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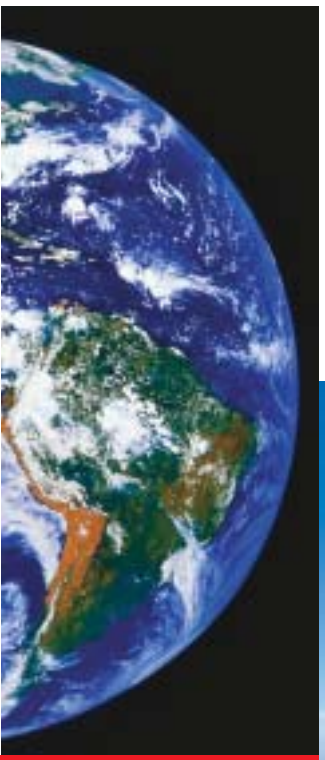

Report of the Federal Government on education for a sustainable development

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Report of the Federal Government on education for a sustainable development

This brochure is a translation of Bundestag document No. 14/7971 from January 3, 2002. The report was approved by the federal cabinet on December 12, 2001 and forwarded with an accompanying letter from the Federal Ministry of Education and Research dated December 17, 2001 to the Bundestag as required by the resolution passed by the German Bundestag on June 29, 2000 (Bundestag document No. 14/34319).

1 Introduction

As directed by the German Bundestag in June 2000 (Bundestag document No. 14/3319), the following report examines the current state of education for sustainable development and the progress made in this field since publication of the First Report on Environmental Education in the autumn of 1997 (Bundestag document No. 13/8878).

Education for sustainable development is more than environmental education. In contrast to environmental education and development education, it takes a broader and more comprehensive approach that integrates environmental, economic and social aspects (the so-called sustainability triangle). Education for sustainable development is to contribute to the implementation of the societal precept of sustainable development as defined by Agenda 21. Its aim is to put people in a position to play an active role in shaping an ecologically sustainable, economically efficient and socially just environment, while remaining mindful of the global dimension. Using suitable content, methods and learning structures, education for sustainable development has the task of initiating learning processes – in all areas of education – which help individuals acquire the analytical and evaluation skills and the ability to act that this requires.

The following report is based on the premise that education is generally an important prerequisite for ensuring society's future viability – a concept that receives considerable attention in connection with the implementation of the principle of sustainable development. The purpose of this report is not however to present a picture of the overall education system's efficiency or quality, but rather to examine the question of how much progress has been made in incorporating the principle of sustainable development into education.

Sustainable development is a subject not only for education policy but also for environmental protection policy, development policy, economic policy, social policy, health policy, consumer protection policy, youth policy, finance policy and others. It is likewise a subject for business, associations, foundations, non-governmental organizations (NGOs) and other such institutions. It must be remembered here that Germany's Basic Law (constitution) allows the country's *Länder* (federal states), local governments and semi-autonomous institutions such as universities considerably more scope of action in the education field than it allows the federal government.

This report details the activities which the German government pursued in connection with education for sustainable development between the autumn of 1997 and the autumn of 2001. Additionally, it outlines the present status of education for sustainable development in the various education sectors. This includes non-formal education activities.

The German government's *Report on Education for Sustainable Development* contains the six sections:

- Background
- Developments in individual education sectors
- Government activities
- Foundations
- Other activities
- Summary and outlook for the future.

This report's account of the activities pursued by the individual *Länder* in connection with education for sustainable development drew upon the report which the Bund-Länder Commission for Educational Planning and Research Promotion (BLK) submitted to the heads of the federal and *Land* governments regarding the implementation of the Education for Sustainable Development Guidelines which the BLK adopted on October 29, 2001 (BLK Report 2001). Other sources included expert reports written especially for this report and extensive Internet research.

2 Background

The German government has committed itself to systematically integrating the principle of sustainable development as elaborated by Agenda 21 into its policies and concomitantly into various policy fields. It has firmly underscored this objective by supporting the Millennium Declaration issued by the member states of the United Nations in September 2000 and initiating steps in 2001 to develop a national sustainability strategy.

In order to implement the principle of sustainable development, it is necessary to modernize government and society, safeguard natural resources, maintain the ability to compete in the economic arena, and ensure the equitable distribution of work, income and opportunity as objectives of equal ranking. Education – alongside research, science and technology – is of vital importance in this connection. Innovation, new knowledge and its intelligent use will be vital to mastering the environmental, economic, social and cultural challenges of this century.

The Education for Sustainable Development Guidelines which the BLK adopted in the autumn of 1998 provide an important starting point for the continual development of a viable education policy for Germany's federal and *Land* governments (BLK 1998). These guidelines spell out the tasks involved in education for sustainable development in the individual areas of day care, primary and secondary education, vocational training, tertiary education, general continuing education and out-of-school education. They also outline measures to be taken at organizational, innovation and transfer level. In addition, these guidelines enumerate key skills that must be taught in the various fields of education.

2.1 The political framework for educating for a sustainable future

International initiatives – such as those launched by the United Nations, prompted by G8 economic summits, adopted by the OECD and carried forth in the European

Union – are important starting points for ensuring a positive reception for sustainable development in Germany and, consequently, for education for sustainable development as well.

2.1.1 The idea behind Agenda 21 The concept of sustainability

In the years since the United Nations Conference on Environment and Development (UNCED) was held in Rio de Janeiro in 1992, the term "sustainable development" has become a precept for balanced societal modernization processes. Sustainable development is generally understood as development that "satisfies the needs of present generations without risking the possibility that future generations will not be able to satisfy their needs" (HAUFF 1987). This goes hand in hand with the call to bring environmental interests together with development interests and to link environmental objectives with social goals in order to meet basic needs and improve the living standards of all. This requires a competitive, functioning economy. The concept of sustainability also involves the notion of equity – with respect to balancing interests between generations as well as within individual generations (ALTNER/MICHELSEN 2001). As a rule, sustainable development strives to link environmental protection, economic growth and social development with one another. The following fundamental principles are hallmarks of sustainable development:

– The principle of intra-generational responsibility which requires today's generation to respect the interests of future generations,
– The integration principle which calls for interlinking social, economic and environmental objectives with one another and
– The participation principle which aims at boosting the sense of responsibility among the various actors (business, science, social groups, individual citizens) involved in developing and implementing sustainability strategies.

Despite the unabated intensity with which it is being pursued, the quest for sustainable development is still limited to a relatively closed circle (BRAND 2001) consisting primarily of the political sector, science, business and non-governmental organizations (NROs). Success achieved to date has yet to be sufficiently communicated. It therefore comes as no surprise that the subject of sustainability tends to play a subordinate role in the media and public awareness. One exception to this are the numerous local and regional discussions on sustainability which – building on Agenda 21 – are being conducted in the form of Local Agenda 21s. These discussions have led to new alliances and innovative projects.

Personal and societal values – in addition to technical innovation and "efficiency strategies," "consistency strategies" and "sufficiency strategies" – are of central importance to achieving sustainability. Necessary changes in production methods and consumption patterns automatically raise the question of whether such change can be brought about through political means and whether society would accept it. Ensuring that environmental attitudes and behavior remain stable and consistent takes on added importance because attitudes and behavior can provide guideposts for thought and action over longer periods of time.

The 1992 Rio Conference

Most countries around the world took up the impetus generated by the UN Conference on Environment and Development held in Rio de Janeiro in 1992. Some 180 nations signed Agenda 21, agreeing to observe the principle of sustainable development in their overall policy-making activities. Agenda 21 is a global action plan for translating the sustainability principle into concrete action. Its 40 chapters contain specific instructions for achieving this. Chapter 36 – Promoting Education, Public Awareness and Training – is important for education for sustainable development. This chapter emphasizes both formal and non-formal education. In the area of formal education, it recommends developing "strategies aimed at integrating environment and development as a cross-cutting issue into education at all levels." It also provides the basis for "global learning." Chapter 36 additionally emphasizes the need to include environmental interest groups and non-governmental organizations in planning processes and the need to foster their projects.

Chapters 24 (Women), 25 (Children and Youth) and 28 (Local Authorities) are also of relevance. The preamble to Part III of Agenda 21 calls for broad public participation in decision-making processes. Only through participation is it possible to bring about the type of behavior among individuals and social groups that is necessary for realizing sustainable development. Consequently, participation must be considered a fundamental element of sustainable development and education for sustainable development.

2.1.2 The international level

Commission on Sustainable Development (CSD)

Following a recommendation made in Agenda 21, the United Nations established the Commission on Sustainable Development (CSD) in 1993 to ensure that Agenda 21 is effectively implemented. The Commission is a functional commission of the UN Economic and Social Council (ECOSOC). The Federal Republic of Germany is one of 53 member states that have been elected to serve on the Commission. The CSD's various responsibilities include monitoring and reporting on the implementation process throughout the world, developing proposals for fostering sustainability, and advancing a dialogue and encouraging networking between all relevant actors. The CSD systematically deals with individual Agenda 21 topics at annual conferences. The CSD's tenth session in 2002 will take stock of the progress achieved in implementing Agenda 21 since the 1992 Earth Summit in Rio and prepare the World Summit on Sustainable Development scheduled to be held in Johannesburg, South Africa, in September 2002.

The CSD adopted wide-ranging resolutions on education and communication at its sixth session in 1998. It also approved an extensive work program that calls upon governments to incorporate sustainable development objectives into curricula at all levels of education and supports their resolve in this connection. The CSD's sixth session also stressed, *inter alia,* the indispensable contribution that universities make to life-long learning processes – particularly with regard to changing behavior patterns – through the role they play in education activities aimed at sustainable development. It also noted deficits in the science field and called upon governments to develop strategies for strengthening science as a model for sustainability and for closing the communication gaps between scientists, policy makers and the general public.

The CSD additionally called for incorporating appropriate instruction material on sustainable development into training programs for journalists, engineers, managers, physicians, lawyers, scientists, economists, administrators and numerous other occupational groups. Special importance is attached to supporting interdisciplinary research programs (including such programs with developing countries) as a means of improving collaboration between scientists. As the CSD sees it, cross-disciplinary courses should be made available to all students. New partnerships and contacts should be established with business, other segments of society and all countries with an eye to fostering an exchange of technology, know-how and knowledge. The 1998 World Conference on Higher Education also dealt with this latter point. It too came to the conclusion that higher education's success in realigning the thrust of its research and teaching activities depends upon its capacity to work on a flexible, interdisciplinary basis and, concomitantly, its capacity to collaborate with non-university institutions (UNESCO 1997).

