objectives as a matter of priority:

- Providing adequate financial support for developing countries even beyond the current funding period up to 2008
- Stamping out the illegal trade in ozone-depleting substances which has arisen due to the difference in phasing-out periods between developing and industrialised countries

- Agreeing faster discontinuation scenarios for H-CFC and methyl bromide in developing countries

- Establishing cross-connections with other multilateral agreements where ozone-depleting substances are relevant.

The *International Plant Protection Convention (IPPC)* addresses the use of methyl bromide for the fu migation of wood. CFCs also play a role in the *Framework Convention on Climate Change* because they too act as greenhouse gases. At the same time, the greenhouse effect reinforces the formation of the ozone hole because it not only heats up the troposphere, but also cools down the stratosphere at the same time – which in turn facilitates the chemical reactions responsible for the diminishing ozone.

D. Preserving biological diversity

When most people hear the words "biological diversity", the first things that spring to mind are tropical rain forests, coral reefs and wilderness. However, "biodiversity" refers to the totality of all living organisms, their genetic variations and their habitats. The formation of oxygen and soil fertility, and the provision of natural raw materials and medicinal ingredients, are all achieved thanks to nature and its diversity, which are pivotal to man's very existence.

Plants, animals and their products are valuable resources. The genetic information of individuals can be also be used, for example in pharmaceutical research or as genetic material to improve crop seeds.

Scientists estimate that there are between three and thirty million different species of fauna and flora on earth, only 1.8 million of which have been identified and classified to date. Most of the species not yet identified are found in the tropics and in the world's oceans.

At present, biodiversity is in a state of perpetual decline worldwide, and the pace is increasing. Whether directly or indirectly, man is the main cause of this development:

- The diversity of **species** is shrinking, e.g. due to the overuse of certain species of fauna and flora.

- The diversity of **habitats** is under threat from the development, dissection and destruction of natural habitats and the intensification or modification of use.

- **Genetic** diversity is decreasing, for example, because agriculture concentrates on selected high-performance breeds and varieties, and traditional native breeds and varieties are dying out.

The principal reasons for the loss of biodiversity are:

- The wide-scale **destruction, reduction and fragmentation** of low-traffic, undissected habitats

- The **pollution** of air, oceans, rivers and soils

- **Global warming**, which is already impacting sensitive ecosystems such as coral reefs, mountain regions and polar regions

- The **consumption habits of industrialised and newly industrialising** countries in particular, which are based on extensive consumption of energy and raw materials. This includes the transportation of many goods half way round the world, as well as the consumption of tropical woods and overfishing. Monoculture plantations of soybeans, palm oil and cellulose are also a consequence of modern consumption.

- **Population growth, poverty, displacement**. Poor people in particular are both victims and involuntary perpetrators of environmental destruction. Because desperation forces them into virgin ecosystems in order to settle there or allow their cattle to graze there, they often destroy this habitat, which in turn exacerbates poverty and unfairness.

- The **migration or entrainment of non-native species**, which may displace native fauna and flora.

Species are currently becoming extinct at a rate 100 to 1000 times higher than their assumed natural extinction rate, as a direct consequence of human actions. At the same time, entire ecosystems are under acute threat. According to estimates by the FAO, 42 % of the tropical rain forest is thought to have been destroyed by 1990, and since then, the area has declined by a further estimated 0.5 to 1 % per annum.

Since the early Seventies there have been a number of international conventions and treaties designed to curb the decline in biodiversity. Apart from the *Washington Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES)*, the other most important convention is the *UN Convention on Biological Diversity (CBD)*, which was adopted at the 1992 "Earth Summit" in Rio de Janeiro. Apart from the obligation to preserve biological diversity via protection and sustainable use, the Convention also aims to facilitate access to genetic resources and to ensure that countries of origin benefit from their use – for example, in the production of medicine – in a fair and balanced way. Developing countries, which often have a particularly high level of biological diversity, should receive financial support from industrialised countries with implementation of the Convention as well as practical support via the transfer of know-how and technology.

The *Cartagena Protocol on Biosafety* was also adopted within the framework of the Convention on Biological Diversity (CBD). It regulates the handling of genetically modified organisms, and is thus a response to public concerns that such organisms could potentially impair natural diversity. Specifically, it addresses the safety of the natural environment and human health associated

with the import, export and use of genetically modified organisms. In this way, the Protocol creates a framework for the safe, global proliferation of biotechnology.

In 2008, Germany will host the 9th Conference of the Parties to the *Convention on Biological Diversity (CBD)* and the 4th Meeting of the Parties to the *Cartagena Protocol*.

The aim will be to adopt concrete, practicable resolutions for meeting the 2010 target set at the 2002 World Summit on Sustainable Development in Johannesburg, which aims to significantly reduce the current rate of loss of biodiversity by the year 2010.

The German Environment Ministry is particularly keen to see progress in the following areas:

- Creation of a worldwide, representative network of protected areas both on land and at sea.
- Preservation of the biological diversity of the forests, *inter alia* by creating protected areas. The local population should be able to use these areas sustainably and receive financial support for preserving the forests.
- Access to genetic resources and equitable sharing of the benefits derived from the use of genetic resources.
- Innovative financing mechanisms for biodiversity measures.

Other priorities of the CBD's work programme for the next few years include:

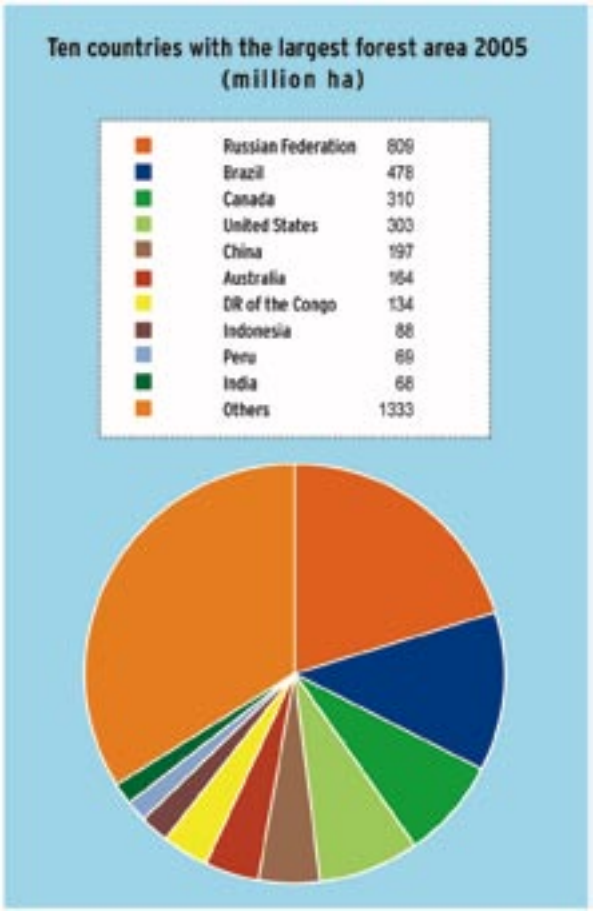
- Biodiversity in agriculture
- Implementation of the global strategy on the protection and sustainable use of flora
- Dealing with invasive, non-native species
- Incentive measures for the protection and sustainable use of biodiversity
- Ecosystem-based approach
- Technology transfer

E. Protecting the forests

Forests play an irreplaceable role in the preservation of life on earth. Not only are they the main producers of biomass, they are also home to the most species of fauna and flora. At the same time, the forests act as power stations for the entire biosphere. They drive the carbon, nitrogen and oxygen cycles, and are therefore a decisive climate factor.

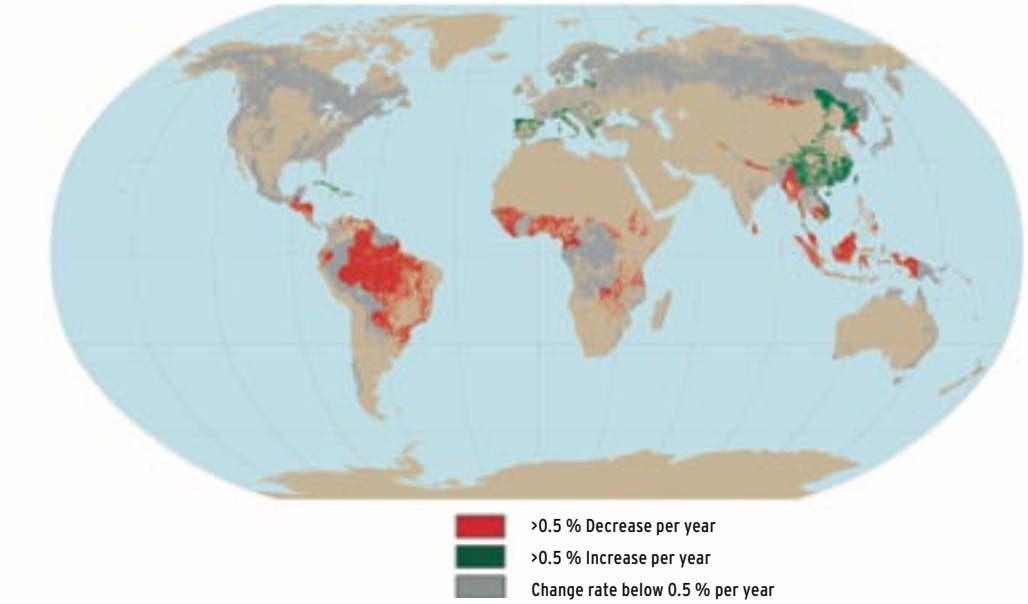
Not only does man use the forest for recreational purposes, but also as a provider of wood and food. Additionally, forests act as effective filters for many air contaminants.

Despite their overriding importance, forests worldwide are diminishing in size at a rapid pace. According to a recent report by the FAO a further 7.3 million hectares disappeared between 2000 and 2005. The reasons for this are complex. In industrialised countries, the forests are damaged primarily by air contamination and the resultant acidification of soils. Recently, however, there have also been incidences of clear-felling on a vast scale, for example in Canada or Russia. The wood felled is destined for industrial use.



Source: FOOD AND AGRICULTURE ORGANIZATION OF THE UNITED NATIONS (FAO)

Global deforestation and afforestation rates



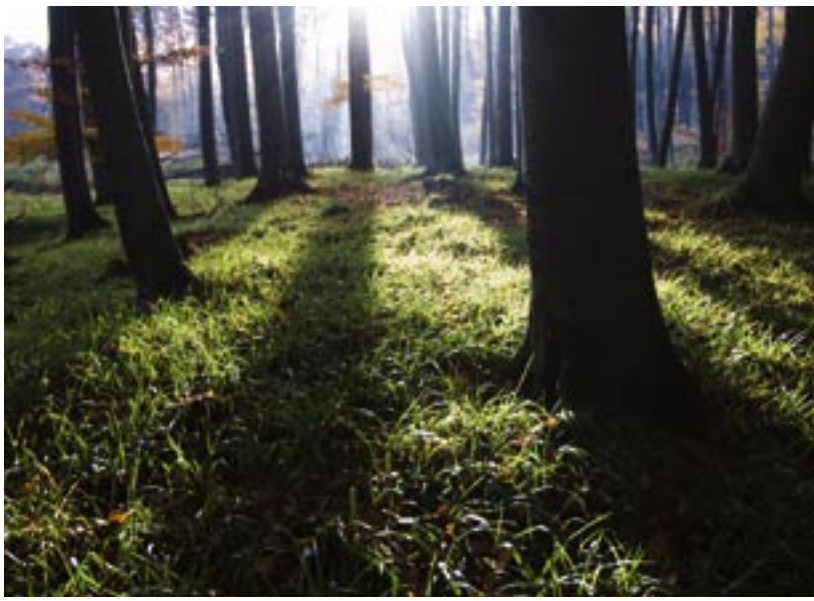
Source: FOOD AND AGRICULTURE ORGANIZATION OF THE UNITED NATIONS (FAO)

In developing countries, forests tend to be destroyed primarily via slash and burn or illegal logging, often with the aim of acquiring new arable land. However, large-scale development projects and inappropriate forms of wood use are also destroying vast tracts of woodland.

For the first time, the 1992 Rio Conference obtained a consensus on the future handling of forests in all climate zones as set out in the Forest Declaration. The key words are protection, sustainable management, and development. Since then there have been a number of important initiatives to implement the Rio resolutions. October 2000 marked the creation of the *United Nations Forest Forum (UNFF)*. It serves as a central committee for discussion and cooperation in international forest policy. After many years of negotiations, in February 2006 the members agreed on four global core targets, although these are not legally binding. In 2007, a voluntary Code of Conduct is to be adopted.

The *Convention on Biological Diversity (CBD)* has outstanding importance with regard to woodland biodiversity. A practical work programme for forests was adopted at the 6th Conference of the Parties in April 2002 in The Hague. Germany views the main priorities as follows:

- The creation of an international network of major forest reserves
- Improved management of existing conservation areas
- Consistent application of the "ecosystem-based approach" to forest management. This is an holistic approach which seeks to strike a balance between various legitimate claims. In particular, this includes the protection and sustainable use of the forests and equitable participation by the countries of origin, for example if their products are used to make lucrative medicines.



The German Government will continue to pursue these avenues in 2008 when the 9th Conference of the Parties to the CBD is held in Germany.

At EU level, the EU Action Plan for Forest Law Enforcement, Governance and Trade *(FLEGT)* was adopted in November 2005. In particular, it regulates the trade in wood with third-party countries, and covers all forests. The Action Plan comes into play once a suitable partnership agreement has been concluded with the exporting country. Initial discussions are currently underway with Ghana, Cameroon and Malaysia. Concrete negotiations are expected to begin in early 2007.

Germany is also involved in development cooperation projects devoted to saving the tropical rainforests, and since 1988 has donated around 130 to 150 million Euros per annum to this cause.

F. Sustainable consumption and efficient production

Together, Europeans and North Americans account for around one-fifth of the global population. These countries enjoy a standard of wealth which is beyond the wildest dreams of most people living south of the equator. To support their lifestyle, the wealthy plunder the earth's resources, which in fact belong to everyone. Within just a few generations, fossil fuels (oil, gas and coal) which have evolved over millions of years have gone up in smoke.

Unlike the USA, we Europeans have at least realised that the "throw-away society" is over. However, our consumption of raw materials remains far too high, and still at the expense of poorer nations and future generations. It hardly bears thinking about China and India having the same density of car ownership as Germany.

The excessive consumption of resources by industrialised countries equates to their share of global environmental problems. They must lead the way forward in transforming production and consumption patterns. Everyone, from private consumers to industrial conglomerates, must tailor their actions to the principle of sustainability.

Renewable natural commodities such as wood or fish stocks must never be exploited beyond their ability to replenish themselves. Minerals and fossil fuels should only be used if they can be replaced by other materials or energy carriers. And emissions of all types of substances are only admissible insofar as they do not exceed the ability of ecosystems such as climate, forests and oceans to adapt. Both production and consumption offer promising approaches for a trend reversal in favour of sustainability. The German Government is keen to consistently explore every avenue.

Whereas in the past, environmental policy was aimed primarily at minimising the emissions from a factory or plant, today this approach has been complemented by a product-based approach to environmental protection. The entire lifecycles of products such as yoghurts, including their plastic pots, or washing machines, must be taken into account, including the extraction of raw materials, manufacturing, transportation, pollution and resource consumption during use, and finally recovery and disposal. This was agreed by EU Environment Ministers in Weimar in May 1999.

Environmental policy experts agree that resource productivity needs to be increased by a factor of 4 at the very minimum.

Access to suitable information is an important pre-requisite for persuading people to change their consumption habits. As well as environmental education in schools, this also includes campaigns which address the consequences of certain consumption patterns. The labelling of eco-friendly products is another way of encouraging sustainable conduct.

It is also crucial to ensure the adoption of pricing policies which make allowance for all environmental costs, particularly the cost of disposal. One way of placing the burden on the user rather than on the general public is to obligate manufacturers to accept the return of their end-of-life products and reuse the materials from them, as envisaged in the Electrical and Electronic Equipment Act.

At UN level, too, there are now numerous approaches for promoting sustainable production and consumption patterns. After the *UN Commission for Sustainable Development (CSD)* had adopted appropriate guidelines in April 1999, the 2002 World Summit on Sustainable Development in Johannesburg prescribed the first ever global action programme in this field, details of which were concretized in Marrakech in 2003. Within the context of a ten-year framework programme, there is to be a global exchange of experiences involving various players around the world. The aim is to establish rules for cooperative conduct at international level, and to forge new partnerships. The programme also aims to identify starting points for a long-term strategy.

In order to drive this process forward in Germany, in February 2004 the German Environment Ministry and the German Environmental Agency created the *National Dialog Process to Promote Sustainable Consumption and Production Patterns*. One of the topical dilemmas debated by expert representatives from politics, industry, academia and civil society was the fact that although many devices are becoming more and more energy-efficient, they nevertheless consume more electricity as they acquire new functions. The aim is to formulate joint solutions in order to meet the ecological requirements.

The German Government also believes that the following measures should be taken in the near future in order to promote more sustainable production and consumption structures:

- The obligation to disclose energy ratings to customers should also apply to IT and communications equipment as well as consumer electronics. To date, this requirement has only applied to appliances such as washing machines and refrigerators in Germany.

- Greater efforts should be made to bring all the relevant players together – i.e. manufacturers, disposal agents, dealers, consumers, environmental and consumer protection organisations. In collaboration with politicians, they should devise new instruments for consumer information and product declaration.

G. Environment and transport

Around 20 % of climate-damaging CO_2 emissions in Germany originate from transport, and the trend is rising. Nitrogen oxides, hydrocarbons, carbon monoxide and soot particles from vehicle exhausts also pollute the air that we breathe. Traffic noise is a source of stress for many people. However, mobility is a basic requirement of any modern society or economy, and transport therefore needs to be designed in such a way that it satisfies the demands of sustainable development.

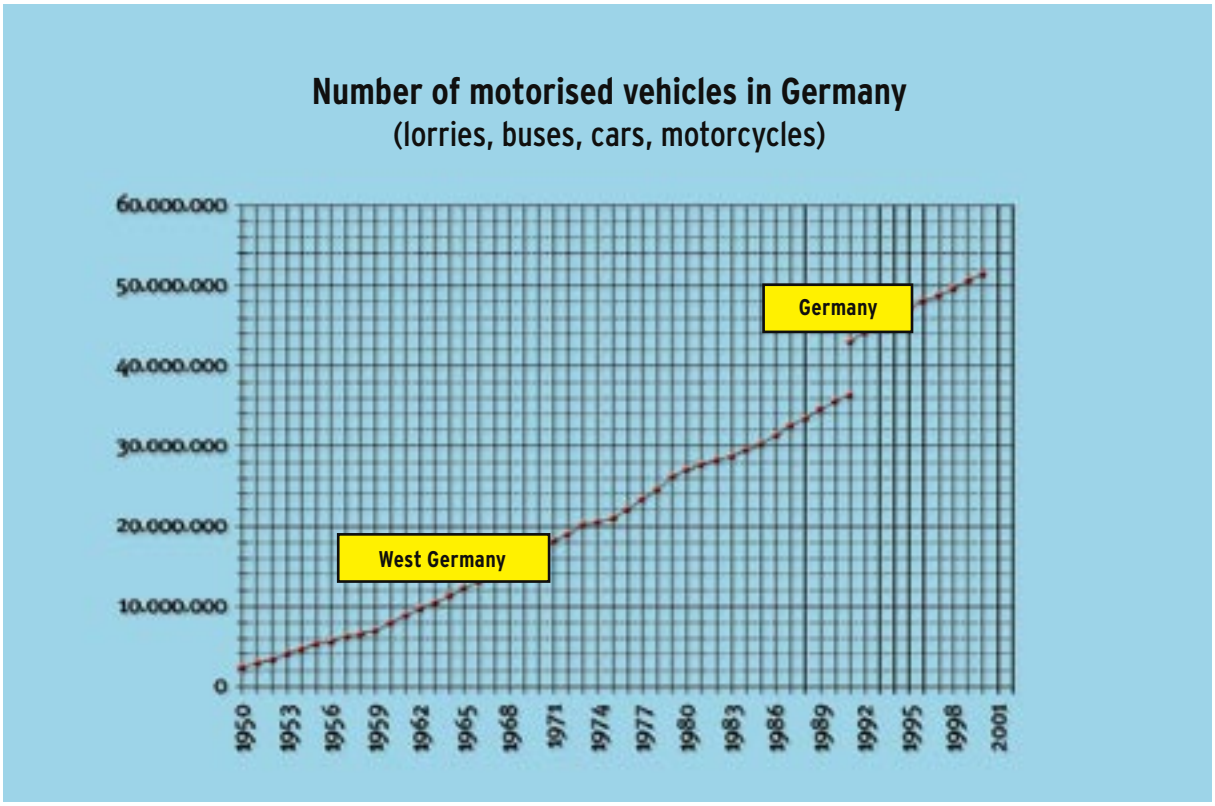
In **road traffic** the EU has significantly reduced pollutant emissions since the early Nineties by adopting ever more stringent exhaust gas regulations. The currently valid "Euro 4 standard" for passenger cars means that admissible pollution levels have been cut by 85 % compared with 1992. The German Government has accelerated this process by means of tax incentives, so that the limits were met ahead of schedule. A similar graduated EU plan on pollutant reduction has applied to HGVs and buses since the year 2000. The reduction in the sulphur content of petrol also had a pleasant side-effect: new cars need less fuel.