During the period covered by this report, the CSD had various indicators for sustainable development tested; these indicators were developed to help monitor the progress made in achieving sustainable development. The Federal Republic of Germany was one of 21 countries which participated in testing this indicator system. This work produced a set of 218 indicators which cover the environmental, social and economic dimensions of sustainable development. The set also includes indicators for measuring levels of education (BMU 2000).

UNESCO

The UNESCO is the organization within the United Nations that is responsible for education and science matters. As such, it plays an important role in education matters. It has taken on the job of task manager for Chapter 36 of Agenda 21. In this capacity, it published in 1997 the document *Educating for a Sustainable Future: A Transdisciplinary Vision for Concerted Action* in which it spells out the principles involved in education for sustainable development. As task manager, it does public awareness work to promote the implementation of Chapter 36 of Agenda 21, develops instruction material and strives for an international networking of education activities. More recently, UNESCO submitted a report on the progress made in educating for a sustainable future since the Rio Conference (UNESCO 2001). This report will be used to prepare the World Summit on Sustainable Development (Rio + 10) to be held in Johannesburg in September 2002. As part of its Environment, Population and Social Development activities, UNESCO assists the Rio follow-up process through two programs in particular. The first of these is the Program on Man and the Biosphere (MAB) which it adopted in 1970 as the first intergovernmental environmental program. Taking an interdisciplinary, ecosystem-based and participatory approach, the MAB Program focuses on researching and developing the relationship between people and their environment at international, national and local level. Today, the MAB Program is part of UNESCO's contribution toward the implementation of the decisions taken at the 1992 Rio Conference on the preservation of biological diversity, strategies for sustainable use, fostering the dissemination of information and environmental education, the establishment of training structures, and a global environmental monitoring system. The Federal Republic of Germany has been actively involved in the MAB Program from the start.

The MAB Program's primary focus is on creating models for managing biospheres in accordance with the principle of sustainability and on testing and assessing them in representative landscapes. The program's main instrument is UNESCO's recognition of biosphere reserves. The aim of these efforts is to safeguard large, representative parts of natural and cultural landscapes in all biogeographical regions of the earth in a worldwide network. These reserves are to serve as models and testing areas for sustainable development. UNESCO has recognized 14 biosphere reserves in Germany to date. Biosphere reserves differ from nature reserves and protected landscape areas in that they integrate people, their economic interests and behavior patterns.

The program is implemented by MAB National Committees that are set up by the governments of MAB member states. Germany set up a new National Committee in March 2000. This committee consists of 14 high-level scientists and practitioners with expertise in the fields covered by the program. Germany's Federal Ministry for the Environment, Nature Conservation and Nuclear Safety chairs the committee. The Federal Agency for Nature Conservation (BfN) provides its secretariat.

In accordance with current UNESCO resolutions, Germany's MAB National Committee will work on the following during its term of office which runs through 2003:

- The continued development of the concept of biosphere reserves as model landscapes,
- Sustainable management in biosphere reserves,
- The preservation and sustainable use of biological diversity,
- Biosphere reserves as places of learning for environmental education purposes, and

– The UNESCO's International Hydrological Program (IHP).

The other UNESCO program to be mentioned here is the Management of Social Transformations (MOST) international program which was adopted in 1993 to shape social change. MOST's primary focus is on the international transfer of scientific information and the use of this information to develop political strategies in key areas of socially and environmentally sustainable development. The program gives center stage to urbanization and sustainable urban development issues, international comparative projects aimed at environmental and social relationships, and socio-cultural and economic processes. MOST focuses its research on three fields: coping with change in multicultural and multi-ethnic societies; cities as localities with accelerated social transformation processes and migration issues; and coping at local and regional level with economic, technological and environmental transformation. An international and interdisciplinary approach is essential to the projects conducted as part of the MOST Program. Findings are processed with a view to implementing them at political level.

MOST is supervised by an Intergovernmental Council (IGC) and a Scientific Steering Committee (SSC). The IGC has 33 members including the Federal Republic of Germany. It decides the program's priorities. The SSC assists the program. It ensures the program's scientific quality, approves project applications and evaluates research findings. UNESCO funds the program structure and provides its secretariat. It also provides knock-on financing and raises additional external funds.

The German government strongly supports the work done by the CSD and UNESCO.

Organisation for Economic Co-operation and Development

In May 1998, the Organisation for Economic Co-operation and Development (OECD) whose members comprise the world's most important industrialized nations added sustainable development to its list of key considerations for its member states' political strategies. The policy report published in 2001 under the responsibility of the OECD Secretary-General contains a summary of how sustainable development was dealt with inside the OECD and a list of its political recommendations (OECD 2001). A multi-part analytical report detailed the issues and policy fields dealt with by the OECD.

In this way, the OECD's activities also contribute to a broader political discussion of the concept of sustainable development.

European Union

At European level, the European Union (EU) adopted the principle of sustainable development with its signing of the Amsterdam Treaty in 1996. In its conclusions of December 20, 1996, regarding a strategy for life-long learning, the Education Council of the European Union designated sustainable development as a challenge for education and training. As a consequence, EU education programs must also take the principle of sustainable development into account.

The Lisbon European Council held in the spring of 2000 set itself the goal of making the European Union "the most competitive and dynamic knowledge-based economy in the world" in the course of the coming decade. In its conclusions, it also presented a strategy for sustainable development in the areas of employment, economic reform and social cohesion. These conclusions place special emphasis on several policy fields of great importance to future developments in Europe such as education and research, public health, poverty and social exclusion, demographic development in light of the Union's ageing population, employability, the EU's enlargement to the East, and continued democratization. In the environmental protection field, the new EU strategy focuses primarily on climate change, the protection of natural resources, and pollution caused by traffic.

In June 2001, the European Council of Göteborg adopted a long-term sustainability plan that links various policy fields with sustainable economic, social and environmental development. This concept contains concrete proposals for improving the European Union's policies; it also outlines targets and specific measures for achieving stipulated objectives. The Göteborg European Council agreed upon a strategy for sustainable development and added a sustainability dimension to the decisions it took in Lisbon regarding employment, economic reform and social cohesion.

The European Union submitted a position paper on education and awareness raising in preparation of the CSD's 1998 annual session. According to this paper, education is the key to a more equitable and responsible society. The fundamental aspects of education for sustainable development are detailed in 15 points. These include the necessity of integrating environmental, social and economic aspects, and the promotion of life-long learning. The paper emphasizes that education for sustainable development goes beyond simply disseminating knowledge and must involve participation and reflection on consumption and behavior patterns. It underscores the necessity of structural change – through, for example, new partnerships between educational institutions, NGOs and business – and explains that education for sustainable development requires structural change. The paper also proposes following up the current Eco-School campaign with the certification of educational institutions that are geared to sustainable development.

The importance of education for sustainable development was underscored once again at the 1999 Conference on Environmental Education and Training in Europe. The background paper *Environmental Education and Training in Europe* was drafted as part of the preparations for this conference. This paper describes the status of environmental education and training within the context of the su-

stainability discussion being conducted at European level and outlines possible avenues for the European Commission. The paper cites in particular the management of networks, support for innovative pilot projects, integrating the concept of sustainability into other disciplines and into further vocational training, and developing standards for education and training for sustainable development.

Mention is also to be made in this connection of the European Community's Sixth Environmental Action Programme which assigns environmental education a central role in the implementation of the sustainability concept. The activities undertaken by Directorate General XI (Environment, Nuclear Safety and Civil Protection) which assisted more than 100 environmental education projects during the period 1993 through 1997 (EC 1997) should also be noted here. In addition, programs such as Socrates, Leonardo, Youth for Europe (DG Education: Education, Training and Youth) and the European Social Fund (DG Employment: Employment, Industrial Relations and Social Affairs) also play an important role.

Interfaces with agreements adopted at various UN conferences are evident in European policies. Sustainability and the issue of gender equity which represents a form of intragenerational equity share points of contact. As a result, parallels are evident between the demands set forth in Chapter 24 of Agenda 21 and those outlined in the Final Document of the Fourth World Conference on Women held in Beijing in 1996. Based on these programmatic targets, general strategies for gender equity – such as gender mainstreaming which has become the key concept behind European gender equity policy – were put into action.
At European level, the German government has also provided political and financial assistance for the Council of Europe's second North-South campaign Global Interdependence and Solidarity: Europe against Poverty and Social Exclusion. The signing of the Arhus Convention in 1998 is to be mentioned in this connection. The topics dealt with in this document include public participation and public access to environmental information.

2.1.3 National-level efforts

Political initiatives

When developing its environmental protection and sustainability policies, the German government draws on the expertise of interdisciplinary scientific working groups. Various bodies such as the German Bundestag's Study Commission on the Protection of Mankind and the Environment, the German Council of Environmental Advisors (SRU) and the German Advisory Council on Global Change (WBGU) provide important guidelines for education and research for sustainable development through their reports and recommendations, as in the case during the reporting period covering the first Environmental Education Report (see Section 2.2.5). The German government took important steps toward developing a national sustainability strategy with its creation of a State Secretaries' Committee for Sustainable Development and its appointment of a Sustainability Council in the spring of 2001 (see Section 4.1.1).

Germany's parliament was a primary source of impetus for implementing the principle of sustainability in general and in the education field in particular. The German Bundestag adopted a resolution on education for sustainable development in June 2000 (Bundestag document No. 14/3319), also instructing the government to submit its environmental education report – which must be issued once each legislative period – as a report on education for sustainable development in the future. The resolution calls upon the government to take concrete steps to foster education for sustainable development and, at the same time, integrate environmental and development education and support the implementation of the Education for Sustainable Development Guidelines developed by the Bund-Länder Commission for Educational Planning and Research Promotion (BLK). The resolution also stresses the networking of private initiatives, the need for a national sustainability strategy, continuing education measures for agencies and ministries, and financial assistance for environmental behavior research. Education for sustainable development was also the focus of a major interpellation regarding education and research policy aimed at sustainable development which the SPD and Alliance 90/The Greens parliamentary groups in the German Bundestag submitted on May 9, 2001. In its reply, the government spelled out the role that education and research play in sustainable development and outlined the activities that had been undertaken in these areas (Bundestag document No. 14/6959).

At *Land* level, the minister presidents' 1998 resolution on Coordination and Cooperation in the Development Cooperation of the *Länder* of the Federal Republic of Germany with its emphasis on development information and education work is important. The BLK's report on the status of efforts to implement the Education for Sustainable Development Guidelines which it submitted to the heads of Germany's state and federal governments in October 2001 outlines the activities the *Länder* have pursued in this area (see Section 4.1.4).

In its resolution on a national sustainability strategy, the 56th Environmental Ministers' Conference held on May 17 – 18, 2001 underscored the need for professional, coordinated public relations work for acquainting various social groups with the basic concept of sustainable development. The conference attached particular importance to environmental education. The resolution also calls for subjecting decision aids for sustainable consumer behavior to a critical examination and continued development. This is to include the development of interactive software which offers customized information and incentives that encourage sustainable lifestyles.

Activities to foster education for sustainable development

The German government has fostered the development of education for sustainable development by providing fi-

nancial assistance for research and development (R&D projects, pilot projects, funding programs) and by commissioning special expert's reports. In doing so, it has generated important impetus.

Of the activities undertaken during the reporting period, special note is to be made of the BLK's Program 21: Education for Sustainable Development which the federal government also helps fund. Fifteen of Germany's *Länder* are participating in this program (see Section 4.2.1). Mention should also be made of the Learning and Shaping the Future – Education for Sustainable Development conference which the BLK held in June 2001. Recommendations for developing education for sustainable development were drafted at this meeting (see Sections 4.1.4 and 4.2.1).

In addition to this, the Association of German Development NGO's (VENRO) held the Education 21 – Learning for Fair and Sustainable Future Development conference in September 2000 with assistance from the Federal Ministry of Economic Cooperation and Development (see Section 4.2.3).

Impetus from non-governmental organizations

Non-governmental organizations (NGOs) had a marked influence on the sustainability discussion in the Federal Republic during the period under review. Non-governmental actors at federal level which directly represent the cause of education for sustainable development include the German Association for Environmental Education (DGU), the Association of Environmental Education Centres (ANU), the National Association of Publicly-Funded Training Centers in the Nature Conservation and Environmental Protection Fields (BANU) and the Association for Environmental Vocational Training (GbU). These organizations agreed on an Education Program for Sustainable Development in the Federal Republic of Germany in 1998. This program was conceived as a building block in the continuing development of environmental education as set forth by Agenda 21. Germany's churches and development-oriented NGOs have also dealt with education issues within the context of sustainable development (through their organization VENRO). Their declaration of December 2000 stresses the role of global learning and emphasizes globalization as an educational challenge (VENRO 2000).

2.2 Societal framework

2.2.1 Environmental and developmental awareness

Educational initiatives involving sustainability and innovation in educational practice can be implemented only when they take into account what the general public in Germany thinks about the environment, development and issues of concern for the future, how the public behaves, areas that have a need for information and the prevailing

Key political activities and initiatives 1998 – 2001

Year	Activities and initiatives
1998	– Germany's minister presidents adopt a resolution on Coordination and Cooperation in the Development Cooperation Activities of the *Länder* of the Federal Republic of Germany. – BLK's Education for Sustainable Development Guidelines – The Sustainability Concept (final report) is issued by the German Bundestag's Study Commission on the Protection of Mankind and the Environment.
1999	– Motion by the SPD and Alliance 90/The Greens parliamentary groups regarding education for sustainable development (Bundestag document No. 14/1353) – Report on the BLK's Education for Sustainable Development pilot project – BLK's Program 21: Education for Sustainable Development pilot program (duration: 1999 – 2004)
2000	– Resolution adopted by the German Bundestag on Education for Sustainable Development (Bundestag document No. 14/3319) – The VENRO Conference on Education 21 – Learning for Fair and Sustainable Future Development
2001	– The German government sets up the State Secretaries' Committee for Sustainable Development and appoints the German Council for Sustainable Development. – Major interpellation by the SPD and Alliance 90/The Greens parliamentary groups regarding Education and Research Policy for Sustainable Development (Bundestag document No. 14/6022) – BLK conference Learning and Shaping the Future - Education for Sustainable Development – The German government's reply to the major interpellation by the SPD and Alliance 90/The Greens parliamentary groups regarding Education and Research Policy for Sustainable Development (Bundestag document No. 14/6959) – BLK report to the heads of Germany's federal and *Land* governments on the status of efforts to implement the Education for Sustainable Development Guidelines

mood among various age groups. Corresponding data has been gathered and analyzed at regular intervals for years as part of the socio-environmental research conducted on behalf of the German government. Additionally, the European Commission, the Federal Ministry of Economic Cooperation and Development and a number of major non-governmental organizations have also conducted representative surveys on the public's attitude toward development policy issues.

Environmental awareness

The Federal Ministry for the Environment, Nature Conservation and Nuclear Safety and the Federal Environmental Agency commissioned a representative survey on the level of environmental awareness in Germany every year between 1991 and 1995 and then every other year beginning 1996. The surveys conducted between 1991 and 1998 are the subject of a comparative study which examines the changes that took place during this period and the most important developments for the 1990s (PREISENDÖRFER 1999). Two trends were particularly discernible through 1998. Firstly, compared to other issues, environmental protection has slid in the rankings in terms of importance. Secondly, the willingness to pay for environmental protection is on the decline. Reasons given for this include the economic problems (unemployment) that grew during the 1990s and the public's feeling that environmental conditions in Germany improved during the course of the decade. This was mentioned particularly often by people living in Germany's eastern states who cited a marked improvement in their environmental situation.

The latest survey conducted in 2000 qualified these trends (BMU 2000). Its findings indicate that the decline in environmental awareness appears to have bottomed out. The general public supports environmental policy measures and agrees with the government's environmental protection policy. Compared to the 1998 survey, the replies to most of the repeat questions indicated an increased appreciation for environmental protection. Climate protection is considered to be a particularly important task. In the public's perception, there has been an improvement in the quality of the environment in Germany. However, the public's assessment of current conditions exhibits a marked dichotomy. The respondents viewed the situation in Germany in general and in their immediate area in particular as being much better than the quality of the global environment. Concerns about health and future generations fuel positive attitudes toward environmental protection. Families with children – particularly small children – are more environmentally-minded. The willingness to pay for better environmental protection tends to manifest itself in the purchase of environmentally friendly products.

Even though few people are familiar with the term “sustainability” (13% of the population says it is acquainted with the term), issues and topics associated with the word sustainability meet with a positive response. These include equity between rich and poor countries and between generations, and the maxim of not using more resources than can be regenerated. Fifteen percent of the population has heard of Local Agenda 21.

Attitudes toward development issues

Compared to environmental subjects, the public has less interest in the problems of distant countries or in Germany's development policy and development cooperation activities. The European Commission (EUROBAROMETER), Germany's Federal Ministry of Economic Cooperation and Development and a number of larger German non-governmental organizations have commissioned surveys in this connection (e. g., KINDERNOTHILFE 1994). An analysis of this data reveals the following patterns in the German public's knowledge of and opinions on development policy issues:

– The economic, ecological and political importance of developing countries is underestimated. Vast sections of the German public cannot imagine that changes in developing countries can have an impact on German society. The German public vastly underestimates how important the countries to the south are for the European Union's export market. On the other hand, it greatly overestimates the USA's importance for Germany's export trade. The public is not aware of the extent of the economic interdependence between the Third World and Europe – or between the Third World and Germany. The development process in the countries of the southern hemisphere is lumped together and given a blanket negative rating. The German public generally associates words like “poverty,” “hunger,” “human rights abuses” and “dictatorship” with developing countries. Its picture of the Third World is generally not nuanced.
– Germany's contribution to development cooperation is overrated (due to a mistaken sense of omnipotence). Twenty-six percent of the German public overestimate the percentage of the EU's budget that goes to development cooperation, placing it at three to ten times the actual figure. Thirty percent overestimate the percentage of the German government's budget that is allocated for development cooperation by five to 15 times the actual share. Large sections of the German public assume that in the face of so much poverty and given the enormous expenditures made, the aid provided must not be accomplishing its purpose. The public also underestimates the avenues for action open to individuals. A sense of helplessness as indicated by statements such as “What difference can simple folks like us make?” is expressed in regard to both development problems and environmental problems.

The 1998 UNDP study which analyzed more than 30 surveys conducted in OECD countries added demographic factors to the equation. According to this study, younger respondents have a positive attitude toward development cooperation. In Germany, 18-to-24-year-olds expressed the strongest support for development cooperation. All in all, the findings are quite encouraging. There are no signs of any “aid fatigue” among the population as a whole.

2.2.2 The importance of non-governmental organizations

Non-governmental organizations (NGOs) actively and effectively participate – often on a national scale – in the discussion on developing and implementing the principle of sustainable development. They also organize corresponding education measures. As indicated by surveys, NGOs enjoy a high level of credibility among the public. Furthermore, thanks to their "on-the-ground" activities, NGOs often reach target groups which are harder for educational institutions to reach. By communicating topical subjects, NGOs help make people more aware of them in their everyday lives and also foster greater acceptance of successful environmental protection, nature conservation and development policies. The many educational activities they offer underscore how important NGOs are in both the formal and non-formal education sector – something that was often underestimated in the past.

The German government acknowledges the enormous importance of the role NGOs play in connection with education for sustainable development. It supports the work being done by NGOs by funding many of the education projects they conduct in this area in Germany. In doing so, it contributes to getting as many societal groups as possible involved in implementing the integrative objectives of the sustainability principle, as called for by Agenda 21.

The last few years have seen growing professionalization not only in environmental protection and nature conservation but also in the development field. This is evidenced by, *inter alia,* the NGOs' increased willingness to collaborate and communicate. In the course of this process, they have become important contacts for business, government and international organizations. NGOs are also important for the innovative ability of institutions and for the development of educational offerings that deal with sustainable development. It is against this backdrop that the German government funds NGO activities, particularly through the Federal Ministry for the Environment, Nature Conservation and Nuclear Safety and the Federal Ministry of Economic Development and Cooperation, and supports a number of NGO activities such as publicity or educational events and the development of information material on various aspects of sustainable development (see Section 4.2).

The German government gave special attention to NGOs in eastern Germany during the period under review. Having been established after 1989, most of these NGOs – compared to associations and organizations in western Germany – have special financing problems.

2.2.3 The role of science and research Innovation capabilities

The German government holds that science and research are of central importance for education for sustainable development because innovation – in other words, new knowledge and its intelligent application – will be key to mastering the ecological, economic, social and cultural challenges of the 21st century. For this reason it is essential to step up the transfer of research findings to work being done in the education field (see Section 4.1.3).

The German government recast its research policy in 1998 to reflect the principle of "research for people." Based on this new orientation, new technologies are to serve mankind and help safeguard people's quality of life, protect natural resources and ensure economic strength. This strategic orientation toward research for people spans a broad range of areas which extend from genome and health research to construction and housing, transport and production systems of the future all the way to the intensive debate on the ethical and social implications of new technologies. In this connection, the German government also established a new funding priority – Innovation and Technology Analysis – in which the opportunities and risks of new technologies are evaluated in the public forum.