In the **shipping** sector, emissions remained unregulated for many years. In September 1997, the *International Maritime Organisation (IMO)* decreed that emissions of nitrogen oxide should be limited with effect from 2000. Differentiated regulations now apply to ocean-going, inland and passenger vessels with regard to the maximum level of sulphur in fuel.

No other transport sector has expanded as rapidly as **air traffic** in recent years, and the trend shows no sign of abating. Because CO_2 emissions in high air strata have a more pronounced greenhouse effect those than closer to the ground (the *Intergovernmental Panel on Climate Change (IPCC)* calculates a factor of 2.7), there is an urgent need for international agreements in this field. The German Government is pressing for agreements both within the EU and at international level in the framework of the UN climate negotiations and in the *International Civil Aviation Authority (ICAO)*. Furthermore, air tickets should only be sold at an "ecologically honest price".

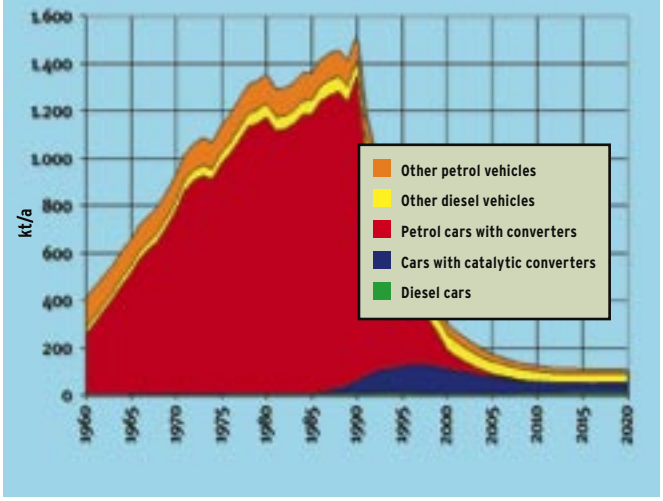
In recent years we have managed to significantly reduce conventional traffic pollutants. At the same time, however, a further increase in CO_2 emissions from transport is anticipated. In order to counteract this, not only must we reduce the average petrol consumption, but must also promote less transport-intensive structures in industry. A shift in favour of more eco-friendly modes of transport and clever town planning are also key factors.

In the longer term, replacing petrol and diesel with new fuels should be our concern. These could include fuel cells, for example, or hydrogen extracted using regenerative energies.

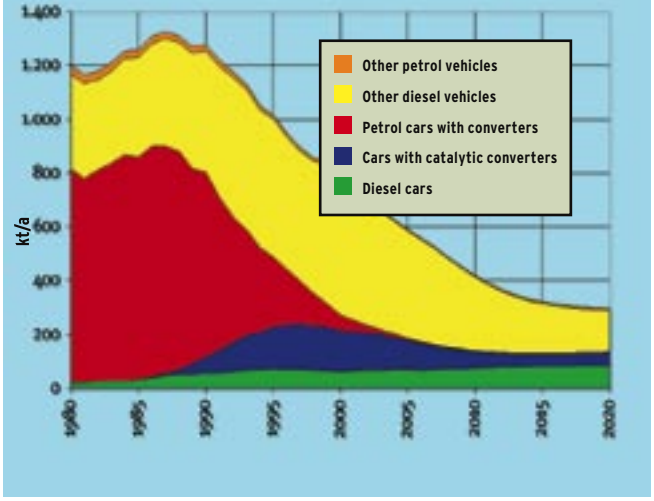


Source: TREMOD (Transport Emission Estimation Model) calculation according to the Ifeu Institute, Heidelberg (as at 30 November 2005)

Development and forecasting of hydrocarbon emissions (HC) from road traffic in Germany



Development and forecasting of nitrogen oxide emissions (NO_x) from road traffic in Germany

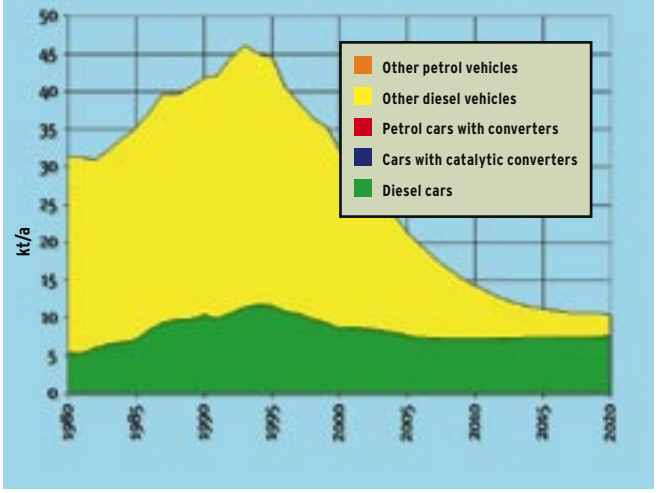


The European automotive industry made a commitment to the EU Commission to further reduce the CO_2 emissions of passenger vehicles. Under this agreement, in the weighted average in the EU a new vehicle will consume a maximum of six litres of petrol or 5.3 litres of diesel. However, it is doubtful whether this target can still be reached. In January 2007 the Commission is expected to issue a Communication on the future CO_2 reduction strategy for passenger vehicles. This will be discussed under the German EU Presidency. The aim will be to advance CO_2 reduction and ensure that the targeted CO_2 reductions are actually achieved.

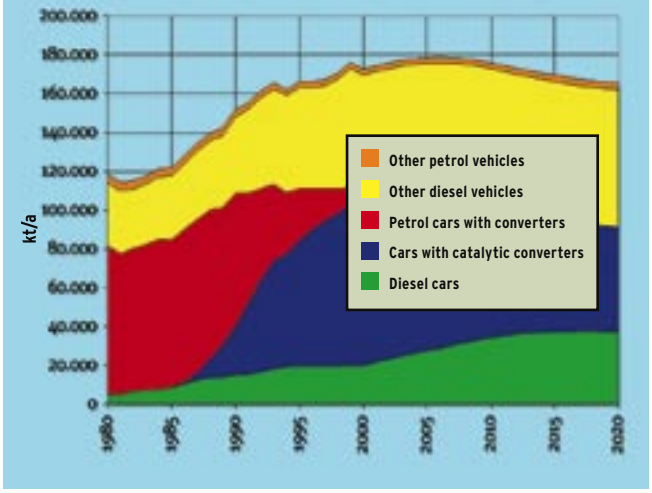
The German Government is currently pursuing a wide range of concrete targets to make mobility more sustainable:

- All road vehicles should be compulsorily fitted with on-board diagnosis systems (OBD) to monitor their pollutant emissions.
- At EU level, we need to slash emissions of climate-damaging CO_2 and the ozone precursor substances NO_x and VOC in the transport sector by the year 2010. Even stricter limits should also be set for soot particles.
- As the enforcement of an international regulation on air traffic looks impossible at present, the German Government is concentrating its efforts on ensuring that aircraft are included in the EU emissions trading system. It is also hoped that an EU regulation will drastically reduce the sulphur content of kerosene.

Development and forecasting of particulate emissions from road traffic in Germany



Development and forecasting of carbon dioxide emissions (CO_2) from road traffic in Germany



Source of all charts: TREMOD (Transport Emission Estimation Model) calculation according to the Ifeu-Institut Heidelberg (as per 30 November 2005)

- The German Government supports research aimed at reducing the fuel consumption of aircraft by up to 25 % by the year 2010. In addition, nitrogen oxide emissions are to be reduced by 85 %.

H. Eco-friendly agriculture

Agriculture is the oldest economic sector in the world, and is more dependent on fertile soils and a stable climate than any other industry. At the same time, it has a huge influence on the ecological balance, water and soil quality, and on the preservation of biological diversity. Even in highly developed industrialised countries, a large proportion of the land is used by farmers. Across the EU, 42 % of land is used agriculturally, and in Germany this figure is even higher, at 47.9 %.

Since the Fifties, agricultural techniques and economic framework conditions worldwide have undergone such a radical transformation that agriculture has become a major source of environmental pollution.

- Fertilisers and pesticides contaminate the groundwater and surface water.

- Fertilisers on soils which were originally low in nutrients drive away native species of fauna and flora.

- Additionally, agriculture is responsible for a significant proportion of climate change: Dinitrogen oxide in fertilisers and methane emissions from cattle exacerbate the greenhouse effect.

- Heavy machinery leads to soil compression and erosion of the topsoil.

- Too many animals in confined spaces pollute the surrounding area with ammonia. Forest damage and over-fertilisation of low-nutrient ecosystems are the result.

- The breaking up of grassland, the removal of bushes, trees and wetlands, and monotonous crop rotation can impair or destroy the habitats of wild animals and plants.

Agricultural policy in the EU is characterised to a large extent by subsidies. Whereas prior to 1992, the amount of funding received depended solely on the volume produced, steps have gradually been introduced to encourage a more eco-friendly approach to agriculture. Increasing sums of money are also being set aside to reward environmental achievements. The integration of environmental and nature conservation aspects into the Common Agricultural Policy in 1999 was particularly important in this respect, and this approach continued with the reform package Agenda 2000. Since then, “supporting measures” have

been seen as a separate funding area for rural regions, creating the "second pillar" of EU agricultural policy.

Further progress led to a 2003 reform whereby Germany has discontinued the majority of subsidies based on the nature and scope of production since 2005. Additionally, recipients must observe certain standards in the areas of environmental and nature conservation, food safety and animal welfare. Following an adaptation phase, set regional premiums will also be paid for arable land and grassland, so that grassland management is no longer at a disadvantage. This policy is already showing signs of success: Many environmental impacts have been tangibly reduced, and substance cycles closed.

The most recent EU agricultural reform also includes the reallocation of some direct payments in favour of rural development - up to a maximum of five percent from 2007. However, EU budget cuts for the financing period 2007-2013 relativise the actual amount of funding available.

We should use the review of the EU financial budget scheduled for 2008/2009 as an opportunity to initiate a fundamental rethink of EU agricultural policy, with a focus on rural development. Diversification of industry in the rural sector not only offers potential for more employment; what is more, many innovations also promise benefits for environmental and nature conservation. The production of biomass is one such example.

Following a long and controversial debate over domestic policy, Germany's Federal Nature Conservation Act was amended in early 2002. For the first time, it contained a definition of "good agricultural practice" for eco-friendly agriculture, fishery and forestry. These regulations strengthen the role of farmers in the maintenance and sustainable use of our diverse cultural landscapes. Extensive legislation was also adopted in relation to water management, soil and plant conservation and fertilisers, setting out framework conditions designed to minimise the environmental impacts from agriculture.

I. Sustainable waste management

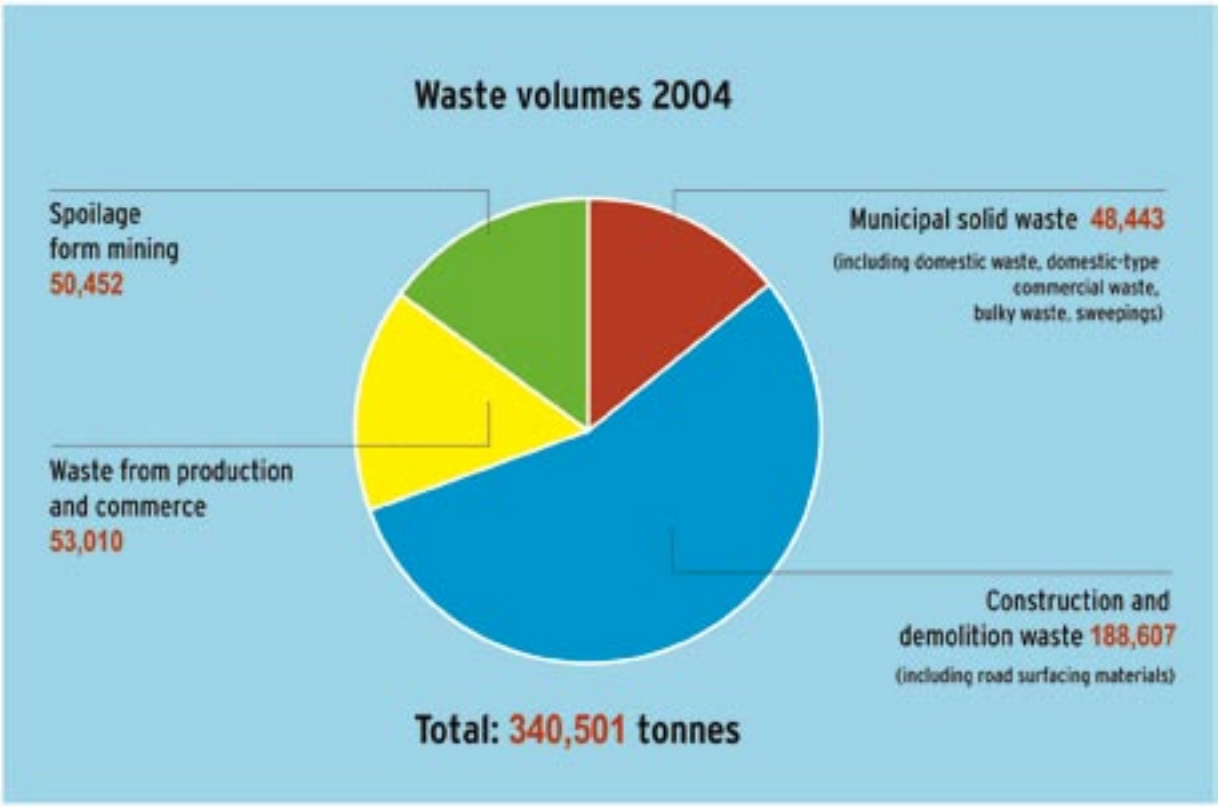
The meaning of sustainability in waste management is best illustrated by nature itself: there is no such thing as waste. At the end of their life, plants and animals are decomposed, and the materials used to create new life – a never-ending circle of life.

In stark contrast, giant waste mountains are the flip side of today's industrial society. In Germany alone, we produce 340 million tonnes of waste each year, of which construction and demolition waste accounts for approximately 55 %, while industry and mining contribute a further 30 %. The rest is made up of some 48 million tonnes of household waste, not all of which is sustainable, since:

- Waste contains raw materials and energy. We cannot simply discard nature's precious resources. Instead, they should be re-incorporated into production.

- The safe landfilling or incineration of waste is costly; otherwise it poses a threat to soil, groundwater and air.

Less waste means less consumption of resources and a reduced impact on the environment. As such, German waste management policy is based on a simple and logical hierarchy of objectives:



Source: Federal Statistical Office 2006

1. The avoidance of waste has absolute priority.

2. Unavoidable waste must be materially or energetically reused as a matter of priority.

3. Any waste that cannot be recovered must be disposed of in an eco-friendly fashion.

In recent years, the EU has taken important steps in this direction. In February 1997, the EU Council of Environmental Ministers adopted provisions aimed primarily at the avoidance of waste and making manufacturers more responsible for the entire lifecycle of their products. These were supplemented by an avoidance and recycling strategy presented by the EU Commission in 2005, aimed at promoting the low-waste economy by reducing the consumption of raw materials and energy. The 6th EU Environment Programme, which runs until 2010, follows a similar approach. However, this is only the beginning. We need to address the entire lifecycle of products and materials via directives on waste landfill sites, waste incineration, a European Waste Directory and the disposal of individual product groups such as cars, electronic equipment and batteries.

In Germany, the policy rethink in favour of a resource-conserving closed substance cycle was initiated in 1986. Based on the new Waste Management Act, the *Packaging Ordinance* was adopted in the early Nineties. It obligates manufacturers and distributors to take back and recycle point of sale packaging. The same approach continued with the *Closed Substance Cycle and Waste Management Act* which entered into force in October 1996.

In keeping with the three-level hierarchy – "avoidance – recovery – eco-friendly disposal" it aims to promote the low-waste, disposal-friendly design of products and production systems. This helps to close substance cycles and conserve natural resources.

Since then, Germany has expanded its materials flow-based waste policy. Statutory provisions on end-of-life vehicles, batteries, waste oil, waste wood and electrical and electronic end-of-life equipment have entered into force. Voluntary agreements have been reached with industry on waste paper and construction waste.

The export of hazardous waste poses a particular problem at international level. As many developing countries do not have the necessary technical resources to deal with such waste, exports may pose a threat to people and the environment in these countries. The Basel Convention of March 1989, which has since been signed by 160 nations, agreed globally valid regulations on the admissibility, licensing and control of hazardous waste exports. For example, it stipulates that for the transboundary shipment of waste, permits must be obtained from the exporting country, all transit countries as well as the importing country.

In February 1998, the *Conference of the Parties to the Basel Convention* adopted a general ban on the export of hazardous wastes from industrialised countries to developing countries. This amendment to the agreement has not yet entered into force, however, because not enough countries have ratified it. In the EU, a ban on the export of waste destined for disposal has been in force since February 1993. Exports of hazardous wastes intended for recovery have been banned since January 1998 unless the target country is a member of the OECD.

Over the next few years, not only will Germany be calling for an amendment to the EU Framework Directive on Waste in favour of a closed substance cycle, but is also planning to support the new EU Member States and accession candidates in developing sustainable waste management systems. Support will also be given to developing and newly industrialising countries. Disposal standards also need to be updated at OECD level.

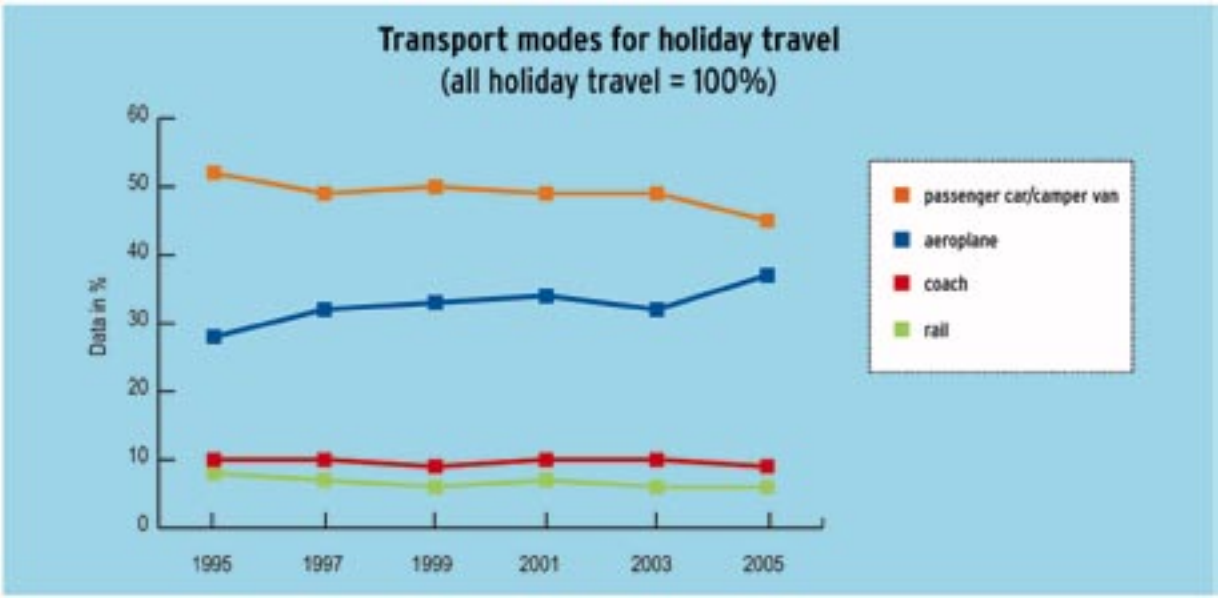
J. Sustainable tourism

More and more people are keen to escape their everyday lives for a few days or weeks and relax from the stress of work in an unspoilt natural environment. Parallel to this, the range of travel and leisure options available has expanded continuously. As a result, tourism has developed into one of the fastest-growing areas of the world economy.