Measures to foster "sustainable, environmentally-sound development" comprise a key element in Germany's research-for-people policy. These measures began with the Research for the Environment program which focused on regional and global sustainability and sustainable management. Socio-environmental research and peace and conflict research were added to this program during the government's re-alignment of its research policy in 1998. Peace and conflict research has since been institutionalized with the founding of the German Foundation for Peace Research.

Another precept followed by German research policy of the past and especially the present is to foster innovation aimed at generating prosperity and new jobs. Sustainable worldwide growth is one of this policy's underlying themes. Research has the job of helping ensure that any further prosperity is generated in ways that are compatible with preserving the health of our natural resources. Growth-driven prosperity requires innovation. The German government's research policy is aimed at setting the stage for and jump-starting this kind of innovation, and at organizing and steering its application to ensure that it is in line with the principle of sustainable development.

When research is geared to the principle of sustainability, the following tasks become particularly important: surmounting the division between basic and applied research, orienting research toward fields in which a need for sustainable development exists, establishing research that spans several fields of technology, integrating social stakeholders into the process of developing and spelling out research issues and taking into consideration the possible long-term implications of innovation. In addition to this, gaps in our knowledge – in the basic research field, for example – have to be closed and supporting scientific research must be done to assist pilot projects. Doing this reveals a large area filled with cross-currents in which research is being conducted in the context of sustainable development, with particular importance being assigned to interdisciplinarity and transdisciplinarity.

Research on environmental education for sustainable development

The importance of "environmental education research" grew in the 1990s. The need for an interdisciplinary environmental education research program has been discussed repeatedly since the mid-1990s. The report *Environmental Education as Innovation. Surveys of and Recommendations for Pilot Projects and Research Projects* (DE HAAN et al. 1997) which was commissioned by the Federal Ministry of Education and Research also considers an environmental education research program to be necessary due to the fact that environmental education research is given less priority than the environmental research being conducted in the human sciences field and will urgently need more empirical information in the future. This also applies to education for sustainable development. The above report also notes that if research is to improve, the relevant fields at Germany's universities and other research facilities will have to be expanded and funded.

Environmental education research serves a number of tasks. It has to monitor, analyze and evaluate the standing of environmental education, derive theories from actual practice and develop theories for "in the field" use. It also has to create and test methods for studying environmental education. The range of topics covered by research work done during the period under review was dominated by the questions of how the concept of sustainability is establishing a foothold in environmental education and how it could be grounded in theory.

The German Educational Research Association's (DGfE) Environmental Education Working Group has developed a framework for environmental education research and research on education for sustainable development in Germany. In late 1997, it adopted a plan for a research program that is based extensively on Chapter 36 of Agenda 21 and takes into account the standing, direction and shortcomings of environmental education research done to date (DE HAAN/KUCKARTZ 1998, http://www.service-umweltbildung.de). Innovative environmental education research concentrates first and foremost on the question of how environmental education can pick up and continue the discussion on sustainability.

The initiatives launched by the German Educational Research Association's Environmental Education Working Group to bring environmental education research and environmental awareness research closer together should be viewed as initial steps toward interdisciplinary environmental education research or, to be more precise, research for sustainable development. Joint conferences with the German Sociological Association or its Environmental Psychology and Environmental Sociology departments made a substantial contribution toward this in 1999 and 2000 (UBA 2000).

2.2.4 Provinces and actors

Education for sustainable development is a topic not only for education policy but also for environmental policy, development policy, economic policy, technology policy and social policy. In addition to this, education for sustainable development is a part of the many complex, private-sector activities and initiatives organized by business, associations, organizations, churches, foundations and NGOs working in the environmental protection, development, social, cultural and economic fields.

In the public sector, Germany's Basic Law (constitution) grants the country's *Länder* extensive autonomy in cultural and educational matters. Consequently, they are generally responsible for education for sustainable development. The federal government has legislative competence in the area of vocational training (Article 74, No. 13, Basic Law) and for the general principles of higher education (Article 75, No. 1a, Basic Law). Further, the federal government and the *Länder* collaborate in the discharge of joint responsibilities on the basis of Articles 91a and 91b of the Basic Law. The Bund-Länder Commission for Educational Planning and Research Promotion (BLK) serves Germany's federal government and *Länder* as a joint platform for sparking innovative developments in the education field (see Section 4.1.4).

At federal level, government responsibility for matters involving education for sustainable development is assigned primarily to the following bodies:

- The Federal Ministry of Education and Research, including the Federal Institute for Vocational Training (BIBB) in conjunction with the competent ministries and in close concert with unions and employers' associations,
- The Federal Ministry for the Environment, Nature Conservation and Nuclear Safety, along with the Federal Environmental Agency (UBA) and the Federal Agency for Nature Conservation (BfN),
- The Federal Ministry of Economic Cooperation and Development including its implementing and front-end organizations such as the German Agency for Technical Cooperation (GTZ), the Kreditanstalt für Wiederaufbau (KfW = Development Loan Corporation), German Foundation for International Development (DSE), the Carl Duisberg Foundation (CDG) and the German Volunteer Service (DED).

Other federal ministries discharge duties in this area as well (Section 4.2).

Irrespective of basic and continuing training courses that are regulated by law, companies have a special responsibility to teach their employees sustainable management in the course of their in-house personnel development measures.

Germany's universities are semi-autonomous and therefore have a special status.

2.2.5 Policy advisors

The German government is advised by various panels of experts which frequently comment in their reports and statements on the importance of education and education

processes against the backdrop of the discussion on sustainable development.

German Council of Environmental Advisors

The German Council of Environmental Advisors (SRU, http://www.umweltrat.de) was established in 1971 as part of the German government's environment program. The council is responsible for outlining the environmental situation in Germany in periodic reports and for making recommendations for further action. It submits a comprehensive environmental report to the Federal Ministry for the Environment, Nature Conservation and Nuclear Safety every other year. It can also submit additional special reports and position papers. The council last commented on issues involving environmental education and education for sustainable development in its 1994 and 1996 environment reports. Environmental communication and the participation of social groups in political decision-making processes are important topics for the council's work. A new council was appointed on July 1, 2000. Its next environment report will be issued in the spring of 2002.

German Advisory Council on Global Change

The German Advisory Council on Global Change (WBGU) has advised the German government on policy matters regarding the preservation and development of natural resources since 1992. The council provides the government with reports on special issues involving environmental changes of global concern and offer suggestions for action in response to these changes. Besides analyzing current trends, these reports make concrete suggestions for ways to avoid undesirable developments and outline areas which require research.

The council commented in its 1993 and 1995 reports on the importance of education in view of the discussion on sustainable development. In its 1996 report, the council developed the "syndrome concept" which plays a central role in education for sustainable development today. The council discusses approaches to risk communication in its report *Strategies for Managing Global Environmental Risks* (WBGU 1999). Its recommendations are also directed at the "risk-aware citizen."

The council's reports are important for education for sustainable development in two respects: Firstly, the availability of the council's reports and special reports is not restricted to the German government or Bundestag; they have been made available to everyone through, for example, the Internet (http://www.wbgu.de). They therefore help disseminate information about sustainability. Secondly, the council's annual reports deal with issues surrounding the social prerequisites for solving global environmental problems.

The German Bundestag's Study Commission on the Protection of Mankind and the Environment

The German Bundestag's Study Commission on the Protection of Mankind and the Environment issued its final report in 1998 (Bundestag document No. 13/11200). A study commission was not set up for the current legislative period. The Study Commission discussed the education dimension and issues of environmental communication and sociological environmental research in its 1994 report *Shaping the Industrial Society* and its 1998 report The *Concept of Sustainability.* It examined issues involving changes in values and lifestyles, made distinctions between different environmental information needs and inquired into social innovation for fostering responsible action. During the current legislative period, the German government carried out important calls made by the Study Commission by initiating work on a national sustainability strategy and setting up the German Council for Sustainable Development.

German Council for Sustainable Development

Established in April 2001, the German Council for Sustainable Development has 17 members from various sections of society. Its primary tasks include drafting papers for a national sustainability strategy, proposing concrete projects for implementing it and playing a central role in the public dialogue on sustainable development. In this connection, the council also examines issues involving education for sustainable development and suitable communication strategies for conveying the principles of sustainable development to the public. It also advises the State Secretaries' Committee for Sustainable Development (www.nachhaltigkeitsrat.de, see Section 4.1.1).

The council's creation was stipulated in the Coalition Agreement between the ruling parties SPD and Alliance 90/The Greens in October 1998 and subsequently confirmed in the chancellor's policy statement.

2.3 Further conceptual development

Besides seeking ways to increase efficiency through the use of new technologies and improved production processes and fostering solutions that conserve resources and are compatible with nature, sustainable development also involves public acceptance of and support for the implementation of the comprehensive modernization process that it entails and the concept of preemptive action – in connection with, for example, training appropriately qualified experts for shaping the sustainability process. It is evident from this that both education and communication processes will be needed to help clear the way for sustainable development.

One of the tasks of education is to impart knowledge and skills which put the individual in a position to participate in and actively shape a viable and sustainable life and livelihood. The objective is not to simply train behavior patterns but rather to inculcate an inclination to act on an autonomous and self-directed basis. Education for sustainable development is supposed to develop and foster the individual's creative potential, his ability to communicate and cooperate, his problem-solving skills and ability to act. Its object is to trigger learning processes which raise awareness for ecologically tenable, economically realizable and socially acceptable action and enable correspon-

ding behavior in the individual's personal and professional life. Education for sustainable development can be provided as part of either formal or non-formal education.

2.3.1 The shift from environmental education to education for sustainable development

The discussion over environmental education broadened during the period under review to include education for sustainable development. At the same time, the concept of global learning – which was able to establish itself alongside environmental education in recent years – has moved closer to education for sustainable development. For years, environmental education gave center stage to threats to the environment. Education for sustainable development on the other hand is associated with the opportunity to modernize and shape society.

For environmental education, the sustainability discussion represents the start of a necessary reorientation – now that theorists and practitioners, following some hesitation and skepticism, have become more receptive to the implications that the concept of sustainability has for environmental education (MICHELSEN 2001). Numerous academic conferences and activities have been held in recent years to determine for environmental education, its institutions and its actors what sustainability can specifically mean for the respective level of education in the way of obligations, expanded responsibilities and changes in working methods. One outstanding example of these activities was the Education for Sustainable Development conference held at the University of Bielefeld in November 1999 with assistance from the Federal Ministry of Education and Research (HERZ/SEYBOLD/STROBL 2001).

The Bund-Länder Commission for Educational Planning and Research Promotion (BLK) provided crucial impetus for dealing with the question of what sustainability involves for education policy and educational practice with the issue of its Education for Sustainable Development Guidelines in the autumn of 1998. These guidelines work from the premise that putting the principle of sustainable development into practice will be a fundamental task for education in the future. The guidelines suggest a number of didactic principles, key skills, innovative forms of learning and the acquisition of skills in real life situations as organizational criteria for education for sustainable development (BLK 1998). Education for sustainable development is being formulated in more concrete terms and operationalized in the course of the Bund-Länder Commission's Program 21: Education for Sustainable Development which was launched in 1999 (see Section 4.2.1). Governmental and non-governmental stakeholders (e. g., associations, organizations, churches, NGOs, the private sector, municipalities) are involved in developing environmental education into "education for sustainability."

2.3.2 Development education – The second pillar

The "global learning" concept opened up an important perspective for education for sustainable development during the reporting period. Although the global angle is an important aspect of the sustainability model, it often gets pushed into the background in actual practice. *The One World / Third World in the Classroom and School* recommendation which the Standing Conference of Ministers of Education and Cultural Affairs of the *Länder* in the FRG adopted in 1997 urges a framework plan that integrates the Third World angle used in instruction with the global One World angle. The global learning concept (e. g., BÜHLER 1996; SCHEUNPFLUG/SCHRÖCK 2000) is aimed at cultivating the ability to act individually and collectively under the banner of global solidarity. Global learning should increase respect for different cultures, ways of living and views of the world, shed light on the assumptions underlying the one's own standpoints and enable people to find viable solutions for joint problems. Global learning is about intermeshing multiple aspects of global and local development issues and integrating previously separate fields of education work such as peace education, environmental education and multicultural learning.

2.3.3 Gestaltungskompetenz – The cornerstone

The Education for Sustainable *Development Funding Program* report (DE HAAN/ HARENBERG 1999) spells out what education for sustainable development means for instruction in the classroom. The report declares the teaching of *Gestaltungskompetenz* – the ability to modify and shape society and the future – to be one of education's fundamental goals.

Achieving this objective places great demands on educational institutions and other facilities. The acquisition of *Gestaltungskompetenz* brings an open future, new avenues and concrete action into reach. Teaching Gestaltungskompetenz entails questions regarding the form that economic activity, consumption and mobility can and ought to take, and what everyday life should look like in the future, as well as aesthetic considerations. The need for *Gestaltungskompetenz* can be substantiated in terms of education theory and at pedagogic level using the principle of sustainable development. This skill is geared not only to dealing with yet unknown life situations in the future but also aims at putting individuals in a position to shape the future in a responsible manner in cooperation with others.

Gestaltungskompetenz encompasses:

- Forward thinking that makes use of concepts of the future which can be based just as much on simulations, scenarios, projections, Delphi studies and risk assessments as they are on utopian schemes;
- Living, complex, interdisciplinary knowledge combined with imagination and creativity to find solutions that are based on more than just what is already well-known and well-established;
- The ability for self-design and self-action in a society with an unbroken trend toward individualization;

– The ability to shape the immediate environment on a participatory basis and to play a competent part in societal decision-making processes.

It is clear from this that rather than focusing on simply teaching different environmental behavior or making moral appeals, *Gestaltungskompetenz* is primarily about acquiring terms of reference that can guide action. The concept of *Gestaltungskompetenz* therefore places the capacity for independent judgment – which underpins the ability to take innovative, sustainability-directed action – at the heart of the innovative development of schools, universities and other educational institutions.

2.3.4 Innovation in the education field

Education for sustainable development is being implemented at various levels in Germany's educational institutions, namely, at educational, social and technical level. Efforts here focus on content and methodological and organizational aspects which educational institutions have to take into account.

Implementing education for sustainable development at educational level focuses on enabling learning experiences that engender a sense of meaning and on fostering sustainable behavior in educational institutions, families and communities. This involves a shift in the approach being taken by education – away from providing knowledge in systematic ways and toward dealing with problems and developing possible solutions to them. In addition, education must retire its traditional focus on individual subjects and open the door to the multi-disciplinary examination of complex, real-life situations. Teaching that is geared simply to passing on knowledge must be recast into an approach in which teachers and students work together to acquire knowledge and play a role in shaping the respective educational institution's environment. Furthermore, rather than having communication follow a top-down pattern, it should be replaced by a situation which allows students to participate in decisions on how they are to learn. This means making greater use of classroom projects, focusing on the broad spectrum of themes that are part of sustainable development and drawing on new venues for learning.

At social level, implementing education for sustainable development involves initiatives for developing and cultivating a culture of communication and decision-making and a social climate that is marked by mutual respect. Focus must be shifted away from isolated instructors and students and toward team structures and social continuity. Further, the practice of prescribing organizational rules from above should be re-considered. Instead, ways to negotiate binding rules with students and assign responsibility to them should be found. Education must also overcome its isolation vis-à-vis society and, in exchange, take action to shape its relations with the outside world with the aim of opening up educational facilities to society.

At technical and economic level, education for sustainable development focuses on the ecologically tenable and economically efficient use of resources. This includes energy conservation initiatives and measures and the avoidance of pollution caused by waste and traffic both inside and outside educational facilities.

2.3.5 Communication and public relations

Education for sustainable development must be viewed in conjunction with societal communication on sustainable development. The enormous importance of today's mass media and the Internet must also be included in this picture.

Education for sustainable development has a long history of cross-links with other actors in communication on sustainability, such as major environmental protection associations and development organizations. A look at current practice reveals new types of alliances between actors and increasingly professional communication on sustainable development. Educational activities are closely interwoven with campaigns conducted by communities, organizations and business. Opening up educational institutions is important for education for sustainable development and often leads to new opportunities for collaboration.

Out-of-school educational and recreational activities or offerings aimed at sustainable living, consumption and the like provide a variety of non-formal learning opportunities for all ages. Here people learn through new structures (e. g., neighborhood or borough projects) and in learning organizations such as environmental centers, eco-social projects, small and medium-sized businesses. Out-of-school education and non-formal education (e. g., through exhibitions) can decisively supplement the work being done in education for sustainable development. However, such offerings still require some serious innovation in the direction of education for sustainable development. This would include the use of new media. The Internet is becoming an increasingly important medium for information and discourse on sustainable development. Consequently, media skills constitute another fundamental element of education for sustainable development.

The biggest challenge facing communication about sustainability is to be found in acquainting the majority of the population with the concept of sustainable development. During the course of the study *Strategies for Anchoring the Sustainability Principle in Environmental Communication* (UBA 2000), experts also examined the possibility of popularizing the principle of sustainable development via public relations work or social marketing. According to their findings, a popularization strategy should fulfill a number of requirements: It should convey an attractive vision of the future and a modern model; link the reduction of stress on the environment to less stress in day-to-day life; strengthen existing potential and practices; and open up prospects for a better quality of life, better health and a better future for children. A popularization strategy of this type should be accompanied by an innovation and alliance strategy, a research strategy and an education strategy.

The German government supports projects that take people's everyday activities as their starting point (e. g., in the mobility, consumption and health fields), create new structures in these areas and offer services which make it possible for people to become acquainted with sustainability in actual practice.

As the German government sees it, communication for sustainable development has the job of informing people about the objectives of the sustainability process and the paths its takes to achieve them, awakening an appreciation and receptiveness for the process and generating broad acceptance and support for its sustainability policies. Only when sustainable development is understood and accepted by broad sections of society – and, most particularly, when individuals help shape it – can national modernization and learning processes that are pursued in connection with sustainable development be successful. In order for there to be civic participation however, people must also be in a position or be put in a position to become actively involved. Special attention must be given to including young people who are willing to become involved when given sufficient scope for acting on their own responsibility. This has been confirmed by a number of studies on motivation structures among youth and young people's willingness to become involved in society (e. g., JIM 1998; SHELL STUDY 2000; LAPPE/TULLY/WAHLER 2000; MICHELSEN/DEGENHARDT/GODEMANN/MOLITOR 2001). Education for sustainable development is also a necessary prerequisite for this and for the success of communication strategies in general.

3 Developments in education

The following sections outline the progress made in incorporating education for sustainable development in individual areas of education and on educational activities being undertaken as part of Local Agenda 21. The primary objective of this section is to provide an overview of the extent to which the principle of sustainable development has spread in educational practice. The authors make no claim to covering all activities here. This is not possible at present, largely due to a lack of comprehensive empirical studies from the individual fields of education and on Local Agenda 21.

3.1 Preschool education

Preschool education's incorporation of education for sustainable development is a consequence of Chapter 25 of Agenda 21. The legal basis for accomplishing this is to be found in the 1989 UN Convention on the Rights of the Child (which Germany ratified in 1992) which stipulates that children have a right to healthy conditions for living and their development. Volume VIII of the German Social Code (Child and Youth Services Act = KJHG) of 1990 similarly speaks of creating and maintaining positive living conditions for young people and their families and of ensuring an environment that is friendly to children and families (KJHG, Section 1, Para. 3, No. 4). Providing a binding point of reference for day care centers, the Child and Youth Services Act describes the responsibilities of kindergartens as the “caring for, educating and raising of children” (KJHG, Section 22, Para. 3, No. 2).

Education for sustainable development at preschool level has its roots in the environmental education activities pursued in the 1980s; it also contains elements of Agenda 21. Starting in the late 1990s, the focus of attention has slowly shifted to the multi-tiered concept of comprehensive environmental education which incorporated concepts from Agenda 21 as developed by the BLK guidelines. This process is however far from being finished.

The organizational principles outlined in the BLK guidelines are also of importance for day care centers. These principles also take into account the wide range of sponsor organizations and agencies that typifies the entire youth services field, these bodies' general autonomy and local conditions. In addition to these organizations' own particular view of education and childcare to be provided in day care centers, the trained staff also plays an important role in the continued development of the central idea of preschool education. As a rule, innovation in education for sustainable development (such as designing outdoor areas to be as natural as possible, practicing energy conservation, incorporating periods during which children play without toys) is the upshot of the team members' personal dedication at the individual facilities. Qualified staff members who set priorities on the basis of their own personal convictions enjoy considerable credibility and consequently offer children, parents and colleagues at other day care centers an example that keeps sight of the present and future situation of children.