According to the *World Tourism Organisation (WTO)*, global tourism is growing at a rate of four percent per annum. By the year 2020, it anticipates some 1.6 billion international tourists. 47.8 million Germans (aged 14 or above) took at least one trip with 4 nights' accommodation in 2005. A total of 64.1 million holidays (64.5 million in 1995) were taken, including 16.3 million second and third holidays.

For many countries, tourism offers an attractive source of income, but at the same time, it is also responsible for a wide range of environmental impacts:

- Semi-natural areas are often destroyed by the construction of hotels, leisure facilities, access roads and other tourism infrastructure.
- In 2001, tourism from Germany alone was responsible for greenhouse gas emissions totalling 75.8 million tonnes of CO_2, around 57 million tonnes of which were attributable to air travel.
- Transportation to and at the destination generates noise and pollutant emissions and likewise impacts the climate.



Source: Forschungsgemeinschaft Urlaub und Reisen, 2005

- Accommodation, catering and transportation entail the consumption of energy, water and raw materials, and lead to the creation of waste mountains.

- Leisure activities – from water sports on the reed belt to off-piste skiing – can disturb wild fauna and flora and destroy nature.

More than almost any other sector, tourism relies on an intact environment and nature, but where resources are consumed to excess and natural habitats are impaired, the very foundations of the tourism industry are under threat.

The German Government has devised a range of strategies aimed at a sustainable tourism policy. In 2001, it introduced the environmental brand "Viabono – Natural Enjoyment on Holiday", which aims to make eco-friendly travel attractive to a broad range of people, while at the same time encouraging the tourism industry to focus on the environment. With the involvement of 20 tourism, local authority, environmental and consumer organisations, ambitious catalogues of criteria were drawn up for tourist communities and protected areas, hotels, guest houses, campsites, holiday rental properties and rooms in private houses.

Through international cooperation, initiatives aimed at sustainable global tourism have been stepped up since the 1992 Rio Conference. *UNEP* adopted environmental guidelines for tourism in 1995. In the same year, an 18-point charter was adopted at the World Conference for Sustainable Tourism. In 1997, the UN included a chapter on "sustainable tourism" in its Agenda 21 programme. Two years later, the *UN Commission for Sustainable Development (CSD)* adopted a comprehensive *International Work Programme for Sustainable Tourism*.

The 7th Conference of the Parties to the CBD in 2004 adopted *Guidelines on Biological Diversity and Tourism Development*, partly thanks to the efforts of the German Environment Ministry. The Ministry is now supporting its implementation in a number of projects at home and abroad.
The guidelines are a voluntary mechanism and should be updated continuously. They may be adapted to a variety of situations and ecosystems, and are designed to ensure that everyone involved in and responsible for tourism and nature conservation, as well as the local community, is able to participate in tourism projects.

K. Protecting the oceans

71 % of the earth's surface is covered by ocean. It plays a pivotal role in life on earth. Not only is it an important climate factor, acting as a vast heat accumulator which influences the weather and also absorbs large quantities of carbon dioxide; it is also the largely unexplored habitat for countless species of flora and fauna, and a major source of human nutrition, with some 70 million tonnes of fish caught each year.

However, the ecosystems of the world's oceans are at risk from a variety of factors, and irreparable damage has already been inflicted in some cases. Such damage includes:

- Pollution and other impacts associated with the discharge of sewage, the discharge of air pollutants, discharges and waste from shipping, and from the mining of raw materials.
- Irresponsible overfishing and destructive fishing practices
- The greenhouse effect and the ozone hole, which are transforming the fauna and flora of the oceans.

The first international conventions on marine protection were concluded in the early Seventies, and have since been tightened up several times; for instance, the Protocol of 7 November 1996 to the 1972 Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter, which entered into force in March 2006. The Protocol essentially prohibits the dumping of wastes and other matter with a very few exceptions, such as the dumping of dredged material.

The United Nations (UN) Convention on the Law of the Sea, which entered into force in 1994, sets out rights and obligations pertaining to the protection and management of the oceans. The Convention on the Conservation and Management of Straddling Fish Stocks and Highly Migratory Stocks builds on this. Also at UN level, there is a worldwide action programme to protect the marine environment and a code of conduct aimed at sustainable fishing.

Within the context of the Johannesburg Sustainability Summit and the Convention on Biological Diversity (CBD), the Parties decided to set up a worldwide network of protected areas across the world's oceans by 2012.

The regional conventions on the protection of the North-East Atlantic and the Baltic Sea likewise make a decisive contribution to marine conservation:

The *OSPAR* Convention is responsible for the North Sea, and aims to reduce the discharge of pollutants and radioactive material to concentration levels in the marine environment which are close to natural background levels by 2020, or in the case of alien substances, close to zero. The manifestations of over-fertilisation from nutrients are to be eliminated by 2010. Other measures target the effects of offshore oil and gas extraction, the conservation of species and habitats, and monitoring of the marine environment.

The Helsinki Convention is designed to protect the Baltic Sea, and is currently developing an action plan to address the problems of over-fertilisation, pollutants, discharges from shipping, and species diversity. It is hoped that suitable measures will bring about a further improvement in the quality of the Baltic Sea ecosystem.

Marine conservation is also an important topic at EU level. In October 2005, the Commission presented a strategy paper on marine conservation together with a draft Directive which it hopes will lead to a good status of the marine environment by the year 2021. In June 2006, it published a Green Paper on European marine policy, which is to be debated between now and June 2007. The Green Paper addresses environmental protection, but also considers the economic exploitability and job opportunities offered by the sea.

Since 1984, eight Conferences on the Protection of the North Sea have been held at ministerial level, addressing all aspects of North Sea conservation.

The littoral states of the Wadden Sea – Germany, the Netherlands and Denmark – have coordinated their conservation efforts since 1982 within the framework of the Trilateral Wadden Sea Cooperation, and have agreed specific joint targets. As well as reducing pollutant discharges, there is also much emphasis on efforts to protect the Wadden Sea as a feeding, resting, breeding and moulting biotope for numerous species of waders and waterbirds, as a "nursery" for many North Sea fish, as a habitat for marine mammals such as seals, sea lions and porpoises, and on conserving the unique Wadden Sea landscape.

In 1998, the littoral states of the Baltic Sea adopted an "Agenda 21" at political level (Baltic 21). Environmental and marine protection are to be integrated into all relevant policy-making areas, including agriculture, energy, forestry, industry, tourism, transport, regional planning and fishing.

Despite all these activities, there is still a long way to go before consistent, sustainable marine protection will be achieved. With this in mind, Germany is intent on driving progress forward with the conservation and sustainable use of the North and Baltic Seas:

- Among other things, pollutant discharges are to be further reduced and an integrated system of coastal zone management set up which will involve all the relevant players.

- In order to conserve biological diversity, a network of representative protected areas in coastal and offshore waters will be designated by the year 2010 and a competent management system put in place. To this end, Germany has already designated 2 bird protection areas in the Exclusive Economic Zone in the North and Baltic Seas and registered 8 nature conservation areas for the European Natura 2000 network.

- The EU fisheries policy is to be updated from a sustainability viewpoint with full integration of the precautionary principle. Eco-certification of fishing establishments and fish products in accordance with the criteria and standards of the *Marine Stewardship Council (MSC)* or *Naturland e.V.* could provide important contributions in this respect.

- Further efforts must be made to reduce contamination from shipping. *Inter alia*, this includes developing the concept of the super-eco-friendly vessel and adopting measures at international level to further reduce air pollution from ship exhausts. Measures must also be implemented on the monitoring and handling of ships' ballast in order to counteract the entrainment of potentially harmful organisms.

L. Protection and eco-friendly use of transboundary rivers and lakes

Not only are rivers and lakes extremely important habitats for fauna and flora; they are also indispensable stations in the freshwater cycle – since life on land would be impossible without drinking water. The pressures on rivers and lakes are many and varied:

- Straightening, damming and other obstacles to migration such as power stations or barrage walls destroy the natural habitats of many fish and other creatures. Our alluvial landscapes, which often have a high level of biological diversity, are disappearing.
- Effluent containing pollutants from cities, industry and agriculture has a detrimental effect on water quality.
- Escalating global demand for water from industry and densely populated areas leads to shortages of drinking water and ecological damage in downstream regions.
- Extreme flooding occurs as a result of water body expansion, sewer construction and land sealing, and these factors are on the increase due to climate change.

As such, water conservation cannot be practised in isolation but must also be anchored, for example, in agriculture or transport policy. There needs to be greater harmony between use and conservation. Far-sightedness is also called for: Rivers have tributaries, are connected to the groundwater and the coastal areas, and are therefore deserving of protection as integrated ecosystems. Worldwide, there are more than 200 river basins which span the territories of several countries. Around two-thirds of them are already subject to institutionalised forms of cooperation.

Germany is a member of the International Commissions for the Protection of the Rhine, Maas, Moselle-Saar, Elbe, Oder, Danube and Lake Constance. Germany also cooperates with several of its neighbours in bilateral transboundary water commissions.

The *United Nations Economic Commission for Europe (UN-ECE)* has adopted a *Convention on the Protection and Use of Transboundary Watercourses and International Lakes*. This Convention entered into force in 1996 and contains binding provisions for avoiding and controlling water pollution. It also prescribes warning and alarm systems. 35 countries have since ratified the agreement. In November 2006, Germany staged the 4th Conference of the Parties in Bonn.

The principles of this Convention are also reflected in the *EC Water Framework Directive*, which entered into force in December 2000. It is aimed at the sustainable management of European waters and combines a number of formerly fragmented plans into one integrative concept. The focus

now is on waterbody ecology. By 2015 we hope to have attained a good chemical, ecological and volume status of surface waters and of groundwater. Internationally coordinated programmes and management plans provide the basis for this.

The *EC Water Framework Directive* poses fresh challenges for international river basin commissions in Europe. The first milestone entailed taking stock of the waters in the river basins and reaching a mutual agreement. The reports submitted in the spring of 2005 show that most waterbodies cannot achieve a good status by 2015 unless all the affected parties make a concerted effort. For example, because agriculture is responsible for diffuse pollutant discharges, policies must also address these types of areas.

The next item on the agenda is the formulation of monitoring programmes and the coordination of national measures. By the end of 2009, it is hoped that the international management plans will be complete. In particular, cooperation to protect the Danube will be instrumental in bringing a number of Central and Eastern European countries up to EU standards.

Over the next few years, German policy will focus in particular on further reducing discharges of nutrients and pollutants, and improving the river ecosystems. This necessitates more widespread regional cooperation.

Flood prevention is also a top priority. The Rhine and the Elbe, for example, need more space. Specifically, this entails the renaturation of waterbodies and the recreation of flood plains. At the same time, afforestation and desealing of the catchment area coupled with extensive forms of agriculture can help to retain rivers within their banks.

M. Freshwater reserves

There is no lack of water on earth – but most of it is saline. Only one litre in forty is freshwater. Just under two-thirds of all fresh water is fixed in the polar ice caps or glaciers, while a further one-third is in underground groundwater reserves. Just 0.3 % of the earth's total freshwater reserves are found in surface waters such as rivers and lakes. As such, groundwater is the main usable water reserve.

Geographically speaking, the distribution of freshwater is very uneven. In arid regions with little groundwater and surface water, the supply situation can become critical if demand increases as a result of population growth and economic development. Environmental pollution and very high levels of water consumption by industry and agriculture are further reasons for the water shortages in many areas.

Viewed from a global perspective, water consumption has increased continually. However, access to clean water is very unevenly distributed. Whereas in Germany, each person consumes around 120 litres of top-quality drinking water per day, 400 million people in developing countries, many of them children, have access to less than 20 litres to meet all their cooking, drinking and washing needs – and often the water itself poses a threat to health. Around 1.3 billion people worldwide have no access to clean drinking water. In Africa alone, south of the Sahara, this affects 40 % of the population. The basic sanitation situation is even worse. Some 75 % of the population in this region lacks basic sanitation facilities; worldwide, the figure equates to around 2.6 billion people. The water and sewage situation plays an extremely important role in preventive healthcare. 80 % of diseases in developing countries are attributable to poor standards of water and sanitation.

Agriculture is the largest consumer of water worldwide. In some hot areas, farmers use up to 10,000 cubic metres of water on a single hectare of land. In regions with intensive artificial irrigation, agriculture may use more than two-thirds of the available water resources. UNESCO has calculated that up to 140 litres of water are needed to produce a single cup of coffee, while every kilogram of meat requires up to 16,000 litres of water. This means that as consumers, we are all indirectly responsible for water consumption in other parts of the world.

In many areas, groundwater forms the basis for sustainable development. However, there is often a temptation to overestimate its availability and to permanently overexploit groundwater supplies. For this reason, the general public must be aware of the regenerative capacity of groundwater reserves. A knowledge of the risks from contamination and overuse is also vital if we are to give sustainable development a chance.

Improving the water supply and installing basic sanitation facilities are pivotal to eradicating poverty. For this reason, heads of state and government have agreed to halve the number of people without access to clean drinking water and basic sanitation by the year 2015. This target cannot be achieved without global cooperation. The efforts are supported by the United Nations “Water for Life” International Decade for Action from 2005

to 2015, aimed primarily at supporting efforts for effective protection and optimum use of the water resources through integrated water resource management (IWRM).

In the years 2004 and 2005 the *United Nations Commission for Sustainable Development (CSD)* highlighted this issue as a top priority. Under Germany's Vice-Presidency, a number of key points were agreed. For the first time, we now have specific action priorities, not only on water, but also on basic sanitation. The agreement stresses the need to empower local players, and stipulates the formulation of national implementation plans. The parties also stressed the importance of revolving funds and microcredits. At the initiative of the EU, the CSD will revisit these issues in the years 2008 and 2012.

Among other things, the German Environment Ministry is determined that any international water strategy should not become too fixated on counting water connections and toilets. Supporting the development of economic, ecological and institutional framework conditions is just as important as the technical equipment itself. Encouraging the responsible involvement of the general population is vital for ensuring long-term protection. Such processes are, of course, more time-consuming, for example, than laying pipes, but they are equally essential for sustainable development.

In this connection, Germany is also committed to the EU water initiative *Water for Life, Health, Livelihoods, Economic Development, Peace and Security*, presented at the 2002 World Summit for Sustainable Development in Johannesburg. The aim is to ensure the strategic alignment and coordination of activities by the Commission and Member States in the water sector.

The sustainable management of transboundary waterbody systems is one of the main aims of the German Environment Ministry in the water sector. In particular, it is keen to share its experiences of working in international river basin commissions and the Petersberg Process. The Petersberg Process originates from an initiative by the German Government in the spring of 1998 and is dedicated to transboundary cooperation in water resources management. The central message is that cooperation in the water sector can act as a catalyst for international cooperation and peace (Petersberg Declaration). It is widely expected that Germany will continue to monitor this issue and help to drive it forward.

Within the context of the Petersberg Process, in collaboration with the World Bank, the *Global Environment Facility (GEF)* and the *Global Water Partnership (GWP)*, an event on transboundary water management in South-East Europe was staged in December 2005. As well as safeguarding water quality and preserving natural habitats, an efficient management system must also be mindful of the differing, and sometimes competing, forms of use. For example, these include water supply, hydropower, shipping and flood protection. Political dialogue and technical exchange, as well as coordination with other donors and institutions active in the region, is still on-going, with a view to combining activities and further expanding networks across different countries and river basins. Conferences on various topics are to be held in this region in 2006 and 2007.

This topic will also be addressed in the G8 process, which recognises that water distribution issues are crucial to peace processes and international cooperation.

N. Control of transboundary air pollution

Clean air is vital to survival – yet our air is often heavily polluted. Admittedly, approximately half of this originates from natural sources such as volcanoes or decomposition processes such as decay and putrefaction. However, man is responsible for the remaining 50 % – and nature is finding it increasingly difficult to cope with this additional pollution.

90 % of the pollutants generated by man are emitted into the air in the northern hemisphere. The palette ranges from soot and dust, to carbon dioxide, nitrogen oxide, sulphur dioxide, ammonia and methane, through to noxious heavy metals and carcinogenic hydrocarbons. The consumption of energy by traffic, households and industry is the principal cause. Other industrial processes and agriculture often cause heavy contamination of the air as well.

The pollutants are often transported thousands of kilometres and sometimes do not pose a threat to health or the environment until they are miles away from their point of origin. At the same time, these substances have complex effects on the world climate. They often enter the food chain via watercourses and soil.

The consequences are varied, and several different air pollutants may interact, with fatal effects. We first became aware of the extensive forest damage caused by the acidification and over-fertilisation of soils and waterbodies in the early Eighties. Valuable architectural monuments are also damaged by acid rain, with exhaust fumes from cars and power stations being the main culprits.

Another problem arises in summer due to the combination of NO_x and volatile organic compounds (VOC): In conjunction with intensive summer sunlight, ground-level ozone is created. This so-called “summer smog” acts as an irritant on the mucous membranes and airways of many people. Plants also suffer.

By contrast, “winter smog” occurs in unfavourable stagnant weather conditions due to the combination of high concentrations of sulphur dioxide, carbon monoxide and dust. In Germany we have managed to largely eliminate this problem thanks to a consistent air pollution control policy, but winter smog still persists in some other EU states.

It is obvious that internationally agreed strategies are generally essential for air pollution control. Back in 1979, the *Geneva Convention on Long-Range Transboundary Air Pollution* was adopted, based on a framework by the *United Nations Economic Commission for Europe (UN-ECE)*. The agreement was confined to measures in Europe and North America, but even then, Eastern European countries were included, contributing to the development of trusting environmental cooperation between Eastern and Western Europe.

Since the Eighties, individual protocols have been adopted setting out reduction obligations for sulphur, NO_x, VOC, heavy metals and persistent organic pollutants (POPs). This was followed in 1999 by the multi-component protocol, aimed at reducing acidification, over-fertilisation and ground-level ozone.

In the EU, air pollution control policy is likewise subject to gradual standardisation:

- Since 1996, the operators of large industrial plant have been required to observe the best available technology
- The adoption of the *Directive on Ambient Air Quality Assessment and Management* in 1996 was subsequently followed by a number of specific regulations, such as limits for a dozen pollutants.
- In October 2001, the EU adopted national maximum emission levels for certain air pollutants from 2010 onwards.
- In the spring of 2001, the EU Commission also initiated a *Clean Air for Europe (CAFE)* programme. The air pollution control strategy of September 2005 was adopted on the basis of this programme, setting out a long-term, comprehensive concept for air pollution control in Europe.

Germany began to tackle air pollution very early on. All the targets of the Geneva Convention on Transboundary Air Pollution were met, and in most cases significantly exceeded. Thanks to a series of provisions and incentive systems for the operators of industrial plant and car owners, between 1990 and 2004 dust emissions were cut by 91 %, for example, while SO_2 was down 89 % and NO_x down 46 %.

Among other things, Germany supports Poland and the Czech Republic in tackling transboundary air pollution, which in turn helps to ensure better air quality in its own country. In international agreements, Germany will continue to call for ambitious standards, and for greater harmonisation of the environmental provisions at a high level within the EU. Reducing emissions of acidifying and eutrophying substances and fine dust throughout Europe is high on the list of priorities. Additionally, ozone-forming substances must be reduced to below critical load levels. In particular, EU-wide measures are needed, such as more stringent car exhaust standards or improvements in the use of paints and varnishes. Industrial plant must comply with the best available technology, while farmers must observe "good agricultural practice".

0. Industrial safety and hazard prevention

Industrial plant is essential to modern society, but at the same time, it also represents a major risk potential. Extreme examples include the Seveso disaster in Italy in 1976, the fire at the chemical storage plant at Sandoz AG near Basel in 1986, the series of incidents at Höchst in Frankfurt in 1993, the explosions in the Dutch town of Enschede in 2000 and in the French town of Toulouse in 2001, the explosion of the tank store in the English town of Buncefield and the drinking water contamination in the northern Chinese city of Harbin, which both occurred in 2005.

The purpose of plant safety is to prevent hazardous incidents wherever possible, and where they do occur, to minimise the consequences for humans and the environment.

At European level, the *Seveso II Directive* replaced the first agreement of 1982 and now regulates accident prevention. The amendment not only addresses the technical aspects, but also considers the symbiotic relationship between humans/organisations and technical systems. High priority is now being given to environmental protection. For the first time, the application section of the Directive includes a list of ecologically hazardous substances, particularly those which pollute water. It also formulates new requirements for safety management systems, so that there are now clear regulations on identifying hazards and assessing their probability. Finally, there are also regulations governing contingency plans and notification of the general public, as well as more stringent provisions for inspections.

The foundations for cooperation between countries outside of the EU were laid in 1992 with the *UN ECE Convention on the Transboundary Effects of Industrial* Accidents, in which the Parties undertake to take precautions to prevent industrial accidents and delimit their consequences. Apart from monitoring hazardous activities, it also regulates the formulation and coordination of standby and control measures in alarm and accident prevention plans for the prompt notification of other countries. The Convention entered into force in April 2000, and has now been signed by 55 countries, including all European countries as well as Asian countries from the Caucasus to Central Asia, together with Canada and the USA.

One current priority is to persuade the signatories in Eastern and South-East Europe, the Caucasus and Central Asia to actually enforce certain of the Convention's conditions. Additionally, those who have not yet acceded to the Convention should be persuaded to do so as a matter of urgency to promote trusting environmental collaboration. In exchange, representatives of western countries, international organisations and associations are channelling their efforts into mobilising sufficent funds for the support programme.

Even outside of the *UN ECE*, there is growing international cooperation in the field of plant safety. Many developing countries do not yet have a suitable infrastructure. They also lack the experience to handle hazardous industrial plant safely. To this end, they need both financial and technical assistance. For example, China has voiced a specific desire for cooperation. As one of the leading industrialised countries, Germany has a particular responsibility in this respect.

P. Protection against hazardous substances

The objects found in the average household contain thousands of chemicals, and countless different substances are used in their production. Unfortunately, in addition to the required properties, they also have many undesirable side-effects. In some cases, the adverse effects may even significantly outweigh the benefits. Asbestos, which has now been banned, is not only a fire-resistant building material, but also a carcinogenic substance. Pentachlorophenol, which was used in the past to protect wood and textiles from fungal infection, has been found to be a major source of the highly toxic substance dioxin.

Today, there are five areas which pose particularly serious problems:

- Persistent organic pollutants (POPs) and inorganic substances such as mercury pose a threat to man and the environment. They accumulate in the food chain and are distributed around the globe.

- Substances which upset the hormone balance adversely affect the reproductive capabilities and health of humans and animals. Air pollutants such as diesel soot, benzene, cadmium, arsenic and nickel can cause cancer in humans.

- Pollutants from traffic and power stations, as well as vapours from solvents, lead to increased concentrations of ground-level ozone during the summer. Summer smog irritates the mucous membranes, can impair lung function, and can damage ecosystems.

- In some cases, hazardous chemicals which are banned in their country of origin are exported to developing countries. The insecticide DDT is one such example.

- Nanotechnology is being touted as the key technology of the 21st century, yet no-one really knows about the associated environmental and health risks. The structures involved are unimaginably microscopic: One nanometre is one billionth of a metre. This technology is expected to have wide-ranging effects in information and communication technology, energy, production and environmental technology, chemistry, medicine, and the pharmaceutical

and cosmetic industries. However, there have been no reliable scientific studies into the consequences of the uncontrolled release of such particles.

UNEP and *FAO* introduced a voluntary information system in 1989 in order to improve the protection of humans and the environment in the recipient countries of hazardous chemicals. This aims to ensure that the authorities receive prior notification of the import of such substances. They should also be told why the substances are banned or restricted in the exporting country. In 1998, the *PIC Convention* was adopted in Rotterdam, which regulates this procedure at international level. Germany was one of the first countries to ratify the Convention in January 2001. On 24 February 2004, the Convention achieved the requisite number of 50 Parties. 104 countries have now acceded to the Convention.

Many developing countries do not yet have a suitable infrastructure for the safe handling of hazardous chemicals, and require both financial and technical assistance. The Federal Republic of Germany, as one of the largest exporters of chemicals in the world, has made € 350 million available for this purpose over the past 15 years.

Germany also played a key role in the *POPs Convention* of the year 2000. This international treaty seeks to remove particularly hazardous substances from the market and replace them with less hazardous alternatives. The Convention will focus initially on twelve substances identified by *UNEP* as being particularly urgent (the so-called "dirty dozen").

In February 2006, a conference in Dubai adopted a comprehensive approach to global chemicals management (SAICM). Although these measures are voluntary, they undoubtedly represent a major step closer to the Johannesburg target formulated in 2002 of minimising the risks of chemicals to humans and the environment by 2020.

At EU level, the *Reach Regulation*, due to enter into force in 2007, will lead to a radical shake-up of chemicals policy. The abbreviation stands for *Registration, Evaluation and Authorisation of Chemicals*. Essentially, the Regulation seeks to collate information on chemicals which entered the market prior to 1981 and whose risk potential is largely unknown, and publish this data on the Internet. REACH covers all substances with an annual production in excess of one tonne.

With regard to protection from hazardous substances, Germany feels that the following measures are urgently needed:

- Implementation of a uniform EU licensing procedure for new pesticides. Existing biocides must be subjected to review.
- An international ban on the highly toxic substance tributyl tin, which is used to protect ships' hulls from algae and crustaceans.
- International programmes to review the effects of hormone-like substances
- Assessment of the environmental risks of pharmaceutical products
- EU Directive on improved protection from carcinogenic substances such as benzene, polycyclic aromatic hydrocarbons (PAH), cadmium, arsenic, nickel and fine particles
- International and EU-wide regulations to reduce emissions of ozone precursor substances by 70 to 80 % versus 1988 levels by 2010 at the latest.
- An EU regulation aimed at reducing VOC emissions by 60 % compared with 1988. VOC originates from organic solvents.

- Hazardous chemicals must be subject to a uniform international labelling system by the year 2008.

- A legally binding international regulation on mercury

- Investigation into the health and environmental risks of nano-technology

Q. International nuclear safety

The German Government is phasing out the use of nuclear energy in Germany. It feels that it would be irresponsible to support this form of energy generation in view of the associated risks. The last remaining nuclear power stations in Germany are due to be decommissioned by approximately 2020.

However, there are currently some 443 nuclear power stations operating in 30 countries. Some other countries are likewise planning to phase out nuclear power, while others have opted to expand it. Irrespective of these differences, the international community employs a wide range of instruments to control the risks as best it can and prevent damage to humans and the environment. These instruments also include risk aversion and risk prevention in the handling and disposal of radioactive waste and nuclear material, as well as protective measures to combat terrorism and the illegal trade in fissionable material.

In recent years, the German Government has played a key role in helping to create various multilateral conventions on international cooperation for nuclear safety and radiation protection. These international statutory instruments regulate, *inter alia*, liability issues, the non-proliferation of nuclear weapons, the prompt notification and mutual assistance in case of nuclear incidents, and the requirements governing nuclear safety and the safe handling of radioactive wastes and spent fuel elements. International organisations such as the IAEO function as a depository for these conventions – in other words, they receive the ratification instruments, keep them safe, and report to the Parties on conference nominations.

A series of conventions prompted by the Chernobyl reactor disaster have been negotiated and signed, including in particular:

- The Nuclear Safety Convention of 17 June 1994

- The Nuclear Waste Disposal Convention of 5 September 1997

These two conventions have created the foundations for an international nuclear safety and protection partnership. In these Conventions, the Parties have undertaken to create certain statutory, official, procedural and material pre-requisites in order to ensure safety and risk prevention in accordance with recognised international requirements. The Parties have undertaken to report on the fulfilment of these obligations at regular review conferences.

Other elements of an international safety partnership include international safety standards such as those developed by Member States at the IAEO, warning systems for particular incidents necessitating joint protective and counteractive action, and joint study programmes to clarify and resolve safety issues.

There are currently some 160 nuclear power stations in operation in the enlarged European Union including Switzerland. Some of the nuclear power stations operated in the Eastern European accession countries were decommissioned prior to accession, or will be decommissioned on an agreed date following accession. For those which remain in operation, safety systems should be harmonised and continuously improved in order to achieve identical high standards of protection. Similar efforts are also being undertaken in other areas such as decommissioning and disposal. During its Presidency of the EU Council in 2007, Germany will endeavour to achieve further progress towards safeguarding nuclear safety and protection in Europe.

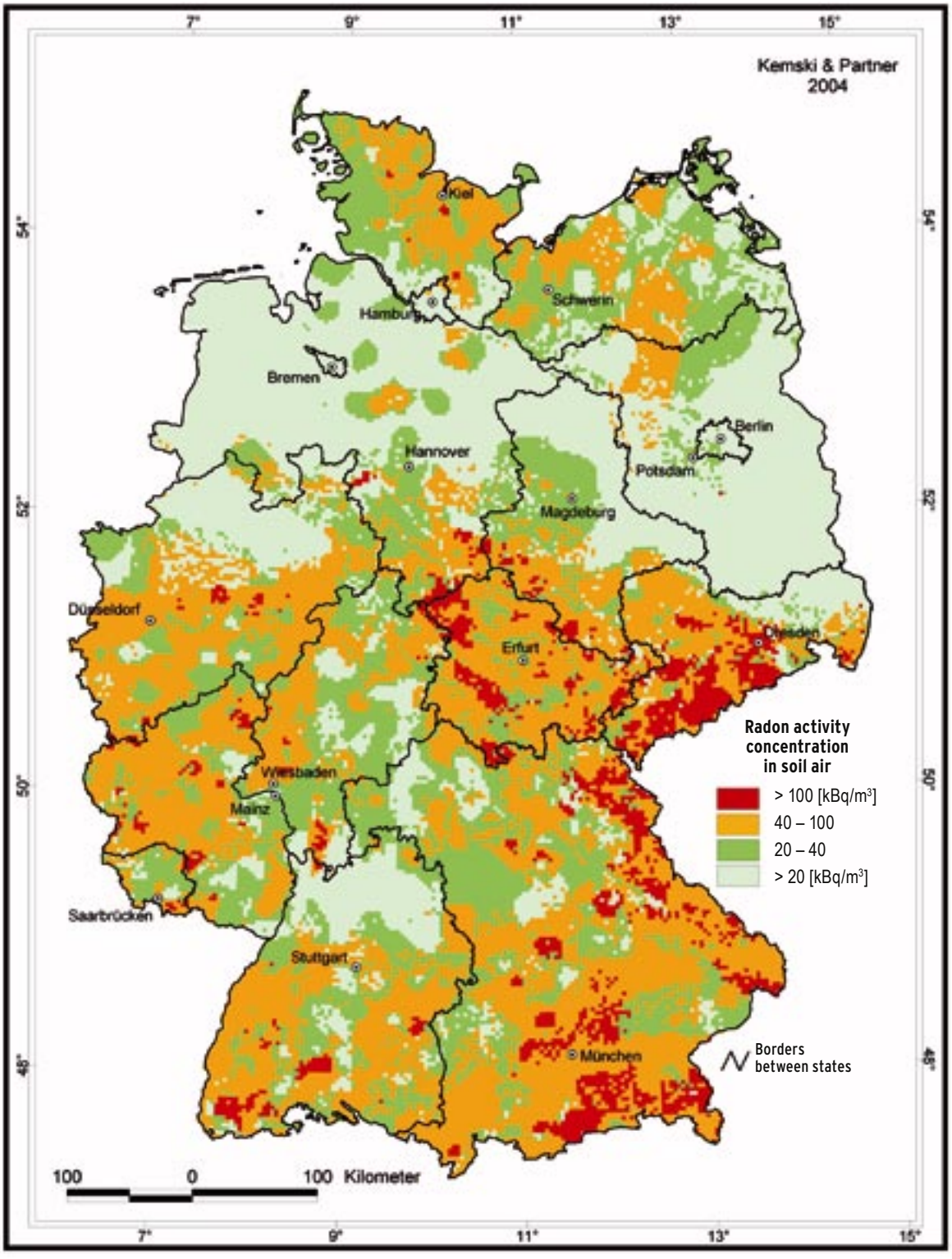
Even 20 years on, the safety and disposal tasks at the Chernobyl site have yet to be resolved. In 1997, the G7 states, the European Commission and the Ukraine agreed a support programme for decommissioning the Chernobyl power plant. On 15 December 2000, the last reactor at this North Ukrainian site was shut down. The Ukraine receives extensive technical and financial aid to help it build spare capacity, resolve disposal problems and overcome social problems associated with the closure of the plant.

For the new sarcophagus around the nuclear reactor in Chernobyl alone, the G7 states, the EU and 22 other countries have promised the Ukraine more than one billion US $ in financial aid. The work has run into countless technical, organisational and financial difficulties. As a G8 state, Russia has now joined the project. During Germany's Presidency of the G8 in 2007, a number of fundamental decisions will need to be taken.

Taking precautions against the risks associated with nuclear power is a global task which needs to be resolved independently of other energy policy decisions. Accidents in nuclear plants, terrorist attacks and the risk of the reproliferation of nuclear weapons or misuse of radioactive material or fission material are warning signals which demand an efficient safety and protection partnership in order to keep the world safe from such threats. In 2007, the Federal Republic of Germany will be hoping to achieve visible progress in favour of effective protection.

R. Protection from radiation

Protecting individuals from ionising radiation – whether it originates from artificial or natural sources – is a central task of preventive health-care. It entails special provisions for people who are exposed to radiation at work, as well as the protection of nuclear plant. Above and beyond this, there are two main problems: Reducing the use of radiation in medicine, and achieving protection from the radioactive inert gas radon. There is a long-standing debate over whether or not non-ionising radiation from electromagnetic fields poses health risks.



Source: Federal Government report "Environmental radioactivity and radiation pollution in 2005"

Generally speaking, radiation protection is governed by three basic principles:

1. **the principle of justification:** Any use of radiation must have a benefit.

2. **the principle of optimisation:** All radiation should be kept to the minimum reasonably attainable level.

3. the principle of dose limitation: The limits must be observed at all doses.

The main provisions originate from the *International Commission on Radiological Protection (ICRP)*. The Directives of the European Union and of the *German Commission on Radiological Protection (SSK)* are based on its recommendations. In Germany, the average person is exposed to approximately four millisieverts of radiation per annum (mSv/a). The main sources of artificial radiation include X-rays and nuclear medicine, while the main source of natural radiation exposure in Germany is radon. After smoking, it is the second-highest risk factor for lung cancer.

Radon originates from the natural uranium content in the earth's crust. Under unfavourable conditions, it may accumulate in residential areas. Nationwide measuring programmes have revealed that the average radon concentration indoors is 50 becquerels per cubic metre (Bq/m^3).

The German Government has commissioned a number of research projects on the topic of radon, which have enabled it to identify regions with increased radon concentrations where the cellars of old buildings need to be sealed and vented if certain threshold limits are exceeded. For new buildings, suitable structural measures should be taken from the outset to prevent increased levels.

In 1990 the EU Commission recommended that the radon levels in old buildings should not exceed a maximum of 400 Bq/m^3 and proposed a maximum level of 200 Bq/m^3 for new buildings. Incidentally, the SSK feels that these levels are too high, because the risk of lung cancer increases significantly within the range from 100 to 200 Bq/m^3, even for non-smokers.

In 2001, radiation protection provisions in the medical sector were likewise stepped up. For the first time, regulations were adopted governing the protection of employees and the general public from natural radioactivity, e.g. via cosmic radiation in aircraft.

In order to prevent highly radioactive material from being stolen or otherwise lost, the control system was extended in September 2005.

In recent years, the debate surrounding the possible risk from electromagnetic fields has caused a major stir. Many citizens are worried about the radiation emitted by mobile phone masts as well as by mobile phones themselves. The German Government takes these concerns seriously and appointed the *Commission for Radiation Protection (SSK)* to conduct a comprehensive assessment of the current status of scientific knowledge. In September 2001, its report was published. It concluded that according to current scientific findings, the valid limits provide adequate protection from proven health risks. The German Government has decided to step up research in this field. Under the auspices of Federal Office for Radiation Protection, a number of research projects in the areas of biology, epidemiology, dosimetry and risk communication have been carried out since 2002. The German Environment Ministry has set aside € 8.5 million for this programme. The mobile communications operators have voluntarily offered to match this amount. All the results are expected to be available by the end of 2007.

Additionally, the mobile phone operators themselves have promised to collaborate closely with local governments in the planning and construction of radio masts. Not only are they keen to encourage the shared use of masts, but also to test alternatives to sites in the vicinity of nurseries and schools. The mobile phone operators have also promised to keep consumers better-informed about the radiation levels of mobile phones.

S. Soil conservation and combating desertification

Soil is a direct source of life for people, animals and plants. It is also responsible for a large portion of all material decomposition and conversion processes in the ecological balance. It serves as a filter and reservoir for water, a storage deposit for minerals and energy sources, the basis for agriculture and forestry, and last but not least, as an archive of natural and cultural history. However, in many places today, the vital functions of soil are under threat:

- Worldwide, one-third of soil has restricted suitability for agricultural use. One-fifth of grassland and one-fifth of forest floors have been severely devalued or even destroyed.

- The constant discharge of acid-forming substances and nutrients via the air is particularly detrimental to low-nutrient ecosystems such as waterbodies and forests.

- The construction of human settlements and roads causes large-scale soil sealing. Rainwater is no longer able to seep away, and as a result, the quantity of groundwater is reduced and the outflow of rainwater is accelerated. The consequences are groundwater shortages and frequent flooding.

- Soil can be contaminated by industrial plant, military training grounds and the improper storage of waste. This poses a threat to the health of local residents and to the quality of groundwater.

- In large sections of the world, particularly in Africa, deserts are continuing to expand. Soils suffer a loss of fertility and entire ecosystems lose the ability to regenerate naturally, with adverse consequences for the climate and food production.

- In countless developing countries, the loss of usable agricultural land is threatening the livelihoods and food supplies of large sections of the population. Over the next few years, some 135 million people will be forced to leave their traditional homelands as a result of this. This enforced migration poses a serious threat to peace in some regions.

Soils are very fragile systems, susceptible to all forms of human pollution. Generally speaking, change only occurs very slowly and is generally difficult to detect. However, once the damage has occurred, it can often only be repaired over geological timescales, if at all. The aim should therefore be to use soils in such a way that permanent damage is excluded. We must refrain from overtaxing the soil's capabilities if we are to preserve it as the ecological and economic basis for future generations.

As early as 1981, the *Food and Agriculture Organisation of the United Nations (FAO)* adopted a World Soil Charter, whose principles are still valid today. The paramount objective is to utilise soil in such a way that its capabilities are retained for future generations. Other international agreements have also been adopted regarding the protection of the ocean floor and the Antarctic floor.

The slopes of many mountain regions are also at risk of erosion. With this in mind, the 5th Alpine Conference adopted a Soil Conservation Protocol in October 1998, which entered into force at the end of 2002.