The following paragraphs outline trends observed at day care centers that are illustrative of the current reorientation of traditional day care center education and which offer points of departure for establishing education for sustainable development in day care centers. These examples offer a kind of “snapshot” that highlights several trends.

A substantial number of “forest kindergartens” and “nature kindergartens” have been established in Germany in recent years in response to the fact that many children do not having sufficient contact with nature and are being subject to growing overstimulation. These facilities provide experience with looking after children in the open countryside. Germany presently has more than 50 such kindergartens, each with ten to 20 children. Another development is the ecologization of day care centers. This trend is driven by the insight that environmental awareness can be best fostered in a place that is environmentally intact and is consistent with the educational objectives being targeted. Considerations in this area revolve primarily around day care center architecture and the redesign of schoolgrounds.

Environmental quality management issues are being introduced into day care centers through Local Agenda 21 activities. In 1998, service providers, local governments and educational facilities were added to the list of bodies that are allowed to conduct eco-audits. Borrowed from the

business sector, eco-audits are a management instrument for improving environmental protection in commercial enterprises that are based in the European Community. Eco-audits open up interesting prospects for social and educational organizations such as schools and kindergartens. The number of day care centers that have taken this step is not known.

The MobilSpiel environmental project has been working since 1994 on implementing children's environmental rights. It was set up to develop visions for a future worth living, using projects with children and youth, to test models for viable modes of everyday life and to continually involve children in shaping their immediate environment. The MobilSpiel project takes the call for implementing children's environmental rights, joins it with the requirement set forth in Agenda 21 of actively involving children and youth in all levels of decision-making processes of relevance to them, and then tackles the two together from an integrated, multidisciplinary angle (KREUZINGER/ UNGER 1999). Looking to integrate environmental education into kindergarten life, the Bavarian State Institute for Pre-School Education in Munich has issued a project book that is directly concerned with Agenda 21 and calls for changes in our understanding of environmental education in day care centers (REIDELHUBER 2000).

As part of a research project that it realized with funding from the Federal Environmental Agency and the Federal Ministry for the Environment, Nature Conservation and Nuclear Safety, the University of Luneburg developed and conducted a pilot seminar with the objective of integrating education for sustainable development into the training provided for educators (STOLTENBERG/ SCHUBERT 2000). This project revolved around two questions. Firstly, the question of how to introduce instructors at vocational schools which train tomorrow's teachers to the concept of sustainability so that they can see points of departure for their own teaching activities. Secondly, the question of how education for sustainable development can become an element of teacher training activities at vocational schools. The initial work done to date on overhauling teacher training has yet to adopt aspects of education for sustainable development (THIERSCH/HÖLTERSHINKEN/ /NEUMANN 1999).

3.2 Primary and secondary school education

Statements regarding the forms and extent of education for sustainable development seen during the reporting period should be made on the basis of conclusions drawn from empirical findings on environmental education and development education.

Three studies on environmental education in schools are available for the years 1986, 1991 and 1995 (EULEFELD et al. 1993; BOLSCHO 1993; RODE et al. 2001). Even though the data from these studies is no longer up-to-date, it does indicate that environmental education has become an established part of school curricula. On average, schools that provide a general education spend 40 classroom hours on 20 environmental subjects over the course of an academic year. Looking at the quality of environmental education, it must be said that the treatment of environmental topics has become more situation-oriented, problem-oriented and action-oriented over the years. The share of environmental topics that are studied with the help of projects has also increased noticeably and presently exceeds 40 percent. In addition, the last ten years have seen environmental education shift its primary focus away from scientific disciplines while simultaneously opening up to the social sciences and humanities. Today, these latter two disciplines provide the backdrop for instruction on more than half of the environmental topics covered at school. These developments can be attributed to the many efforts being made to disseminate environmental education in schools – such as work on revising curricula or the experiments and projects conducted by groups of committed teachers – and can be viewed as encouraging signs for the potential that Germany's schools have to be innovative, despite obstacles and difficulties.

Development education – also called global learning or multicultural education in this context – is an interdisciplinary field of learning which integrates various subjects such as geography, political education, history and religion. There are no empirical studies comparable to those available on environmental education to provide data on development education's standing in actual practice in Germany's general school system. However, educational and methodological concepts can be evaluated with the help of studies conducted on instruction materials, curricula and textbooks (SCHEUNPFLUG/ SEITZ 1995). Development education evolved from didactic traditions in the social sciences and humanities. Commercially-produced publications such as books or periodicals account for approximately half of the instruction material available today. The other half is developed and published by churches, public interest groups and the like. The syllabi for the individual subjects have developed considerably since 1990. Development-related subjects are now handled on an interdisciplinary basis in nearly all of Germany's *Länder*. Instruction on development-related issues often starts at primary school level because there is an especially large amount of excellent instruction material available for this age group. Instruction at primary school level particularly targets the emotions and is less likely to convey factual knowledge. At secondary school level, the focus is much more on teaching knowledge and multicultural skills. Subjects such as religion and geography frequently serve as a platform for development-related topics that are dealt with on an interdisciplinary basis.

The following positive trends could be observed in the area of education for sustainable development during the period covered by this report (see Section 4.1.4):

– Traditional environmental topics such as waste avoidance, energy conservation, the use of renewable sources of energy / solar energy, health education and schoolground design are a firmly established part of school activities. In other words, schools have gotten

involved primarily in subjects that can be put to practical use. One example of this are the popular "fifty-fifty" programs where schools that conserve energy can apply a portion of their savings (which has been arranged in advance with the local government) – 50 percent, for instance – toward their own budget so that they can conduct similarly ecologically-oriented projects to revamp their playgrounds or premises to be environmentally friendly or projects that target waste avoidance.

– Partnerships between schools in different countries are becoming increasingly important, with the network function that these partnerships serve and the collaboration on concrete topics that takes place within them being particularly valuable. Such networks include UNESCO partner schools, eco-schools and GLOBE partnerships. Their aims include enabling and strengthening communication between schools and students. Mention must also be made of the EXPO schools which focused on the school of the future in a decentralized project that was conducted from 1998 through 2000 as part of the EXPO 2000 world exposition (HENDRICKS 2001). Another example is the OECD/CERI's Environment and School Initiatives (ENSI) network which supports collaboration in projects and development programs involving environmental education / education for sustainable development and school development (see Section 6.1).
– School partnerships which have developed into One World Partnerships over time and receive material developed by NGOs (such as the Foundation for Development Co-operation Baden-Wuerttemberg and German Agro Action) provide a vehicle for introducing young people to development issues.
– Schools are increasingly devoting their entire system to education for sustainable development. They are integrating parts of Agenda 21 into their programs, developing a profile of their own as an "Agenda school" and dealing with eco-audits. Moreover, school programs have proven to be an effective instrument for pooling the various activities that education for sustainable development involves.
– Combining Agenda 21-related topics with activities that foster opportunities for participation meets with great interest in schools. For example, schools conduct multicultural projects, neighborhood and borough projects, projects in the areas surrounding schools or projects to develop and cultivate projects outside the school (e. g., biotope sponsorships, work in so-called One World Houses). One side effect of schools participating in Local Agenda 21 processes or conducting projects which purposefully deal with regional and local problems is a change in the way society views schools. Schools that make use of their opportunities to gather local knowledge and make their findings and ideas public are perceived as partners and active centers that can stimulate Local Agenda processes. There is a strong link here with community education which has become more important in recent years.

The BLK's Program 21: Education for Sustainable Development (see Section 4.2.1) is particularly important in this connection for the primary and secondary education field.

3.3 Vocational training

The *Vocational Training for Sustainable Development* feasibility study (MERTINEIT/NICKOLAUS/ SCHNURPEL 2001) which was commissioned by the Federal Ministry of Education and Research provides information on the current status of vocational training. According to this study, environmental education is widely accepted as a new responsibility in the basic and continuing vocational training fields. It is generally agreed that every profession or vocation requires environmental skills and the ability to act responsibly vis-à-vis the environment. Consequently, it would not be realistic to create individual, independent occupational profiles for these qualifications. This also means that various aspects of sustainable development must be assigned a key role in occupations of particular environmental relevance. Work on re-casting occupational profiles and requirements in the chemical and environmental-engineering fields is therefore assigning a corresponding amount of attention to sustainability (see Section 4.2.1).

Development topics play a lesser role. They are often the subject of exchange programs implemented in part by Germany's *Länder* and in part by agencies such as the Carl Duisberg Society (CDG) that execute projects on behalf of the Federal Ministry of Economic Cooperation and Development.

Vocational schools also deal with environmental issues such as environmental problems in our technicized world, anticipatory environmental protection, water supply and sanitation, and waste management. Vocational training covers fundamental issues of sustainable development in corresponding courses and in-house training segments. Connections between the particular trade and areas in which sustainable, environmentally compatible development is pursued are evident in topics such as ecology and the economy; eco-auditing; trade with the Third World; and methods of sustainable production. School experiments such as the Environmental Education in Vocational Schools project in Schleswig-Holstein aim at fostering the ability to act in ways that take environmental concerns into consideration and at modifying trainees' behavior to be environmentally friendly (BLK REPORT 2001).

The *Vocational Training for Sustainable Development* feasibility study also contains criticism: Environmental vocational training views nature primarily as an instrument. Although the study views the recommendations made by Federal Institute for Vocational Training's Central Committee as a necessary prerequisite for vocational training for sustainable development, it considers them to be inadequate because they give only cursory attention to some aspects of sustainable development. Even though plans exist, instructors and examiners have yet to receive broad-based training specifically on sustainability. Legis-

lation and regulations on company environmental protection offer few points of departure for environmental vocational training. Despite the fact that the instruction materials situation has improved considerably in recent years, examples of their successful use or of existing learning aids are not widely known. The topics and content covered by environmental vocational training focus primarily on environmental aftercare. In contrast, innovative concepts that emphasize prevention and viable organization and design exist only in rudimentary form. The study also notes that findings from pilot and research projects are still not being adequately transferred.

Despite this criticism it can be said that environmental vocational training has become firmly established in the vocational training system at the level of pilot schemes and research and development projects and in training and continuing training rules. Although a start has been made in realizing vocational training for sustainable development, it must be noted that it is still not enough. The tendency will be for sustainable management to become increasingly important in vocational training because environmental protection and sustainability are being perceived more and more as an option for building corporate success in the future. A growing number of companies are taking up environmental protection at preventive level (responsible care) and are starting to open up to economic and environmental issues, as illustrated by the example of environmentally relevant laboratory-related occupations in the chemical, biology and paint industries (see Section 4.2.1).