In 1996, the *Convention to Combat Desertification (CCD)* entered into force. Its Secretariat is based in Bonn. The Convention represents an internationally binding framework for cooperation between industrialised countries and in particular the countries in the arid zones of Africa affected by desertification. The aim is to put a halt to soil loss caused by economic and social development. Germany supports the partner countries in numerous projects.

In the year 2000, soil conservation was included as a priority in the work programme of the *UN Commission on Sustainable Development (CSD)*. In order to be able to lend more intensive support to anti-desertification measures, the *Global Environment Facility (GEF)* created a subsidy area for "land degradation" in 2002. The General Assembly of the United Nations designated the year 2006 "International Year of Deserts and Desertification", with events being staged throughout all 191 Member States. It wants to raise awareness of the causes and serious consequences of soil loss, as well as the opportunities for effectively combating desertification.

T. Protection of the mountains

Mountains are key elements in the global ecosystem. In particular, high mountain ranges such as the Sierra Nevada in the USA, the Andes in South America, the Himalayas in Asia and the Alps in Europe have a major influence on climate and weather in many parts of the world. They form a

barrier to the air masses which regularly circle the globe, and are often able to deflect the "jet stream". Mountains are also freshwater reservoirs and the source of many springs; they supply minerals and energy, and provide habitats for specific types of flora and fauna.

There is a particular threat to mountain regions as a result of escalating traffic volumes, tourism and increasing colonisation, as well as the intensification of agriculture and forestry. Additionally, climate change is particularly noticeable on higher ground.

The Alps are one of the most important mountain ecosystems in Europe. This 1,200 kilometre long mountain range, with widths of up to 250 kilometres in places, forms the borders of various European climate zones, and the main watershed between the North Sea, Mediterranean and Black Sea. It is the source of major European rivers such as the Rhine and the Rhone. With a total area of 190,000 km^2 and around 13.6 million inhabitants, the Alps are the highest and most densely populated mountains in Europe.

The mountain agriculture, energy extraction from hydropower and year-round tourism are of major economic significance for the Alpine region. At the same time, however, they also pose a threat to its ecosystems. In recent decades, the Alpine region has lost numerous landscape components, biotopes and species.

Breakdown of countries covered by the Alpine Convention according to area and population

	Area	Population
Alpine region	190,600 km^2	13.6 million
Italy	27.3 %	30.1 %
Austria	28.7 %	23.9 %
France	21.4 %	18.0 %
Switzerland	13.2 %	12.8 %
Germany	5.8 %	10.1 %
Slovenia	3.5 %	4.7 %
Monaco	0.001 %	0.2 %
Liechtenstein	0.08 %	0.2 %

Source: Multi-year work programme of the Alpine Conference 2005-2010; calculation: Ruffini et al. EURAC 2005

In order to safeguard the fragile Alpine world from further destruction and ensure sustainable development of the Alpine region, in 1991 the EC and eight riparian states adopted the *Convention Concerning the Protection of the Alps*. Nine implementation protocols have since been adopted on regional planning and sustainable development, nature conservation and landscape maintenance, mountain agriculture, alpine forests, tourism, soil conservation, energy, transport and settlement of disputes. The protocols entered into force in 2002, having been ratified by Liechtenstein, Germany and Austria, followed by Slovenia and France in 2006. Monaco and the European Community have ratified part of the protocols, while Italy and Switzerland have not yet ratified any.

Other topics on the agenda have yet to be regulated. For the 9th Conference Concerning the Protection of the Alps, policy declarations on "Population and Culture" and "Climate Change in the Alps" are currently being prepared. By contrast, Alpine-specific agreements on air pollution control, water balance and waste management are still outstanding.

Some time ago, work began on developing an observation and information system which will provide the foundations for regular reports on the status of the Alps. The first study of its kind will be published in 2007, and is dedicated to the topic of "transport in the Alps".

With its holistic approach, the *Convention on the Protection of the Alps* serves as a role model for conventions in other transboundary mountain regions. A number of partnership initiatives were agreed at the 2002 World Summit in Johannesburg, including agreements between the Alpine region and the Carpathian Mountains, the Caucasus and Central Asia (Pamir/Tien Shan). Many years of experience from the Alpine process will be incorporated into these agreements.

The German Government is calling for implementation of the *Convention Concerning the Protection of the Alps* and its protocols – with growing success. Priorities include transport, threats to nature as a result of climate change, and ecological tourism. Germany is also actively involved in the creation of an Alpine-wide ecological system of interlinked biotopes as a contribution to the global network of protected areas, as envisaged by the *UN Convention on Biological Diversity (CBD)* by 2010 on land and by 2012 at sea.

U. Environmental protection in the Antarctic

The Antarctic, which covers an area of around 14 million km^2, is the coldest and most hostile continent on earth. The ice masses of the Antarctic, some of which are more than four kilometres thick, contain around three-quarters of the earth's freshwater reserves. The ecosystem of the south polar continent is still largely unexplored. However, its importance for the global ecological equilibrium is undisputed.

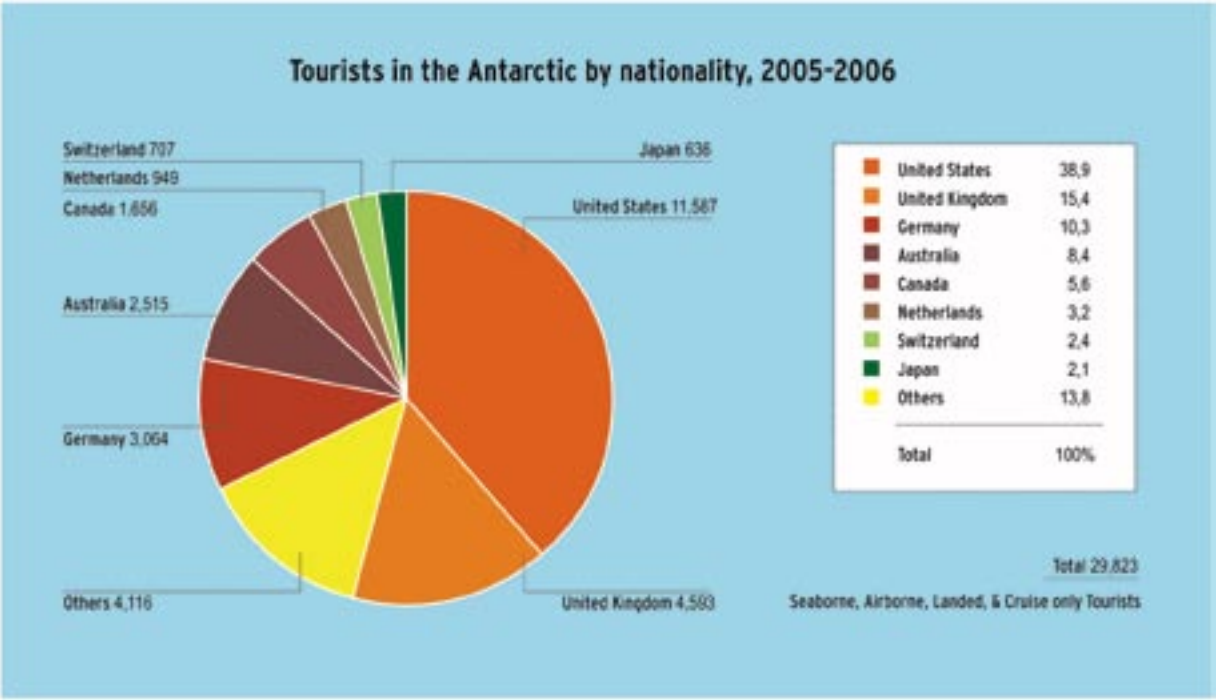
To date, the Antarctic remains uninhabited by man, apart from the research stations built by a number of countries, including Germany since 1981. The unregulated disposal of waste and sewage from these stations, the sharp rise in tourism in recent years, and the infiltration of non-native species into the ecosystem, all put pressure on the Antarctic environment. Signs of climate change ascertained in the Antarctic have exacerbated these problems.

The environment of the Antarctic is extremely sensitive: Due to the comparatively low diversity of species, the communities found here are virtually incapable of adapting to environmental changes. As a result, environmental protection in the Antarctic must be handled far more stringently than in temperate climate zones.

The 1959 *Antarctic Treaty* resulted in the demilitarisation of the "sixth continent". Since then, it has only been used for scientific and tourism purposes – the Treaty ruled out any regional claims by individual countries. In 1991, the Treaty was supplemented by the *Madrid Protocol*, outlining environmental protection provisions for the Antarctic. This agreement, which has been ratified by 27 countries, coordinates international efforts to protect the Antarctic. At its heart is an agreement to refrain from mining any mineral resources in the region for 50 years, and to impose strict limits on tourism. Additionally, all activities in the Antarctic must be notified and approved in advance. This also extends to research projects. The Protocol entered into force in 1998.

Since then, significant progress has been achieved in conserving the Antarctic environment. The Parties are making greater efforts to remove "residual pollution" such as unused research stations. Strict, verifiable requirements apply to waste disposal and sewage treatment.

Since 2004, liability issues have been regulated in principle, although the corresponding agreement has not yet entered into force. The "polluter pays" principle has been agreed. This is particu-



Source: International Organisation of Antarctica Tour Operators (IAATO)

larly important in the case of the Antarctic, as it is not part of the sovereign territory of any one country.

The stringent requirements governing activities in the Antarctic have not always been enthusiastically received. Additionally, it is becoming more difficult to control, due to rising numbers of tourists and an improved infrastructure for flights. However, the German Government believes that the agreed regulations are urgently needed in order to preserve the status of the Antarctic as a nature reserve. It is urging for improved nature conservation measures in those areas heavily frequented by tourists, and believes that the construction of permanent tourism infrastructure facilities contravenes the provisions of the Antarctic Treaty.

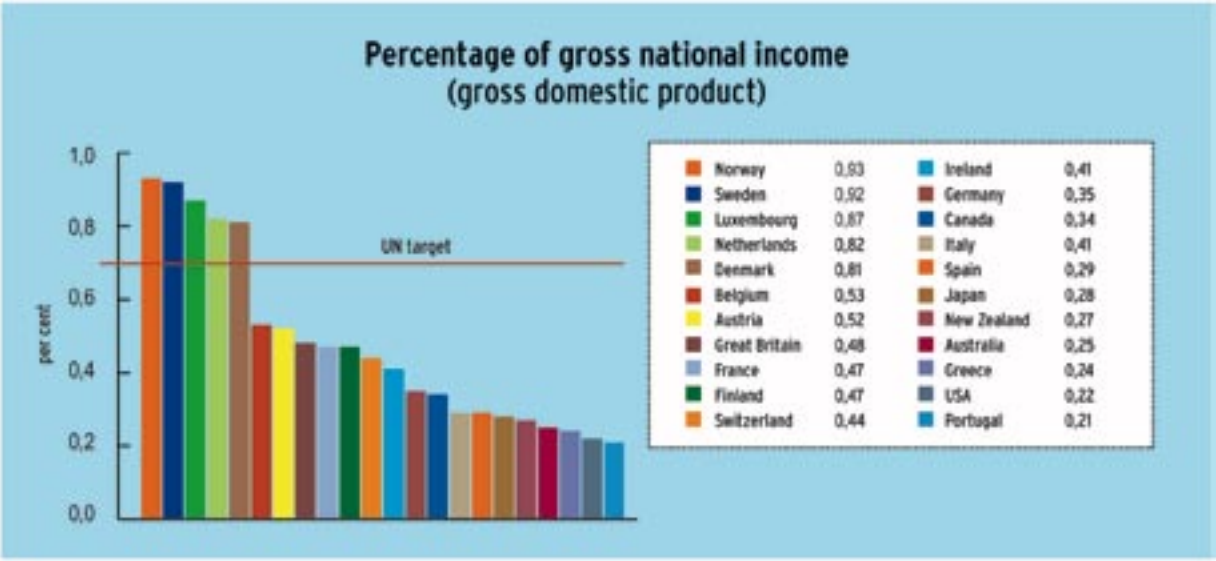
Additionally, Germany is calling for a review of requirements vis-à-vis the construction of new research stations. It makes sense for scientists from several countries to share facilities. However, enforcing this objective proves difficult, because for many countries, having their own research station is a matter of national prestige. Additionally, increasing numbers of countries are keen to acquire consultative status, for which they must conduct their own research in the Antarctic. At least it has already been agreed that it is no longer necessary for a country to construct its own research station in order to achieve consultative status.

One key task is to standardise the licensing requirements for activities in the Antarctic. Only in this way can effective protection of the Antarctic be guaranteed. However, the consent of all Parties is needed in order to achieve this.

V. Financial support for international environmental protection

Environmental protection is an international task. We cannot afford to sit back and do nothing. If we fail to take action now, we will be unable to make it up later.

Paradoxically, the consequences of climate change and overuse of resources often affects the least responsible countries, the majority of whom do not have sufficient funding to effectively protect their people and natural resources. By contrast, the main perpetrators of global environmental problems tend to be industrialised countries. As such, they carry a particular responsibility for financing international environmental policy.



Source: OECD / DAC, 2005

Expenditure on environmental and development policy should not be equated with donating alms to the poor; rather, it is a matter of protecting the industrialised countries' own interests: The future opportunities of humanity itself are at stake here. For example, in the longer term, the loss of tropical rainforest will not only affect the local population. Conversely, measures to conserve valuable soil and water resources will help to stem the flow of poverty and environmental destruction. Environmental conservation also helps to safeguard peace and stability.

Within the context of a graduated EU plan, Germany has promised to step up its funding for public development cooperation. By 2006, it has promised to earmark 0.33 % of gross domestic product for this purpose, and by 2010 at least 0.51 %. The 0.7 % target agreed by the United Nations is expected to be met by 2015 at the latest. Now it is a matter of spending a suitable portion of this budget on environmental protection measures. It is clear that attempting to tackle poverty without protecting the natural resources would be like pouring money into a bottomless pit.

However, merely increasing the budget for development and the environment is not in itself sufficient. Other funding sources need to be exploited and expanded parallel to this. For example, this includes the *Clean Development Mechanism (CDM)* under the Kyoto Protocol, which creates incentives for climate-friendly investments in developing countries. Other innovative funding mechanisms to promote sustainable development must also be introduced at a global level. The procurement of funds should always follow the "polluter pays" principle: Whoever uses a global commodity must pay for it. By extension, this means, for example, that all flights should be subject to a special levy on their pollution of the world climate and consequential damages. In order to ameliorate these consequences, or to save a suitable quantity of greenhouse gases elsewhere, it is only fair to ask aircraft operators and their passengers to pay up.

Greater consideration must also be given to environmental concerns in funding decisions at EU level. In the summer of 2006, the Community adopted its long-term budget for the years 2007 – 2013. A total of € 864.4 billion has been set aside for this seven-year period. By far the largest item in the budget is the expenditure on agricultural policy and structural funds. Admittedly, this also includes funds specifically earmarked for environmental protection, but it is vital to consider the environmental implications of all expenditure in these areas.

The EU also provides funding to support the transfer of environmental technologies and knowledge into regions outside of the Community. To this end, it has created the *European Neighbourhood and Partnership Instrument*, and cooperates with developing countries. The *Competitiveness and Innovation Framework Programme (CIP)* likewise supports eco-innovations.

The EU funding programme *LIFE+*, planned for January 2007, aims to combine a range of instruments which were previously considered separate and independent – such as forest subsidies, sustainable urban development, and support for associations. It is envisaged that 80 % of the funding for *LIFE+* will be administered by the Member

States, and 20 % by the European Commission. Germany is expected to receive around € 22 million per annum, the highest level of all Member States. The money is to be spent primarily on projects which focus on practical environmental and nature conservation.

W. Environmental protection at federal and regional level

The Federal Republic of Germany is a federal country comprised of 16 states (*Länder*), each of which has its own administrative structure. There are 12,431 local authorities (*Gemeinde*), 116 towns administered as districts in their own rights (*kreisfreie Stadt*), and 323 counties (*Landkreis*), as well as 26 administrative districts (*Regierungsbezirk*) (in six *Länder*). Government duties relating to environmental protection are shared between the Federal Government, the *Länder* and the local authorities.

Legislative competency for environmental matters is shared between the Federal Government and the *Länder*. It is often difficult to ascertain who is responsible for what in the environmental sector. German legislation has evolved over the course of history, making it complex and non-transparent. The so-called Federalism Reform adopted in the summer of 2006 aims to radically transform this system by redefining the competencies of the Federal Government and *Länder*, particularly in relation to legislation.

For the first time, the Federal Government will have full regulatory powers in the areas of nature conservation and water legislation, rather than being confined to framework acts. The relevant amendments are currently under preparation by the Federal Government. They are initially designed as independent "codes", which can later be integrated into the planned *Environment Code (UGB)*. There are also plans to transfer waste management legislation into the new *Environment Code (UGB)*.

Many parties have long been calling for an environment code, which aims to simplify Germany's highly fragmented environmental legislation without lowering its ambitious standards. By combining everything under one piece of legislation, in future each project will only require one comprehensive approval. The *UGB* will reduce bureaucracy and make things easier, especially for small and medium-sized enterprises. Work on the *UGB* will be accompanied by a Federal/*Länder* Working Group set up by the Environment Ministers.

Many *Länder* have already begun implementing the Rio resolutions, for example by developing a regional sustainability strategy. The municipalities and local authorities play a particularly important role in promoting sustainable development. Within the context of their self-administration and planning jurisdiction, they have a high level of responsibility. As the parties responsible for the planning of land use, public local transport and drinking water and energy supply and waste and sewage disposal facilities, Germany's local authorities have extensive opportunities for action in the field of environmental protection. What is more, since the adoption of Agenda 21 at the 1992 World Summit on Environment and Development in Rio de Janeiro, the municipalities and local authorities have worked intensively towards sustainable development, serving as international role models. In accordance with the mandate of Agenda 21, after 1992, numerous local authorities initiated dialogue processes with the general public, local organisations and private industry aimed at the formulation and implementation of a "Local Authority Agenda 21". The top priorities are energy, climate protection, conserving biological diversity, transport, noise control and construction.

X. Public participation and environmental education

The Government cannot do all this on its own. If we are serious about the goal of sustainable development, we need to modify our lifestyles and production methods. They must be in harmony with the natural resources, while at the same time giving poorer countries scope to develop. This cannot be decreed from above. Instead, each and every one of us must become actively involved. What we need is a broad social consensus about our objectives and an insight into the measures which will help us to achieve this.

In June 1998, the Member States of the *UN Economic Commission for Europe (UNECE)* and the European Union took an important step in this direction, when they attended the fourth Pan-European Conference of Environmental Ministers in the Danish city of Arhus. The government representatives adopted a Convention which not only regulates access to environmental information, but which also outlines provisions on how to involve the general public in the decision-making process. It also improves recourse to the courts on environmental matters. The international agreement entered into force in October 2001.

The EU and its Member States have already adopted a whole series of measures aimed at implementing the progressive provisions of the Arhus Convention: For example, two Directives were adopted in 2003 which were designed to improve access to environmental information and broaden the rights of environmental organisations and the general public to participate in and bring action against licensing procedures.

At national level, the German Environmental Information Act was updated in 2004. In addition, various acts at regional level guarantee the right to information on environmental matters. The enquiree is no longer required to prove a specific legal interest. What is more, as well as government offices, private individuals who perform public duties with environmental relevance under government control or provide environment-related services are now also obliged to disclose information.

The existing opportunities for public participation in the licensing of industrial plant and infrastructure measures as set out in the EU Directives on Environmental Impact Assessment (EIA) and Pollution Prevention and Control (IPPC) are being extended, and in particular, environmental associations are to be given wider legal protection.

The German Government wishes to further strengthen citizens' rights in the environmental sector. A number of new projects are already in the process of becoming legislation. A Public Participation Act and an Environmental Legal Redress Act will soon be available which will further improve the participatory rights of associations and the general public. As such, we will soon have the requirements in place to enable Germany to ratify the Arhus Convention at international level.

Education is likewise crucial for involving the general public in sustainability. Since environmental policy became established as an independent policy-making area, there have been numerous initiatives, recommendations and statements in this area. They are based at a regional, national and international level, and have evolved considerably in recent years. These days, the main emphasis is on education for sustainable development.

Education for sustainable development not only plays a role in school and vocational training; there are also many other types of learning establishments which mediate the need for sustainable development. In order for society to adopt eco-friendly modes of conduct, it needs to be convinced at both an intellectual and an emotional level. It is also a question of training the right skills to get people actively involved in the eco-friendly design of their social environment.

Towards the end of 2002, the General Assembly of the United Nations decided to designate the years 2005 to 2014 the *Decade of Education for Sustainable Development (ESD)*. It is hoped that this will anchor the principles of sustainable development in the educational systems, and contribute to the implementation of Agenda 21. *UNESCO* coordinates the actions at international level. In July 2004, the German *Bundestag* (Lower House of Parliament) unanimously agreed to adopt a national action plan. Numerous initiatives have already been launched, ranging from research projects, to the structuring of the curriculum in schools, to measures designed to appeal to all social groups.

Y. Civil society

Environmental policy cannot develop fully without the support of the general public. Informing the general public and involving all community groups is therefore a top priority. *Non-government organisations (NGOs)* play a decisive role in this respect: They notify and sensitise the general public, draw up new policy areas, and organise campaigns. As environmental organisations also command a high level of trust among the general public, they are a credible and effective vehicle for the mediation of important topics.

A similar approach is reflected in *Agenda 21*, adopted at the Rio Summit in 1992. It stresses the need to involve community groups in decision-making processes, and calls on the parties to find new ways of achieving this. Since then, we have seen a growing presence of *non-government organisations* at international conferences. They are also often involved in the preparation of national reports for international conferences. The EU Commission and the EU Presidency also maintain very close contacts with NGOs on all environmental negotiations at international level.

For this reason, Germany has always been very keen for NGOs to play a major role, not just at a domestic level but also in the international arena, both now and in the future. The German Government will also give extensive conceptual and financial support to the work of national and international non-government organisations.

In Germany, NGOs played a key role in the Rio follow-up process. The *Deutscher Naturschutzring (DNR)* is patron of the *Forum Umwelt & Entwicklung* (Forum on Environment and Development) which coordinates the activities of German *NGOs* in the Rio follow-up process. It unites some 60 individual organisations and NGO networks in the areas of environment and development. These formerly separate policy areas are becoming increasingly intertwined. The *Forum Umwelt & Entwicklung* formulates joint positions, strategies and demands for international conferences, and is also involved in international policy-making at national level. The forum plays a key role as a public information service.

III. STRENGTHENING ENVIRONMENTAL PROTECTION IN INTERNATIONAL INSTITUTIONS

Environmental issues are increasingly becoming a global problem, and can even pose a threat to peace and security. In this situation, it is obvious that international cooperation needs to be intensified. Because decisions in other policy areas, and private and public investments in particular, often have huge consequences for the environment, these considerations need to be taken into account in all plans from the outset. We still have some catching up to do, particularly in the areas of international trade, investment and financing activities.
Germany has a vested interest in solving global environmental problems. As such, not only will it continue to set a good example in many areas, but within the framework of international organisations and environmental conventions, the German Government is also pushing hard for rapid progress. In bilateral collaboration with other countries, it plans to forge ahead with sustainable, eco-friendly development.

A. European Union

The European Union is a heavyweight when it comes to transboundary cooperation for environmental protection. The German Government has repeatedly called for ambitious targets and standards within the EU, and will continue to do so. Germany's Presidency of the Council in the first half of 2007 offers a good opportunity in this respect.

Specialist ministers from all 27 Member States convene in the EU Council to decide on the content and structure of directives and regulations. The EU Commission sends its proposals to the Council, and the ministers discuss them and propose amendments. Once the prescribed procedures have been followed, the Council adopts Community law.

The so-called codecision legislative procedure applies to most environmental regulations in the EU, which means that the European Parliament also has a significant influence: MEPs can also demand amendments, and a law cannot enter into force without their consent.

This procedure applies both to regulations, which have direct validity in every Member State once adopted, and to directives, which must be translated into national law by the Member States.

Since the 1992 *Maastricht Treaty*, environmental protection has been viewed as one of the central tasks of the European Union. Key cornerstones of this policy are set out in the common targets and principles.

Objectives of EU environmental policy

- To conserve and protect the environment and improve its quality
- To protect human health
- To ensure the careful and sparing use of natural resources
- To promote measures at international level for resolving regional and global environmental problems

Action principles of EU environmental policy

- A high level of protection
- Prevention and aversion
- Environmental impairments should be tackled primarily at source
- Polluter pays principle
- Cross-sectional clause: Environmental issues must be integrated into all other policy areas

The *European Environment Agency* makes a vital contribution towards strengthening environmental policy in the EU. It provides reliable data on both the current situation and on the developments of certain indicators, on the basis of which the priorities and targets of environmental policy may be set. The data also supports reliable success monitoring. Every five years, the *Environmen-*

tal Agency publishes a comprehensive report. Information is also published annually on selected indicators and topics, such as the application of market economy mechanisms.

B. United Nations

The United Nations Environment Programme – UNEP

The *United Nations Environment Programme (UNEP)* is the only United Nations institution dedicated solely to environmental issues. *UNEP* was founded in 1972; as a UN programme, it is a non-independent operational agency. Its main bodies are the Governing Council, the Secretariat and the *UNEP Committee of Permanent Representatives*, based in Nairobi. The Governing Council has 58 members, who spend four years in office. Since its foundation, Germany has been a continuous member of the Governing Council. For the past eight years, *UNEP*'s leadership has been German: The former German Environment Minister, Klaus Töpfer, held the office of Executive-Director from 1998 to mid-2006, and was succeeded in June 2006 by Achim Steiner, former Director-General of the *World Conservation Union (IUCN)*.

For years, Germany has ranked as one of the principal contributors to *UNEP*. In 2005, the German Government donated 6.64 million US dollars, making it the second-largest financer of the *Environment Fund* after the United Kingdom. Germany also donates € 670,000 per annum to the *Environmental Management for Developing Countries* programme at Dresden Technical University. *UNEP* and *UNESCO* are also involved in this programme in collaboration with the German Environment Ministry. This advanced environmental education programme is aimed at future decision-makers from developing and newly industrialising countries who work in administration and academia.

One of *UNEP*'s main achievements in recent years was the international chemicals strategy, adopted in Dubai in February 2006. High priority was also given to capacity- building in developing countries. *UNEP* also plays a significant role in helping to shape the framework for sustainable consumption and production patterns *(SCP)*, as agreed at the Johannesburg Summit in 2002.

United Nations Commission on Sustainable Development (CSD)

The second major UN body responsible for enforcing progress in international environmental policy is the *United Nations Commission on Sustainable Development (CSD)*. It was set up in the wake of the 1992 *United Nations Conference on Environment and Development* in Rio de Janeiro. The aim of the *CSD* is to raise awareness of environmental protection in terms of its interactions with social and economic concerns, and to promote sustainable development. The main vehicles for achieving this are the action programmes agreed in Rio and Johannesburg.

The current *CSD* work programme covers the period 2004 to 2017. The priorities are rotated every two years. The first twelve months are devoted to the research and analysis of previous successes and deficits, while the second year is dedicated to improving the political framework conditions.

Apart from a few exceptions, these two-year cycles focus on homogeneous themes:

2004/2005	Water, sanitation, human settlements
2006/2007	Energy for sustainable development, industrial development, air pollution, climate change
2008/2009	Agriculture, rural development, aridity, desertification, Africa
2010/2011	Transport, chemicals, waste management, mining, 10-year framework for sustainable production and consumption
2012/2013	Forests, biodiversity, biotechnology, tourism, mountains
2014/2015	Oceans, marine resources, development of small island states, disaster aid
2016/2017	Agenda 21 and its future implementation

Within each of these themes, cross-sectional topics such as combating poverty, preventive healthcare, gender issues and education will also be taken into account. The opportunities for changing non-sustainable consumption patterns or the impacts of development on selected regions will also be considered.

The 15th Annual Conference of the *CSD* in spring 2007 will address policy recommendations on energy, climate change, industrial development and air pollution control. In the light of climate change, rising energy prices and the fact that two billion people worldwide have no access to energy, the CSD Conference needs a change of focus so that energy efficiency measures worldwide can be stepped up and renewable energies expanded. The *Clean Development Mechanism (CDM)* outlined in the *Kyoto Protocol* is a key instrument for the required technology transfer.

However, even in industrialised countries, the potential for energy efficiency and for increasing the use of renewable energies is far from exhausted. Rising energy prices are lending impetus to this development: Increasingly, techniques aimed at saving energy or producing energy without the use of oil, gas and coal are becoming financially viable.

The Economic Commission for Europe (ECE)

The *Economic Commission for Europe (ECE)* is one of five regional commissions of the United Nations. It was founded in 1947 with the aim of promoting economic cooperation between member states. The name of the organisation is misleading: Apart from countries in Western, Central and Eastern Europe, the ECE also represents the USA and Canada as well as a number of countries in central Asia. In total, the 56 members are responsible for 64 % of global production, 60 % of all exports and between 65 and 70 % of all patent registrations. On the other hand, however, they are also responsible for 60 % of the world's carbon dioxide emissions, to give one example.

Environmental policy is a major focal point of the *ECE*. Over the past two decades, the organisation has developed international, legally binding conventions and protocols on a range of key environmental issues such as air pollution control, water, environmental impact assessment and industrial accidents, which have played a leading role in international environmental legislation.

Member States of the ECE

Albania Andorra Armenia Austria Azerbaijan Belarus Belgium Bosnia-Herzegovina Bulgaria Canada Croatia Czech Republic Cyprus Denmark Estonia Finland France Georgia Germany Greece Hungary Iceland Ireland Israel Italy Kazakhstan Kyrgyzstan Latvia Liechtenstein Lithuania Luxembourg Malta Macedonia Moldavia Monaco Montenegro Netherlands Norway Poland Portugal Romania Russian Federation San Marino Serbia Slovakia Slovenia Spain Sweden Switzerland Tajikistan Turkey Turkmenistan United Kingdom Ukraine USA Uzbekistan

After the iron curtain had fallen, the *ECE* focused primarily on integrating Central and Eastern Europe, whereby it was able to draw on many years of experience and extensive knowledge. One of the central pillars of its work are the *Environmental Performance Reviews*, which analyse and assess the current environmental status. In Central and Eastern European countries, this is often characterised by a history of neglect spanning several decades. Because many of these countries have acceded to the EU, the *ECE* is now focusing attention on acting as a "bridge" to the successor states of the Soviet Union.

C. Organisation for Economic Co-operation and Development (OECD)

Member States of the OECD

Australia Austria Belgium Canada Czech Republic Denmark EU Finland France Germany Greece Hungary Ireland Iceland Italy Japan Korea Luxembourg Mexico New Zealand Netherlands Norway Poland Portugal Slovakia Spain Sweden Switzerland Turkey United Kingdom and the USA

The *Organisation for Economic Cooperation and Development (OECD)* currently has 30 members from among the industrialised countries. However, the *OECD* also maintains close ties with Brazil, India, Indonesia, China and Russia in particular; these countries also have observer status in many work groups. The main aim of this organisation is to reach agreements ahead of international decision-making processes.

The issues addressed by the OECD include economic policy, trade, capital transactions, taxation issues, energy policy, agriculture, development aid and environmental problems. It has numerous specialist committees and expert groups whose mandate is to prepare for and implement decision-making with the support of the *OECD* Directorate.

The *OECD Environment Policy Committee (EPOC)* coordinates environment-related issues. The *International Energy Agency (IEA)* and the *Nuclear Energy Agency (NEA)* are also affiliated to the *OECD*. The German Environment Ministry collaborates with the *NEA* on the safe, sustainable disposal of radioactive wastes.

In recent years, environmental protection has become an increasingly important part of the *OECD*'s work. Alongside conventional environmental management, there is a growing empha-

sis on cross-sectional topics such as environment and trade, environment and agriculture, environment and transport, and environment and fiscal policy. Moreover, in 1997 the *OECD* began to integrate the sustainable development model more closely into its economic, social and environmental policy. Many areas of the OECD's work are now interwoven. In 2006, the Environment and Development Ministers resolved to interlink the various areas even more closely.

As early as May 2001, the Environment Ministers lent a powerful impetus to the cross-sectional approach: For energy, transport and agriculture policy in particular, they called for the explicit consideration of environmental concerns in future. Three years later they asked the *OECD* to calculate how expensive it would be if environmental protection measures were neglected.

In 1991, the *OECD* launched its *Environmental Performance Review* project. Within the context of this project, all *OECD* Member States will undergo a comprehensive assessment of their environmental policy. The process kicked off in 1992 with Germany, and Germany was also the pilot country for the review cycle, which began in the year 2000.

The increasingly important role played by the environment within the *OECD* is also reflected in its other activities. In 2004 it published environmental guidelines for export credit insurance, which were followed one year later by two manuals, one focusing on the "integration of environmental protection into the *OECD* guidelines for multinational companies", and the other on the integration of climate protection into development cooperation.

D. G8 process

The G8 members are the USA, Japan, Germany, the United Kingdom, France, Italy, Canada and Russia. The EU Commission also attends the G8 meetings

Since the 1992 World Conference in Rio, the Environment Ministers of the *G8* nations have met regularly ahead of the summit. Together with the competent EU Commissioners, they discuss central environment policy issues. The aim of these informal meetings is to coordinate negotiation strategies and adopt resolutions.

G8 2007
Environment Ministers Meeting

In addition to topics such as climate protection, biodiversity, forest and marine conservation, and tackling environmental crime, importance is also attached to the connection with economic issues. The Environment Ministers' main concern is to strengthen the global ecological regulatory framework to ensure an environmentally responsive path of economic globalisation. Under Germany's presidency, efforts to reinforce multilateral agreements and institutions in this field were agreed in 1999 in Schwerin. Two years later, it was decided that "trade and the environment" should be proposed as a key topic for the next round of world trade talks. The *G8* heads of state and government supported the project, and as a result, the World Trade Conference in Doha in November 2001 resolved to initiate separate negotiations on environmental issues, prompted by the realisation that sustainable global development necessitates close ties between international financial, economic and environmental policy and the relevant organisations. It is also crucial to make better use of economic and fiscal instruments and ensure that the environmental cost of pollution is borne by those responsible for it.

At the *G8* Summit in 2005 in the Scottish town of Gleneagles, climate change and Africa were the main topics on the agenda. The G8 heads of government launched a whole raft of measures with the action plan on "climate change, clean energy and sustainable development". Several international organisations such as the *International Energy Agency* and the *World Bank* also got involved. At the same time, a dialogue process was initiated between the G8 and newly industrialising countries aimed at achieving progress in the formulation of a climate-friendly, sustainable energy policy. The two main approaches are the promotion and proliferation of climate-friendly, efficient technologies and the advancement of climate policy framework conditions for the global energy market.

In 2007, Germany has taken over the Presidency of the *G8* once again. Climate protection and en-

ergy efficiency are on the list of priorities for the G8 Summit in Heiligendamm. 2007 will also be a decisive year for the continuation of the international negotiations on climate protection. Tangible measures to improve energy efficiency may become an area of rapprochement with regard to newly industrialising countries.

The G8, which represents the world's most highly developed industrialised countries, must set a good example and must make it clear that economic growth and a precautionary approach to environmental protection *can* go hand in hand. Conserving biological diversity is of vital importance for the world economy, both as a basic necessity of life and as a usable resource. Moving towards the Johannesburg target of significantly halting the loss of biodiversity by 2010 is therefore a top priority for the G8 environment ministers.

E. NATO

When people think of *NATO*, they tend to associate it with collective military defence and politico-strategic cooperation. Few people are aware that the North-Atlantic Treaty also has a civilian side as its "third dimension". However, Article 2 explicitly envisages furthering the development of peaceful and friendly international relations between the Parties. For the past 30 years or so, this non-military cooperation has also extended to environmental protection.
In 1969, the *Committee on the Challenges of Modern Society (CCMS)* was created within *NATO*. Its task is explicitly formulated as follows: "To explore ways in which the experiences and resources of western nations can most effectively be used to improve the quality of life of our people and to help people in the 20th century to learn to live in harmony with a rapidly changing world".

Today, cooperation within the framework of the *CCMS* is aimed primarily at the exchange of experiences and information on defence- and security-related environmental problems. This also includes environmental protection in the military sector, risk assessments for areas with radioactive and chemical pollution, and methods and techniques for the remediation of former military properties. Since the terrorist attacks of 11 September 2001, attention has focused in particular on terrorism and environmental security. Germany is calling for the *CCMS* to concentrate its activities on *NATO*-relevant areas in order to avoid competing with other international committees.

The environmental legacy of the Cold War is also the subject of the Euro-Atlantic Partnership Council of *NATO (EAPC)*. The *EAPC* was founded in 1997, and unlike its predecessor body NAKR, it also includes the successor states of the Soviet Union. Environment-related issues in the catchment areas of the Black and Caspian Seas are a key work area for the *EAPC*.

Environmental cooperation with the Russian Federation occurs in the *NATO-Russia Council (NRC)* specifically set up for this purpose. The emphasis here is on projects to tackle contaminated military sites and the safety of mineral oil storage and transportation. The *CCMS* is firmly involved in this cooperation arrangement.

In 2006, NATO underwent a fundamental restructuring process which it is hoped will lead to better coordination within its own ranks. As part of the restructuring, the *CCMS* was merged with the *Security and Peace Research Committee (SPC)*. The aim is to streamline internal procedures and achieve clearer orientation of the individual committees. At the same time, funding will also be improved. In future, environmental projects previously executed within the context of *CCMS* will be eligible for the same level of support as scientific projects.

F. International trade and financial institutions

Integrating the principle of environmental protection into all policy-making areas also extends to the work of international trade and financial institutions.

The Global Environment Facility (GEF)

The *Global Environment Facility (GEF)* is an important vehicle for helping less developed countries to make effective contributions to internationally agreed environmental protection targets. This funding mechanism was set up in 1991. The *GEF* is operated by *UNDP, UNEP* and the *World Bank*, while the funding is provided by the industrialised countries. Since its foundation, the GEF has provided some 6.2 million US dollars. Supplemented by cofinancing in excess of 20 billion US dollars, the money has been donated to more than 1,800 environmental protection projects in 140 countries.

The GEF pays subsidies to third-world countries as well as to countries in Central and Eastern Europe to enable them to carry out environmental protection projects. Since 1994 the *GEF* has been the financing instrument of the Framework Convention on Climate Change and the Convention on Biological Diversity, and handles all associated aid. Since 2002 the *GEF* has also performed the same function for the Stockholm Convention on Persistent Organic Pollutants (POPs).

As well as the key focal areas of climate, biodiversity and POPs, the GEF is also involved in projects for international waterbody and soil conservation, and for combating desertification and deforestation. Preserving the ozone layer is another focus of the *GEF*'s work. Supplementary to the Multilateral Environment Fund of the *Montreal Protocol*, the *GEF* also supports projects in Central and Eastern Europe in this field.

The World Trade Organisation (WTO)

The *World Trade Organisation (WTO)* plays a central role in global economic development. It has created a comprehensive set of regulations designed to safeguard and liberalise global free trade. When governments adopt measures to protect their native environment or to combat global environmental problems, particularly in the commercial sector, they can easily end up in contravention of *WTO* regulations. In order to avert these types of situations, a *Committee for Environment and Trade* was founded in 1995 within the context of the *WTO*. Its task is to identify the relationships between commercial and environmental measures and to promote sustainable development. The Committee may give recommendations on possible amendments of *WTO* regulations.

Since the 4th *WTO* Ministerial Conference in Doha in November 2001, separate negotiations have been held on environmental issues. The government representatives also agreed to consider the environmental aspects in all other negotiations in future. They were also keen to identify areas where *WTO* regulations clash with international agreements on environmental protection. Another item on the *WTO* agenda was promoting environmental technology by granting greater exemption from customs duty, but negotiations were suspended indefinitely in July 2006. The differences in opinion, particularly regarding reduced subsidies for agriculture and customs relief for industrial goods, proved insurmountable.