3.4 Higher education

The *Umweltstudienführer* environmental studies guide (DE HAAN/ DONNING/SCHULTE 1999) which was funded in part by the Federal Ministry for the Environment, Nature Conservation and Nuclear Safety provides a good springboard for describing the range of environmental protection-related courses currently on offer at German universities. The number of environmental protection-related study programs has grown steadily in the years since 1977, the first year that such data was collected. Today, there are more than 100 separate environmental protection-related study programs and approximately 260 courses which deal in large part with environmental topics. A similar increase can be observed in supplementary and postgraduate study programs.

Programs that focus on development policy are primarily available at post-graduate level. Students wishing to study in this field presently have a choice of some 60 programs available to them in Germany. On the other hand, study programs that use the word “sustainability” in their title tend to be rare. Although there are several good examples of such programs, their descriptions reveal that they also offer a great deal of environmental protection-related content. It can be concluded from this that the environmental protection-related and development-related study programs listed in the environmental studies guide also cover essential aspects of sustainability.

A new trend seen in recent years is the trend toward internationalizing study programs which is also being pursued in conjunction with universities in other industrialized countries and developing countries. Study programs in the natural science, agronomy and engineering fields in particular exhibit a wide range of possibilities for specialization. The economics, social sciences and humanities fields are increasingly offering similar options.

Thanks in part to funding provided by the European Union's environmental research activities and through Germany's environmental research program (under the Federal Ministry of the Environment, Nature Conservation and Nuclear Safety), it has been possible to set up centers to foster interdisciplinary environmental research. The offerings available in the area of education for sustainable development have concomitantly increased.

Evidence indicating that the principle of sustainable development is being put into practice in teacher training courses is sparse. Empirical studies (e. g., HÖNIGSBERGER 1991, KLENK 1987, SCHLEICHER 1994, FISCHER/MICHELSEN 1997) show that between ten and 15 percent of all students enrolled in a teaching program are confronted with environmental issues during their studies. A recent analysis of university catalogues in North Rhine-Westphalia revealed that many courses already include environmental and development-related content (HENZE/SCHULTE 2001). An analysis of the Länder's examination regulations for teaching programs involving interdisciplinary studies provides more precise information, particularly since interdisciplinarity is considered to be a hallmark of the scientific community's examination of sustainable development. Such an analysis reveals that interdisciplinary studies are compulsory only in Saxony-Anhalt, Baden-Württemberg, Schleswig-Holstein and Lower Saxony. This could mean that most fields use only individual aspects of the sustainability principle as subjects for study.

“Ecologization” measures can be observed at various levels in the higher education sector. These include measures to establish an environmental management system to funnel individual measures being conducted at the respective universities into a “resource-conserving master plan” (VIEBAHN 1999; MÜLLER/GILCH/BASTENHORST 2001). Other measures involve environmental life cycle assessments, the drafting of an environmental report or an environmental impact statement, and the appointment of an environmental ombudsman. More than 30 universities across the country are currently involved in setting up an environmental management system; some of them are working to obtain validation under the EU's Eco Management and Audit Scheme (MICHELSEN 2000). Less than 20 universities have an environmental ombudsman that works on a “holistic” basis. And only four universities in Germany have conducted an eco-audit to date.

Looking at the overall picture, it is evident that courses which are geared to education for sustainable development are probably available in adequate number and qua-

lity. Environmentally oriented courses are viewed in conjunction with development issues. In this respect, the international discussions taking place at universities have borne fruit. However, not much progress has been made to date in incorporating the principle of sustainable development in examination and study regulations. Well-targeted incentives will have to be offered in the future as well to ensure that instruction content is also continually adapted to new challenges and developments and to prompt interdisciplinary project work. Efforts must be made to push ahead with the development of Germany's universities as sustainable bodies.

The Copernicus charter of the Association of European Universities (CRE) is of special importance for universities. It contains an overarching concept for implementing the principle of sustainable development at universities. To date, 292 European universities have adopted the charter. Thirty-five universities in Germany have signed it and the associated action program which contains recommendations for research, the transfer of knowledge and the ecologization of universities. Since 1993, this charter has provided a foundation for a higher education policy that is grounded in the principle of sustainable development. The charter represents a voluntary commitment on the part of signatory universities. It elaborates ten points which underscore the importance of universities in the area of lifelong learning and as social multipliers which offer the greatest potential for bringing about long-term changes in processes and behavior.

Working together with various partners from the higher education field, Copernicus / CRE is assessing Germany's performance in connection with the sustainable development of its universities and evaluating German universities' contribution to sustainable development. This report is scheduled for release in the spring of 2002 (see Section 4.2.1).

3.5 Continuing education and out-of-school education

Activities that pertain to Local Agenda processes have increased in the continuing environmental education, continuing development education and out-of-school education fields since 1997. Although there has been a positive response to the Agenda process, these activities constitute only a part of the out-of-school educational and continuing education activities offered in Germany. Plans to foster sustainability as defined by Agenda 21 are being developed in both the environmental education field and in the development education field.

It is not always possible to clearly delineate between providers of environmental education and providers of continuing development education. This is partly due to the fact that in Germany different groups offer corresponding types of courses. These groups include environmental associations, citizens' action groups and self-interest groups, environmental protection centers, nature conservation centers, general associations, youth groups, churches, organizations, adult education centers, government agencies, companies, the science and research community, museums, academies, consumer advice centers, unions and political parties. Furthermore, the content of these courses also covers a broad spectrum and the activities undertaken in connection with education for sustainable development are very diverse.

A large-scale study funded by the German Federal Environment Foundation (DBU) was the first to attempt a survey of all environmental education facilities in Germany and their activities (DE HAAN et al. 2000). Using data from 1998 and 1999, this study confirms an extensive range of offerings. According to the study, some 4,600 facilities provided 25 million to 27 million student classroom hours of instruction in environmental education annually. Environmental education facilities employ approximately 80,000 people. Between 10,000 and 12,000 of them plan, teach or supervise environmental education as their primary task. The density of environmental education offerings (measured in terms of facilities or number of classroom hours per capita) exhibits a north-south divide, with the amount of environmental education offered per capita being greater in the northern section of Germany than in the southern section. Asked about their primary focal areas, most (approximately 80 percent) of the surveyed facilities cited the category “natural sciences, nature study, nature conservation, agriculture and forestry.” Using a broad reading of Agenda 21 topics, the study's authors found that nearly one third of the environmental education facilities in Germany focus on subjects dealt with in Agenda 21.

Environmental centers are largely used by school classes which have shown an ongoing interest in experience-oriented offerings over the years. By contrast, adult education centers and other such facilities have to compete with television and other media. An analysis of the classes offered by Germany's 50 largest adult education centers in 2000 (APEL 2001) reveals that only a small number of them offer courses that deal with sustainable development.

Each region features a broad spectrum of public interest groups and organizations in the development education field which cover an enormous range of subjects. One example of this at *Land* level is the DEAB, the umbrella organization of development policy action groups in Baden-Württemberg, and at federal level is the World University Service (WUS) (DACHVERBAND ENTWICKLUNGSPOLITISCHE AKTIONSGRUPPEN 1999; WUS 1999). For NGOs, the single most important topic of the education work they do in the development field is the subject of environment and development. Nearly two thirds of all NGOs cite this as a focal subject. In addition, more than half of them assign the subject of human rights priority status in their work. They also deal with migration, the future of work, globalization and the global economy. Subjects such as Agenda 21, child labor, children's rights, child prostitution and indebtedness are also a focus of attention.

In October 2000, Germany's Federal Ministry for Family Affairs, Senior Citizens, Women and Youth polled the country's largest youth organizations, academies and, especially, umbrella organizations in the area of out-of-school political education about the courses they offered. Its survey revealed an increase in the number of courses on or attention given environmental protection and climate protection and their long-term implementation in the years since 1997. Looking at the methods used in this field, participatory learning projects dominate the types of classes and learning activities on offer.

A number of large-scale campaigns in the area of education for sustainable development were held as part of Agenda activities during the period under review. A common thread in these campaigns was the fact that they all dealt with issues of social justice within the North-South context and linked various aspects of European lifestyles with issues of global social justice. Activities of this kind are used to highlight potential avenues for action in today's globalized world. These campaigns can have an enormous mobilization effect. Volunteers constitute a major part of their organization. They also reach adults and youth outside the formal education system.

Church welfare organizations were already drawing attention to the interplay between resource consumption, environmental issues and development back in the 1970s (such as in the case of Brot für die Welt with its “Aktion e” campaign in the 1970s, or Germany's two umbrella church youth organizations, the Federation of Protestant Youth in the Federal Republic of Germany and the Federation of German Catholic Youth). These organizations foster the sustainability concept in many ways. The Misereor welfare organization and Friends of the Earth (BUND) have developed an extensive program for communicating the sustainability idea. Misereor and BUND offer parts of this program on a joint basis. In the years since 1996, these two organizations have conducted some 1,000 events to disseminate information on the *Sustainable Germany* study (BUND/MISEREOR 1996). They also organized additional informational events in collaboration with adult education centers, academies and similar institutions. Misereor and BUND additionally developed aids and media for presenting the study's findings to various target groups.

Development education continues to rely heavily on volunteer labor. Half of the NGOs that belong to VENRO (http://www.venro.org) do not have a full-time educational consultant. Only one quarter of them have an education department. The Committee for Development-Related Education and Journalism of the Churches' Development Service of the Protestant Church in Germany, which was funded by the Churches' Development Service, served an important function. It was absorbed by the Church Development Service of the Protestant Churches in Germany. There are only a handful of full-time advisors at the academies, the youth and adult education facilities maintained by the Protestant and Catholic church whose duties fall under development education, environmental education or even education for sustainable development. Charitable church organizations such as Bread for the World, Misereor, Missio and Holy Childhood also make a small number of educational personnel available for providing education for sustainable development. This personnel is also responsible for collaboration with schools.

The continuing education offerings available for multipliers in the area of education for sustainable development are not particularly well organized. Moderator training dominates. Moderating skills are a key qualification for the future and can be used not only in education for sustainable development but also in a vast number of educational and advisory contexts. It is worth noting that there have been few systematic, sequential continuing training courses for multipliers to date and there is no system for granting credit for this training.