International financial institutions

Other financial institutions are likewise pivotal to the development of a sustainable economy. Ideally, such institutions should give greater consideration to environmental compatibility in the projects they finance as well as regional and sectoral programmes. This is important because such organisations should serve as role models for pri-

vate lenders and insurance companies. Individual financial institutions such as the World Bank have already adopted ambitious internal audit guidelines.

The group of international financial organisations includes:

- the World Bank Group, particularly the *International Bank for Reconstruction and Development (IBRD)* and the *International Finance Cooperation (IFC)*
- Regional development banks such as the *European Bank for Reconstruction and Development (EBRD)* and the *European Investment Bank (EIB)*
- the *International Monetary Fund (IMF)*

Export credit agencies

The government-backed systems for securing export credit in industrialised countries play a key role in international investments. In this connection, the German Government adopted new guidelines in 2001: Ecological, social and development-related aspects must be taken into account when insuring exporters against economic and political risks in the recipient country at the government's expense. Environmental guidelines for securing export credit have also been agreed by *OECD* members. These should be revised by the beginning of 2007. The German Environment Ministry is calling for enforcement of the resolutions, and also wants the ecological standard of the guidelines to be continuously raised.

Private banks and insurance companies

Private banks and insurance companies play a central role in economic events: In many areas, their lending criteria are decisive for overall development.

Back in 1992, the international credit and insurance industry drew up a code of conduct, which it presented at the Environment Summit in Rio. The inspiration for the "Statement of heads of regional development banks on the environment and sustainable development" originated from the *United Nations Environment Programme (UNEP)*. The document was updated in 1995, and more than 100 institutions have since signed the *UNEP* Statement. Involvement with this statement has often prompted financial service-providers to develop their own in-house eco-management systems.

In order to ensure that greater consideration is given to environmental protection requirements in international trade, investment and financing activities, the German Government is committed to the following:

- Permanently raising the environment portfolio in International Financial Institutions (IFIs)
- Systematic integration of environmental issues in the overall financing activities of IFIs (organisational structure, procedures, programmes)
- The continued publicising and implementation of the *UNEP* Statement by banks and insurance companies on the environment and sustainable development
- Consistent application of environmental guidelines for government-backed securing of export credit at *OECD* level
- The reinforcement of integrated environmental protection at the forthcoming *WTO* negotiations
- The introduction of customs concessions for products from sustainably managed rainforests. To this end, the general preference system needs to be modified. Later on, it is hoped that this provision can be transferred to other product areas.
- Consistent application of the OECD guidelines on the environmental conduct of multinational companies
- The introduction of environmental clauses into investment agreements.

IV. REGIONAL AND BILATERAL COOPERATION

A. Central and Eastern Europe

Major environmental problems persist throughout many Central and Eastern European countries, particularly in the successor countries to the Soviet Union.

As part of their accession to the EU, the new Member States have undertaken to adopt the ambitious environmental legislation of the Community in its entirety. The same applies to the EU candidate countries. Major efforts will be needed from all parties.

Improving the environmental situation in Central and Eastern Europe is a particular concern for Germany, for several reasons:

- Geographically speaking, the countries are very close to Germany, and it shares borders with some of them. For this reason, environmental pollution in Central and Eastern Europe often impacts Germany as well.
- "Eco-dumping" must also be prevented out of consideration for the labour market. It is not fair for companies to migrate to the east of the EU to take advantage of less stringent environmental provisions.
- We cannot allow the powerful economic upturn in many countries to occur at the expense of the environment. At the same time, the new EU Members and accession candidates represent important clients for modern environmental technology.

The approximation of environmental standards in the new EU Member States necessitates extensive structural reforms. In view of its experiences with the transformation of a socialist system, Germany is a particularly valuable source of advice. The German Environment Ministry supports these countries in developing the necessary institutions, and organises the transfer of experience and knowledge. There are various mechanisms available for this purpose, which should complement and build on one another wherever possible. (Cf. I B 3)

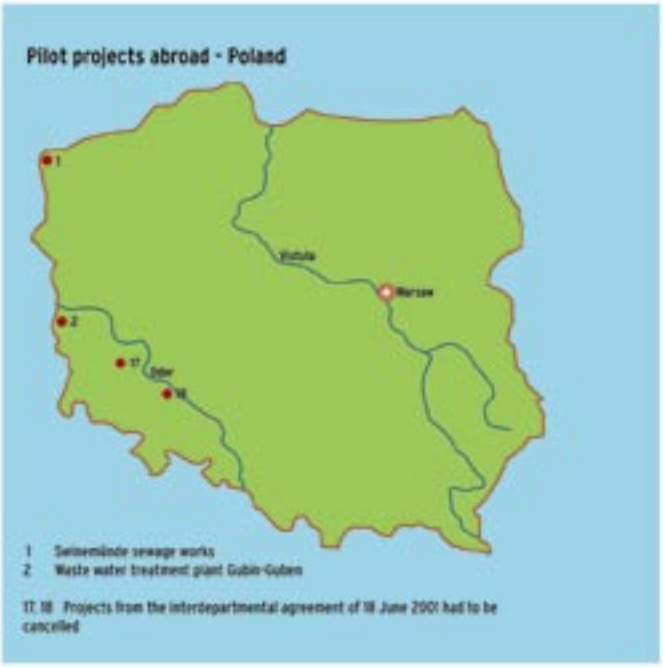
Germany has entered into bilateral environmental agreements with most Central and Eastern European countries. Its direct neighbours Poland and the Czech Republic are particularly important partners.

Poland and the Czech Republic

Not long after the transformation process had begun, Germany started collaborating closely with the Republic of Poland and the Czech Republic on environmental matters. Their shared borders necessitate good coordination e.g. in order to protect boundary waters from contamination, adopt precautionary measures for accidents and disasters, and carry out environmental compatibility testing of construction projects close to the border. At the same time, there is huge potential for the development of solutions along the borders which are economically and ecologically beneficial for both parties. Bilateral agreements on environmental cooperation have existed with Poland since 1994 and with the Czech Republic since 1996.

A number of German-Polish and German-Czech projects for transboundary waste water treatment have been implemented since the mid-Nineties. Sewage treatment plants in the Polish cities of Gubin and Swinemünde and in the Czech cities of Raudnitz an der Elbe, Böhmisch Kamnitz, Aussig, Tetschen, Teplitz and Most-Chanov have been constructed as joint pilot projects, with the German Government providing funding of around 29 million €.

Investments in the reduction of environmental pollution abroad in Poland and Czech Republic



Source: Federal Ministry for the Environment, Nature Conservation and Nuclear Safety (BMU), 2006

Transboundary nature conservation also offers a wide range of opportunities. The German-Polish nature reserve "Lower Oder Valley International Park" is a model for joint protection areas. Our cooperation with the Czech Republic centres around two transboundary national parks – *Bayerischer Wald/Sumava* and *Sächsische Schweiz/Böhmische Schweiz*.

Because the air in the vicinity of the Polish/Czech/German border has traditionally been heavily contaminated by the coal industry, the three countries now cooperate closely on tackling the associated problems. One of the biggest problems to date has been major forest damage in the Erz and Riesen mountain ranges caused by large quantities of sulphur dioxide from outmoded plant.

15 years of cooperation in the former "Black Triangle" is starting to bear fruit: Air pollution has tangibly diminished, thanks in large part to the redevelopment and decommissioning of large power stations in North Bohemia and Saxony and the upgrading of the Polish power station Türchau. Germany helped to fund part of this work. Today, measuring stations continuously monitor the air in the region, and the affected countries exchange data and conduct joint evaluations.

In the Erzgebirge mountain range, there have also been German-Czech projects to improve air quality since 1996. The *Action Programme Erzgebirge/Fichtelgebirge* was created in 2001. The German Environment Ministry donated around € 490,000 to the Air Pollution Control Fund, which was used to help companies, public institutions and private individuals in the Czech border regions to convert their heating systems from coal to more eco-friendly energy carriers. Cooperation in this field is set to continue.

The construction of two wind farms in the Czech Republic was also co-funded by Germany. It is partly because of this that a longer-term provision was adopted in 2005 guaranteeing remuneration for wind farm operators for the electricity they feed into the grid.

The relevant control and coordination committees – the *German-Polish Environment Council*, the *German-Polish Commission for Neighbourly Cooperation in the Field of Environmental Protection* and the *Joint German-Czech Environment Commission* – ensure close, comprehensive cooperation in the field of transboundary environmental protection.

Environment for Europe process

The *Environment for Europe* process was founded in 1991 at a meeting of environmental ministers in Dobris near Prague. Apart from the 25 old and new EU Member States, the 55 participating countries also included the West Balkan states, the New Independent States in Eastern Europe, the Caucasus and Central Asia, as well as the USA, Canada and Japan. A number of international financial institutions such as the *European Bank for Reconstruction and Development (EBRD)*, the World Bank Group and various international organisations and NGOs are also involved.

The aim of the process is to concentrate national and international efforts aimed at environmental protection and to improve the situation in transformation countries. Since the last Pan-European Conference of Environment Ministers in 2003 in Kiev, the process has concentrated on the successor states to the Soviet Union, with an emphasis on the following topics:

- Developing the infrastructure for water
- Introducing ecologically-minded corporate management and funding of environmental projects
- Supporting the enforcement of environmental legislation

The German Environment Ministry provides extensive practical support and advice. Not only does it fund the project, but also implements a series of consultation projects in collaboration with the Federal Environmental Agency. One recent example was the institutional strengthening of the Georgian Ministry for the Environment and Natural Resources. In October 2005, a group of selected experts travelled to Tbilisi in order to collaborate with the Head of the Georgian Environment Ministry and identify areas in need of expert advice, then formulate strategies for future bilateral environmental partnerships. In the follow-up to these discussions, experts from German authorities will help their Georgian counterparts to develop a modern personnel management system.

Regional environmental development programme for South-East Europe

After the war had ended, Environment Ministers in South-East Europe seized the initiative: The *Regional Environmental Reconstruction Programme REReP* was created in March 2000 within the framework of the European Stability Pact. The plan was to develop a regional approach for solving the environmental problems in the West Balkan region.

The main objectives are:

- To develop administrative capacity in the environmental field
- To raise environmental awareness within civilian society
- To encourage transboundary cooperation with regional environmental projects
- To preserve biodiversity.

The German Environment Ministry supports the activities of the Stability Pact through active participation in the *REReP* task force. Germany also supports a series of projects throughout the Western Balkan. Its advisory role to the Drvenik group of islands in Croatia on water supply and sewage disposal is just one example. Germany is also assisting with the development of a sustainable public local transport system in the capital of Albania, Tirana. This includes switching to environmentally friendly modes of transport as well as training the transport police and sensitising the general public to the environmental consequences of traffic.

Baltic 21

In order to make development in the Baltic Sea region as sustainable as possible, the heads of government of the nine littoral states plus Norway and Iceland created the *Baltic 21* process in 1996. Non-government organisations, municipalities and industry organisations are also involved.

The German Environment Ministry is representing Germany in the management committee of the process. It is primarily concerned with topics such as transport, tourism, agriculture, industry, energy, environmental education, fishing, forestry and regional planning. Together with Sweden, Germany is in charge of tourism, and together with Poland, in charge of agriculture.

Since 2004, *Baltic 21* has focussed on the use of "flagship projects" to illustrate sustainable development and how to achieve it. The projects address key environmental problems in the Baltic Sea region. At least three countries are involved in their implementation. Germany is particularly committed to the *AGORA* project, aimed at developing a financially self-supporting network to promote sustainable tourism in the Baltic Sea region.

Environmental partnership with Kaliningrad and North-West Russia

The *EU Community Initiative on the Northern Dimension* cooperates with initiatives in North-West Russia and Kaliningrad. This includes the establishment of an environmental partnership whose projects are financed from the *NDEP* fund created especially for this purpose. Donors include the littoral states of the Baltic Sea including Russia, as well as the North Atlantic states.

Funds are made available for the disposal of residual nuclear waste and for the support of other environmental protection measures such as sewage disposal, waste management, flood protection and energy efficiency. Germany contributes € 20 million.

B. Developing and newly industrialising countries

In its environmental cooperation with developing and newly industrialising countries, the German Government is pursuing a number of objectives. On the one hand, it wants to raise awareness of the problems among the general public as well as among policy-makers. On the other, suitable ways of implementing environmental protection need to be found. Technical solutions play a key role in this respect. Finally, in collaboration with the German Ministry for Economic Cooperation and Development, the German Environment Ministry also initiates concrete projects and accompanies their implementation.

The advanced environmental education programme for experts from developing and newly industrialising countries has proven beneficial in this respect. The programme is offered as a joint project between the German Environment Ministry, *UNEP* and *UNESCO* at the "Centre for International Postgraduate Studies of Environmental Management" at Dresden Technical University. The courses, which were established in 1977, are highly respected throughout the world, and demand for them is increasing. More than 1,000 participants from 120 developing and newly industrialising countries have already taken advantage of this offer.

China

China is the world's most populated country, with an economy that is rapidly expanding. The environmental problems associated with this development pose a major challenge, and are now taken very seriously by the Chinese leadership. Against this background, China has a keen interest in Germany's environmental experience and is increasingly keen to draw on Germany's expertise.

An agreement concluded in 1994 between the German Environment Ministry and the Chinese State Environmental Agency provides a basis for cooperation. The agreement covers environmental legislation, environmental cooperation, and environmental technologies where Germany is a world market leader in many areas.

With a major bilateral environmental conference in the year 2000 and two bilateral forums in Beijing in 2003 and Qingdao in 2006, Germany and China have created a solid foundation for intensive environmental cooperation. In 2006, both parties agreed to intensify their environmental cooperation in the areas of sustainable energy use, renewable energies and the closed-substance cycle with the aim of establishing a strategic partnership. Additionally, in July 2006 the two countries agreed to cooperate on chemicals management. Both parties benefit from this arrangement: Cooperation helps China to overcome its environmental problems, while for Germany the arrangement offers a major opportunity for the export of technology and employment protection.

India

India is also one of Germany's main cooperation partners in environmental protection. Cooperation centres around the Energy Forum agreed between the two governments in 2006. If India wants to sustain its powerful economic growth, its energy production will need undergo extensive modernisation and expansion. It is relying on German expertise to help it to achieve this. Specifically, the energy forum addresses the following points:

- Increasing energy efficiency in power generation, including "clean" coal technologies.
- Energy-saving measures on the demand side, including buildings
- Improving electricity transmission and distribution, including the creation of an interconnected grid
- Agreement on the use of the *Clean Development Mechanism*, including the agreement of concrete projects
- Increasing the use of renewable energies and their feed-in into the general electricity grids
- Projects within the context of development aid.

South Africa

Not only is South Africa one of the most important countries on the African continent; it has also evolved into a leading representative of developing countries in the international political arena. In 1998, the Environment Ministries of South Africa and Germany signed a cooperation agreement. Every two years, the expert committee sets new focal points for the cooperation. Priority is currently given to climate protection and sustainable energy supply, air pollution control, and protecting biodiversity. The eco-friendly organisation of the forthcoming football World Cup in South Africa in 2010 is also on the agenda.

Brazil

As well as cooperating within the context of the *Multilateral Forums for the Environment and Sustainable Development*, in 1996 Brazil and Germany issued a bilateral declaration, with meetings being held at ministerial level to decide on its implementation and formulation. Priority areas include international forest policy, the protection and sustainable use of biological diversity, and energy and climate policy.

One of the outcomes of the German-Brazilian Environment Forum in October 2003 was the agreement to hold a workshop on the topic of "Tackling poverty and protected areas", which was held in the north-east of Brazil in October 2005 and which served as an important preparation for the Conference of the Parties to the *Convention on Biological Diversity (CBD)*, which took place in Curitiba in March 2006.

Germany and Brazil also cooperate in the area of energy policy. At the international conference on renewable energies, *renewables2004* in Bonn, both

parties signed a Memorandum of Understanding in which they agreed to participate in expert exchange and debate at a high political level. Brazil is one of a number of newly industrialising countries which are forging ahead with the expansion of renewable energies.

Mexico

The Mexican population and economy are both expanding at a rapid pace, putting major pressure on the conservation of natural resources. On the one hand, Mexico is a member of the *OECD*, yet on the other, it remains a developing country in many of its rural regions. The Central American country acts as an interface between industrialised and developing countries, which is significant for international environmental protection initiatives.
Against this background, Mexico is also keen to accept international responsibility. For example, in 2006 it hosted the 4th World Water Forum, and is also very active within the context of the *G8* Gleneagles follow-up process.

The Environment Ministries of Mexico and Germany signed an agreement in 1993, promising to step up the exchange of information. Current topics under debate include eco-taxes and environmental indicators. Within the context of this agreement, the German Environment Ministry is also involved in the largest environmental trade fair in Mexico, *TECOMEX*, which has alternating themes.

At the periphery of the Conference of the Parties to the Convention on Climate Protection in Montreal at the end of 2005, the Environment Ministers of both countries signed a Memorandum of Understanding on the *Clean Development Mechanism (CDM)*. This envisages joint projects as well as the exchange of information on CDM-relevant negotiation topics.

For years, environmental and resource conservation has been a priority for German-Mexican development policy. Other current priorities include industrial waste and residual pollution, renewable energies, water and biodiversity.

Near and Middle East

Germany is particularly committed to its cooperation with the countries of the Near East. This is one of the most arid regions in the world. Inadequate management and overuse of resources by agriculture are further exacerbating the situation. Energy demand is also continually rising, and many of the power stations are technically outmoded.
However, the Near East offers good opportunities for the use of renewable energies, as well as considerable potential for energy efficiency measures. This produces attractive investment opportunities for German companies.

During his trip to the Near East in June 2006, Federal Environment Minister Sigmar Gabriel signed agreements with Israel, Jordan and Egypt to expand environmental cooperation. This includes the improvement of water supply and disposal, as well as a sustainable energy policy. Gabriel had already signed a cooperation agreement with the United Arab Emirates in February 2006. Waste disposal and increasing the use of renewable energies are high on the list of priorities.

Cooperation between Europe and Asia

The Asian-European summit in Bangkok in March 1996 initiated the so-called *ASEM* process, which involves 35 countries, including the 25 EU countries and the seven members of the *Association of South-East Asian Nations (ASEAN)*, the People's Republic of China, Japan, South Korea and the European Commission. From the outset, high priority was given to environmental issues as well as economic and cultural concerns. Since January 2002, the Environment Ministers of the participating countries have met regularly, whereas prior to this, the process was primarily the domain of Foreign Ministers.

German-Singapore Environmental Technology Agency

The *German-Singapore Environmental Technology Agency (GSETA)* was founded at the end of 1991 and aims to improve the transfer of environmental protection expertise into the Asian-Pacific region. The Environment Ministries of Singapore and Germany hold joint seminars, workshops and expert conferences in the field of eco-management and environmental technology, which are attended by high-ranking representatives of environmental administrations from the Asian-Pacific region. By 2005, these events had already been attended by around 1,000 experts from 17 countries.

C. Industrialised countries

France

German-French relations are excellent in every respect, and this extends to the environmental sector. In addition to close collaboration within the EU and at international level, the two countries also have a diverse range of cooperation arrangements at inter-governmental and regional level.
The *German-French Environment Council* founded in 1989 convenes every year in Germany and France alternately, attended by ministers and regional representatives. The agenda includes bilateral, European and global issues. Joint initiatives are adopted and strategies at international level coordinated. For instance, both governments are calling for environmental protection to be given greater weighting in the United Nations.

Climate protection and the worldwide expansion of renewable energies are currently high on the agenda for German-French environmental cooperation. At the Environment Council in September 2006 in Royaumont near Paris, Germany and France saw it as necessary that the EU should achieve a significant 30% reduction in greenhouse gas emissions by 2020 – as a contribution to the reduction of 50% needed worldwide by 2050.
At the Environment Council in summer 2005 on the island of Vilm near Rügen, the two parties were already in agreement that aviation should be included in EU emissions trading. At the same time, Germany and France are aiming for an international solidarity surcharge on flight tickets.

USA

Environmental dialogue between Germany and the USA has been on-going since 1974. At that time, the two governments signed an agreement to cooperate on environmental matters. Although both parties have very differing views on climate protection and, in particular, conflicting assessments of the Kyoto process, dialogue has always been maintained at various different levels. Germany is hopeful that progress can be made in view of the increasingly urgent need for internationally agreed measures to avert global warming.

Turkey

Environmental protection will play a significant role in the negotiations surrounding Turkey's accession to the EU. Here, Turkey still has some major catching up to do in all areas, and transitional and special provisions will undoubtedly be needed. EU documentation on the status of the accession preparations has ascertained little progress so far in the field of environmental protection.

In particular, Turkey expects Germany to support it this process. In view of the intensive economic relationships between the two countries, Germany sees favourable prospects for exports and joint ventures. For example, five of Turkey's six EU-financed twinning projects in the environmental sector are being carried out with German partners. In cooperation with German Federal States and with the support of the *Deutsche Gesellschaft für Technische Zusammenarbeit (GTZ)*, the German Environment Ministry is advising the Turkish Ministry for Environment and Forests on approximation to EU law. Specifically, this concerns the following priority areas: Nature conservation, waste management and industrial waste, air pollution control, and noise protection. Together, the experts identify the principal deficits and seek solutions with their Turkish colleagues.

Since the meeting of the two Environment Ministers in January 2004, German-Turkish environmental cooperation has developed in other areas as well. An agreement is currently under preparation regarding the performance of joint pilot projects for environmental protection in Turkey. Joint conferences have also been held on waste management and sewage treatment. Congresses on climate protection, renewable energies, nature conservation and tourism, and materials flow management were also held in October 2005 during a visit by the German Environment Minister to Turkey.

Japan

In 1997, Germany and Japan signed a government agreement to cooperate in the field of environmental protection. It was the first treaty of its kind that Japan had ever signed with an EU state. The main objective here is the mutual exchange of information and experience. Both countries have agreed to explore the opportunities of joint strategies on waste management, sewage disposal, noise abatement and soil conservation, and with regard to the ozone hole and the greenhouse effect.

Within the framework of bilateral cooperation German experts travel to Japan and Japanese delegations from government, industry and the academic community visit the German Environment Ministry and the Federal Environmental Agency. At present, attention focuses primarily on climate protection and the post-2012 process, ecotaxes, renewable energies and flood protection.

From April 2005 to March 2006, Japan celebrated "Germany Year". This offered numerous opportunities for showcasing Germany's pioneering role in ecotaxes, emissions trading, eco-friendly construction practices, energy from biomass, and for exploring the opportunities for cooperation.

South Korea

Germany and South Korea have resolved to collaborate more closely and more systematically in future on environmental protection. An agreement to this effect was signed by the then-Environment Minister Jürgen Trittin and his South Korean counterpart Myung-Ja Kim in July 2001 in Berlin. Specifically, the agreement cites the following points: Transfer of environmental technology, renewable energies, environmental impact assessment, nature conservation and environmental education, as well as waste incineration and recycling. The experiences of German reunification could also be useful for South Korea.

V. APPENDIX

A. Selected documents on international environmental cooperation

Bilateral environmental cooperation

Note: The agreements refer to cooperation in the field of environmental protection, unless otherwise specified.

Albania
- Departmental agreement of 13 October 1992

Australia
- Departmental agreement of 11 June 1992

Brazil
- Joint environmental statement of 20 November 1996

Bulgaria
- Government agreement of 11 June 1993

China
- Departmental agreement of 26 September 1994

Estonia
- Departmental agreement of 25 May 1992

India
- Memorandum of Understanding of 8 September 1998

Indonesia
- Departmental agreement of 25 February 1993

Iran
- Departmental agreement of 4 October 1992

Israel
- Government agreement of 11 December 1991 (nature conservation and landscape management)
- Government agreement of 17 March 1993 (environmental protection and nature conservation)

Japan
- Government agreement of 26 August 1997

Canada
- Departmental agreement of 17 September 1990

Latvia
- Departmental agreement of 14 April 1993

Lithuania
- Departmental agreement of 16 April 1993

Malaysia
- Government agreement of 18 November 1995

Mexico
- Departmental agreement of 25 October 1993

Poland
- Agreement of 17 June 1991 (creation of the German-Polish Environment Council)
- Treaty of 19 May 1992 (water management on boundary waters)
- Government agreement of 7 April 1994 (environmental protection)
- Several departmental agreements on the performance of joint pilot projects in the field of environmental protection (including "Swinemünde sewage treatment plant", "Gubin-Guben sewage treatment plant")

Poland/Czech Republic
- Three-party agreement of 17 September 1996 regarding the exchange of immission data on air pollution in the "Black Triangle"

Russian Federation
- Departmental agreement of 28 May 1992 (establishment of a German-Russian environmental agency)

Singapore
- Departmental agreement of 26 November 1991

Romania
- Government agreement of 5 April 1993

Slovak Republic
- Government agreement of 14 July 1997

South Africa
- Departmental agreement of 10 March 1998

South Korea
- Memorandum of Understanding of 6 July 2001

Czech Republic
- Treaty of 12 December 1995 (water management on boundary waters)
- Government agreement of 24 October 1996 (environmental protection)

- Several departmental agreements on the performance of pilot projects in the field of environmental protection (including "flue gas scrubbing plants in the Prunerov I power station", "Decin sewage treatment plant", "Sewage treatment plants in North Bohemia", "Most/Teplice sewage treatment plants", "Air pollution control fund", "Cheb/Eger eco-friendly heat and power supply" and "U tri Panu wind farm")

Turkey
- Government agreement of 5 October 1992

Ukraine
- Government agreement of 10 June 1993

Hungary
- Government agreement of 9 May 1993
- Departmental agreement of 27 November 1990 (air measurement network for the city of Budapest)

Uruguay
- Departmental agreement of 20 May 1998

USA
- Government agreement of 9 May 1974

United Arab Emirates
- Memorandum of Understanding of 10 September 2005

Multilateral environmental cooperation

Links to international agreements may be found on the German Environment Ministry (BMU) website (www.bmu.de/3917) and on the homepage of the UN environment programme (/www.unep.org/dpdl/Law/Law_instruments/index_complete_list.asp).

1. General agreements and conventions

- **Rio Declaration**
  The declaration adopted at the 1992 "Earth Summit" in Rio de Janeiro sets out the key principles which should govern future conduct between governments and between governments and their people in the field of environment and development.
- **AGENDA 21**
  Agenda 21, which was likewise adopted in Rio in 1992, is a comprehensive work programme for future global cooperation on environmental and development policy aimed at sustainable development.
- **Johannesburg Action Plan**
  The Johannesburg Action Plan adopted at the 2002 World Summit for Sustainable Development in Johannesburg updates Agenda 21 with new timetables and priorities. Priority areas include tackling poverty, access to clean drinking water, basic sanitation, biological diversity, energy policy, chemical safety, and sustainable consumption and production patterns.

2. Climate protection

www.unfccc.org
- **United Nations Framework Convention on Climate Change** of 9 May 1992 (Climate Convention, UNFCCC).
- **Kyoto Protocol** of 11 December 1997

3. Protection of the stratospheric ozone layer:

www.unep.org/ozone
- **Vienna Convention** for the Protection of the Ozone Layer of 22 March 1985
- **Montreal Protocol** on Substances that Deplete the Ozone Layer of 16 September 1987

4. Biological diversity

- **Convention on Biological Diversity (CBD)** of 22 May 1992
  www.biodiv.org
- **Forest Declaration** of Rio de Janeiro, 1992
- **Washington Convention on International Trade in Endangered Species** (CITES) of 3 March 1973
  www.cites.org
- **Ramsar Convention** of 2 February 1971
  Convention on Wetlands of International Importance
  www.ramsar.org
- UNESCO Convention concerning the Protection of the **World Cultural and Natural Heritage** of 16 November 1972
  whc.unesco.org
- **Bonn Convention** (CMS) of 23 June 1979
  Convention on the Conservation of Migratory Species of Wild Animals – together with specific regional agreements to the Convention on the conservation of seals, small cetaceans, bats and waterbirds
  www.cms.int
- Convention of 1 June 1972 on the **Conservation of Antarctic Seals** (CCAS)
  www.umweltbundesamt.de/antarktis-e/ccas

5. Water protection

- Convention for the Protection of Lake **Constance** against Pollution of 27 October 1960
  www.igkb.de
- Protocols concerning the constitution of international commissions for the protection of the **Moselle** and the **Saar** against pollution of 20 December 1961
  www.iksms-cipms.org
- Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter (**London Convention**) of 29 December 1972 with global validity, amended by a Protocol of 7 November 1996
  www.londonconvention.org
- Convention on the Protection of the Marine Environment of the Baltic Sea Area of 22 March 1974 and of 9 April 1992 (**Helsinki Convention**)
  www.helcom.fi
- Convention of 1973 for the Prevention of Pollution from Ships in the Protocol version of 1978 (**MARPOL** 73/78), with international validity
  sedac.ciesin.org/entri/texts/pollution.from.ships.1973.html
- United Nations **Convention on the Law of the Sea** of 10 December 1982
  http://www.un.org/Depts/los/index.htm
- Agreement for Co-operation in Dealing with Pollution of the North Sea by Oil and Other Harmful Substances (**Bonn Agreement**) of 13 September 1983 in the version amended on 22 September 1989
  fletcher.tufts.edu/multi/texts/BH834.txt
- International **Conferences on the Protection of the North Sea**, which have been adopting far-reaching fundamental environmental resolutions on the protection of the North Sea since 1984
- Agreement on the International Commission for the Protection of the **Elbe** of 8 October 1990
  www.ikse.de
- Convention on the **Protection and Use of Transboundary Watercourses and International Lakes** of 17 March 1992
  www.unece.org/env/water
- Convention for the Protection of the Marine Environment of the North-East Atlantic (**OSPAR Convention**) of 22 September 1992
  www.ospar.org
- Convention on Cooperation for the Protection and Sustainable Use of the **Danube** of 29 June 1994
  www.icpdr.org
- Washington Declaration and **Global Programme of Action** for the Protection of the Marine Environment from Land-Based Activities (Washington November 1995)
  www.gpa.unep.org
- Convention of 11 April 1996 on the International Commission for the Protection of the **Oder** from Pollution
  www.mkoo.pl
- Convention on the Protection of the **Rhine** (new) of 12 April 1999
  www.iksr.org
- International Convention on the **Maas** of 3 December 2002
  www.cipm-icbm.be

6. Soil conservation/desertification

- United Nations Convention to Combat Desertification of 17 June 1994 (**UNCCD**)
  www.unccd.int

7. Air pollution control

- Geneva Convention of 13 November 1979 (**LRTAP**)
  Convention on Long-Range Transboundary Air Pollution and Protocols regulating sulphur, nitrogen oxide, volatile organic compounds (VOC), persistent organic pollutants, heavy metals and to combat acidification, eutrophication and ground-level ozone
  www.unece.org/env/lrtap

8. Protection against hazardous substances

- **Basel Convention** of 22 March 1989 on the Control of Transboundary Movements of Hazardous Wastes and their Disposal
  www.basel.int
- Convention of 10 September 1998 (**PIC Convention**)
  on the Prior Informed Consent Procedure for Certain Hazardous Chemicals and Pesticides in International Trade
  www.pic.int
- Stockholm Convention on Persistent Organic Pollutants of 23 May 2001 (**POPs Convention**)
  www.pops.int

9. Cross-sectoral agreements

- **Espoo Convention** of 25 February 1991 (with amendments of 2001 and 2004) on Environmental Impact Assessment in a Transboundary Context and the Protocol of 21 May 2003 on Strategic Environmental Assessment (**SEA Protocol**)
  www.unece.org/env/eia
- Convention on the Transboundary Effects of **Industrial Accidents** of 17 March 1992
  www.unece.org/env/teia
- **Aarhus Convention** of 25 June 1998 (with amendment of 2005) on Access to Information, Public Participation in Decision-Making and Access to Justice in Environmental Matters and the Protocol on Pollutant Release and Transfer Registers of 21 May 2003 (PRTR Protocol)
  www.unece.org/env/pp

10. Regional agreements and programmes

- **Protocol** of 4 October 1991 to the **Antarctic Treaty on Environmental Protection**
  www.antarctica.ac.uk
- **Alpine Convention** of 7 November 1991
  Convention Concerning the Protection of the Alps with additional protocols (nature conservation and landscape management, mountain agriculture, regional planning and development, alpine forests, soil conservation, tourism, energy, transport, settlement of disputes)
  www.alpenkonvention.org
- **Environmental Action Programme for Central and Eastern Europe**
  Adopted in May 1993 in Lucerne by the Second Pan-European Conference of Environment Ministers
  www.unece.org/env/efe
- Agenda 21 for the Baltic Sea Region (**Baltic 21**)
  www.baltic21.org

B. List of abbreviations

ACP
Africa, Caribbean, Pacific – Group of 77 developing countries from these regions

AP
Airborne particles

Bq
Becquerel

C_2F_6
Hexafluoroethane

CBD
Convention on Biodiversity

CCD
Convention to Combat Desertification

Cd
Cadmium

CEE
Central and Eastern Europe

CEN
Comité Européen de Normalisation (European Committee for Standardization)

CF_4
Carbon tetrafluoride

CFC
Chlorfluorocarbons

CH_4
Methane

CHC
Chlorinated hydrocarbon

CIS
Commonwealth of Independent States (successor states to the former Soviet Union)

CO
Carbon monoxide

CO_2
Carbon dioxide

CSD
Commission on Sustainable Development

DDT
Dichlorodiphenyl trichloroethane

EBRD
European Bank for Reconstruction and Development

EC
European Community

ECE
Economic Commission for Europe

ECNC
European Center for Nature Conservation

EDTA
Ethylenediaminetetraacetic acid

EEC
European Economic Community

EIB
European Investment Bank

ERP
European Recovery Programme

EU
European Union

EURATOM
European Atomic Energy Community

FAO
Food and Agriculture Organization of the United Nations

G 7
Group of seven leading economic powers (USA, Canada, Japan, United Kingdom, France, Italy, Germany)

G 8
G 7 nations plus Russia

G 24
Group of 24 western industrialised nations (OECD Member States)

G
Grams

GDP
Gross domestic product

GEF
Global Environment Facility

GGE
Greenhouse Gas Emissions

GJ
Gigajoule

GLP
Good Laboratory Practice

HELCOM
Helsinki Commission (Convention on the Protection of the Marine Environment of the Baltic Sea Area)

H-CFCs
Partially halogenated CFCs

H_2
Hydrogen

Ha
Hectares

HC
Hydrocarbon

HCB
Hexachlorobenzene

HCH
Hexachlorocyclohexane

HFC
Hydrofluorocarbons

Hg
Mercury

IAEA
International Atomic Energy Agency

ICAO
International Civil Aviation Organization

ICLEI
International Council for Local Environmental Initiatives

ICRP
International Commission on Radiological Protection

IEA
International Energy Agency

IKSD
International Commission for the Protection of the Danube

IKSE
International Commission for the Protection of the Elbe

IKSO
International Commission for the Protection of the Oder

IKSR
International Commission for the Protection of the Rhine against Pollution

IMO
International Maritime Organisation

INK
International Conference on the Protection of the North Sea

ISO
International Organisation for Standardisation

ITTO
International Tropical Timber Organization

ITUT
International Environmental Transfer Center

IUCN
International Union for the Conservation of Nature

KfW
Kreditanstalt für Wiederaufbau (Reconstruction Loan Corporation)

MAI
Multilateral Agreement on Investment

MEA
Multilateral Environmental Agreement

N/N_2
Nitrogen

N_2O
Dinitrogen oxide (laughing gas)

NATO
North Atlantic Treaty Organization

ng
Nanogram

NGO
Non-governmental organisations (e.g. associations)

NH_3
Ammonia

NH_4
Ammonium

NO_3
Nitrate

NO_x
Nitrogen oxides

O_2
Oxygen

O_3
Ozone

ODS
Ozone depleting substances

OECD
Organisation for Economic Co-operation and Development

OSCE
Organisation for Security and Co-operation in Europe

OSPAR
Oslo-Paris-Commission - Convention for the Protection of the North-East Atlantic

P
Phosphorous

PAH
Polycyclic aromatic hydrocarbons

Pb
Lead

PCB
Polychlorinated biphenyls

PCDD/F
Polychlorinated dibenzo-p-dioxins and dibenzo-furans (collective parameter for dioxin)

PCP
Pentachlorophenol

PFC
Perfluorinated compounds (see CFC)

PHARE
Poland and Hungary Action for Restructuring of the Economy (Central EU aid programme to promote the scientific and social reform process and to develop market economy conditions in Central and Eastern Europe)

PIC
Prior Informed Consent (Certain chemicals may only be exported with the prior consent of the importing country)

PJ
Petajoule

POP
Persistent Organic Pollutants

ppb
parts per billion

ppbv
parts per billion per volume unit

ppm
parts per million

R22
Chlorodifluoromethane

REN-21
Renewable Energy Policy Network for the 21st Century

SAICM
Strategic Approach to International Chemicals Management

SF_6
Sulphur hexafluoride

SO_2
Sulphur dioxide

SSK
Strahlenschutzkommission (Commission on Radiological Protection)

TACIS
Technical Assistance for the Commonwealth of Independent States

TBT
Tributyl tin compound

TCDD
2,3,7,8-tetrachlorodibenzo-p-dioxin

UBA
Umweltbundesamt (Federal Environmental Agency)

UN
United Nations

UNCED
United Nations Conference on Environment and Development

UNCLOS
UN Law of the Sea Convention

UN-ECE
United Nations Economic Commission for Europe

UNCTAD
United Nations Conference on Trade and Development

UNEO
United Nations Environment Organisation

UNEP
United Nations Environment Programme

UNESCO
United Nations Educational, Scientific and Cultural Organisation

UVB radiation
Type B ultraviolet radiation

VOC
Volatile Organic Compounds

WBGU
Wissenschaftliche Beirat für globale Umweltveränderungen (German Advisory Council on Global Change)

WHO
World Health Organization

WTO
World Trade Organization

C. Selected links

Institutions in Germany

▶ **http://www.bmu.de**
The German Environment Ministry's website reports on the latest news, background information and links to all environmental policy issues.

▶ **http://www.umweltbundesamt.de**
The German Environmental Agency is an invaluable source of scientific information on environmental protection, including one of the most comprehensive environmental databases in Germany.

▶ **http://www.bfn.de**
"International nature conservation" is one of the priority areas of the Federal Office for Nature Conservation (BfN).

▶ **http://www.bfs.de**
The Federal Office for Radiation Protection (BfS) provides information on international radiation protection, and the disposal and transportation of nuclear wastes, among other things.

European institutions

▶ **http://europa.eu.int/comm/environment/index_de.htm**
The website of the European Commission's DG Environment contains information on EU environment policy and current projects at EU level.

▶ **http://www.eea.eu.int**
The European Environment Agency informs on the environmental situation in Europe and offers a wide range of data on European environmental policy.

Global institutions

▶ **http://www.unep.org**
The website of the United Nations Environment Programme UNEP contains information on global environmental policy and contains links to many of the secretariats of UN environment conventions.

▶ **http://www.unece.org/env/welcome.html**
The United Nations Economic Commission for Europe (UN ECE) is active in many areas of environmental policy and was the driving force behind numerous environmental conventions.

▶ **http://www.un.org/esa/sustdev/csd.htm**
The UN Commission for Sustainable Development offers a wide range of information on international sustainability policy and its cyclical two-year themes.

Further topics

▶ **http://www.eu2007.de**
Federal Government of Germany's website on the EU Presidency 2007.

▶ **http://www.g-8.de**
Federal Government of Germany's website on the German G8 Presidency 2007.

▶ **http://www.g7.utoronto.ca**
G8 information centre of the University of Toronto with summit declarations and other documents and information on the G8 process.

▶ **http://www.ecc-platform.org**
Information platforms "civil crisis prevention and Environment and resources"; the information is ordered according to both region and sector.

▶ **http://www.atmosfair.de**
Website for climate-conscious air travel.

▶ **http://www.viabono.de**
This website offers a comprehensive guide to eco-conscious travel in Germany.

▶ **http://www.blauer-engel.de**
"Blauer Engel" – "blue angel": the world's first environmental label for products and services, acting as a practical guideline for consumers in their choices and purchase decisions.

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