The increased dissemination of new media spawned new opportunities for education for sustainable development during the period under review. A number of mailing lists and Internet portals exist today; examples include: http://www.die-frankfurt.de/clear; http://www.eine-welt-netz.de; http://www.anu.de; http://www.zke.org; www.ufaz.de

3.6 Local Agenda 21 processes

The importance and development of Local Agenda 21 processes

Local Agenda 21 processes are important for the implementation of the sustainability principle. These processes offer a wide variety of starting points for permanently anchoring this principle at local level and, concomitantly, for fostering education for sustainable development. Although Local Agenda 21 processes require the local government's participation, they are largely founded on the active participation of the local population. Local Agenda 21 processes offer individuals the opportunity to, for example, participate at political level (e. g., in public debates and meetings). They also prompt people to get involved and bring their influence to bear. In addition, discussion and listening are marks of quality for targeted political debate and consensus-building activities. The approach used in these processes varies and can be from the top down or the bottom up, depending upon whether it was initiated from the top (government) or the bottom (social groups). Ideally, the two are combined.

Communities are of special importance in turning sustainable development into reality because many of the problems and solutions which Agenda 21 addresses have their roots in local activities. Further, communities play a role as places where people live and are socialized. Residents can directly influence politics in their communities. It is at this level that the individual has the greatest opportunity to influence political activities. By implementing different aspects of the sustainability principle at all levels of local government, local authorities can serve as models and help initiate activities that will advance sustainable development. Examples of this would include introducing local

eco-audits or gearing the education system to models for sustainable planning, building and community life.

Current status

Chapter 28 of Agenda 21 makes an appeal to local actors. In this chapter, Agenda 21 calls on all communities to enter into a dialogue with their citizens, local organizations and private enterprises and subsequently adopt a Local Agenda 21.

The most recent findings show that German cities and towns have posted noticeable success as they progress along this path. They can build on a wealth of proven planning and control instruments that are rooted at local level. Urban development programs, development plans, transport development plans, climate and energy plans, environmental reports, environmental impact assessments and procedures for allowing citizens to participate in regional planning activities can be put to use for a sustainability plan. A Local Agenda 21 offers an opportunity for striking out in new directions for developing one's community in innovative ways. Local Agenda 21s coordinate various policy fields more closely with one another and incorporate all interested citizens and social groups. By doing so, they make it possible to measure the steps taken toward achieving sustainability, using concrete goals and indicators. In the process they make these activities transparent. A growing number of communities is making use of this opportunity.

The German government considers it its task to step up the Local Agenda 21 process and eliminate obstacles to it, taking care not to infringe on the local authorities' constitutionally guaranteed autonomy. At the same time, it maintains an ongoing dialogue with participating institutions, local authority associations, *Länder,* Agenda transfer offices, NGOs and national and international networks.

In a joint declaration, Germany's local authority associations – the German Association of Cities and Towns (DST), the Association of German Counties (DLT) and the German Association of Towns and Communities (DStGB) – , the Federal Ministry for the Environment, Nature Conservation and Nuclear Safety and the Environmental Ministers' Conference (UMK) once again expressly assured German communities of their support. The group's primary objective is to recruit as many communities as possible for the local Agenda 21 process and to work more closely together in this area. In this connection, the federal-*Land*-local government Local Agenda 21 discussion group set up at national level in 1998 constitutes a first important step toward creating synergies and coordinating the wide range of activities being undertaken to promote Local Agenda 21 work.

The Federal Ministry for the Environment, Nature Conservation and Nuclear Safety and the Federal Environmental Agency foster the Local Agenda 21 process with a variety of information and advisory activities that include pilot projects, case studies, materials, service brochures and specialized events. To date, the Federal Ministry for Economic Cooperation and Development funded the Centre for Local Community Development Cooperation (ZKE) in Bonn. The Centre's work will be taken over by the Service Agency Municipalities in One World which will start operation in late 2001. The Service Agency is also supported by the Land governments, local authority associations and development-oriented NGOs.

Local Agenda processes have developed rapidly since the late 1990s. Today, these processes are being implemented in more than 2,000 communities throughout Germany. As of March 2001, some 1,900 communities – approximately 13 percent of all local government units in the country – had already passed resolutions on Agenda 21. This figure was 800 in 1998 and only 80 in 1996. An overview of current Local Agenda processes is available at http://www.econ-tur.de/la21/la21_deutschland.htm and http://www.agenda-transfer.de.

Despite a wide variety of opportunities, the level of civic participation is still frequently low. This can be attributed to a number of things. To cite one example, processes frequently take the form of formal ceremonies with ritualized communication, often making decisions difficult to understand. In addition, there is also a shortage of political education and information; a culture of participation that would foster the interest and involvement of citizens is lacking as well.

Local governments and their representatives play a key role here, particularly in light of the fact that local governments must take their particular Local Agenda 21 into consideration in any decisions they take.

Activities pursued by local authority associations

The German Association of Cities and Towns (DST) conducted the project Future of the City? – City of the Future! Dialogue on Democracy and Self-Government in the Cities during the period September 2000 through April 2001. As part of this project, a variety of activities were held on topics such as The City and the Citizen; General Public Service Obligations in the Social, Juvenile Welfare and Health Fields; and Culture, Education and Sports. These activities took various aspects of Local Agenda processes as their themes.

Working together with researchers from the University of Paderborn, the Association of German Counties conducted a survey which revolved around the environmental and regional development of rural districts and around initiating and supporting Local and Regional Agenda 21 processes. Ten rural districts participated in the project Integrated Environmental Counseling and Environmental Aims in Rural Districts which was funded by the German Federal Environment Foundation (DBU). This project produced a report which analyzed cooperation and networking processes in individual regions, rural counties, cities and towns and provided tips for putting them into practice (LINDLOFF/SCHNEIDER 2001). The Association of German Counties also supports the implementation of Local Agenda processes through its provision of consultancy services and lectures.

Other activities

As part of its assistance for community-level Agenda 21 processes, the Federal Environmental Agency (UBA) has produced several "building blocks" such as its Local Agenda 21 handbook, a literature and address guide, and the study *Local Agenda 21 – A European Comparison.* The Federal Environmental Agency also issues information sheets on the German government's most important activities in connection with the Local Agenda 21 (e. g., project results, statements, progress reports). It additionally publishes handbooks and guides which offer assistance for concrete projects in various areas covered by the Local Agenda 21 process. The German Institute for Adult Education (DIE) conducted a survey of adult education centers and other environmental education facilities regarding their involvement in Local Agenda initiatives. This survey divided the facilities into the two categories "driving force" and "supporter." Facilities that fall under the "driving force" heading play a fundamental role in initiating local Agenda 21 activities. The "supporters" actively participate in round-table talks, conduct panel discussions on Agenda 21 topics and offer educational activities. Examples of "driving forces" include the Protestant Church in Berlin's Köpenick district which launched the first major Local Agenda in Germany and the Munich Adult Education Center which is – along other NGOs – also a key sponsor of the Munich Local Agenda.

Studies conducted by the Association of Environmental Education Centres (ANU) and its Bavarian chapter on Agenda 21's role in environmental centers show that adult education centers are often active in local politics, primarily due to their close contact with the community. Environmental centers on the other hand organize more educational activities for children and juveniles. It is particularly evident from the study conducted by ANU's Bavarian chapter that by being networked at regional level, these associations' intensive efforts get environmental centers involved with great success in Agenda activities.

The promoter program in North Rhine-Westphalia plays a special role in the Agenda process. This program created 23 "promoter positions" to support the Rio follow-up process and encourage development education at local level. As a result of these activities, it has been possible to get important segments of the population to talk about or deal more intensively with the subject of "One World." In Bavaria, moderator training for Agenda processes is offered through the TU WAS ("Do Something") campaign (HÄUSLER/SCHADT 2000; http://www.tuwas-agenda.de).

According to a study conducted in 32 German cities by the Clearing House for Applied Futures GmbH's Agenda Transfer department, approximately one third of the initiators of Local Agenda work come from the development field. Local North-South forums play an important role in this connection. It is also evident that church groups constitute a large portion of the players involved in the Agenda work being done in communities (CAF/MISEREOR 2000). Approximately one quarter of all Local Agenda processes participate in various campaigns.

The Centre for Local Community Development Cooperation (ZKE) was founded in Bonn in 1996 with the assistance of several *Länder* and the City of Bonn to support Local Agenda processes and foster local development cooperation. The Centre took over the work done by the European Office for Communal Development Cooperation of the City of Mainz which did pioneering work for many years, having been an upshot of the Council of Europe's Interdependency and Solidarity campaign which was launched in 1988. Twinning arrangements with cities in countries of the South incorporate the concept of sustainable development and make it a focal point for the work pursued by participating cities. From the development standpoint, the Centre for Local Community Development Cooperation provides an important platform for coordinating local activities being pursued in the area of education for sustainable development.

Working to provide additional assistance for Local Agenda processes, Misereor initiated the Communities in the World project with funding from the Federal Ministry of Economic Development and Cooperation. It also developed the Rio + 20: The One World-Compatible Community in the Year 2012 Makes a Global Difference Through Local Action model in cooperation with CAF/Agenda Transfer and the University of Duisburg's Institute for Development and Peace. Misereor additionally developed a set of indicators (INEF/MISEREOR/ CAF 2000) and a system for measuring Local Agenda processes (MISEREOR/KGST 2001).

4 Activities pursued by the German government

The German government brought about or prompted a number of initiatives and activities in the area of education for sustainable development during the period covered by this report. These included first and foremost the creation of a State Secretaries' Committee for Sustainable Development, the appointment of the German Council for Sustainable Development, regulatory measures in the area of vocational training and a wealth of research and development projects, funding programs and initiatives which the individual ministries have jump-started and supported. Projects that were conducted as part of the joint federal-*Länder* education planning activities were also important. These projects were particularly intensively involved during the reporting period in the conceptual development and implementation of education for sustainable development. Examples include the launch of the BLK's Program 21: Education for Sustainable Development, its Learning and Shaping the Future – Education for Sustainable Development conference and its report to the heads of Germany's federal and *Land* governments on the implementation of its guidelines for education for sustainable development.

4.1 Cross-cutting activities

4.1.1 National sustainability strategy

The development of a national sustainability strategy has been a fundamental part of the German government's eco-

logical modernization policy. This strategy revolves around successfully linking environmental, economic and socio-political objectives with one another. The purpose of national sustainability strategies is to achieve sustainable – in other words, economically efficient, socially equitable and environmentally compatible – development.

The German government voted in July 2000 to set up a State Secretaries' Committee for Sustainable Development which advises the Council for Sustainable Development (see Section 2.2.5). The State Secretaries' Committee has the task of developing a national sustainability strategy in the course of a dialogue with various social groups. This strategy is to contain objectives and concrete projects for realizing them. Germany's sustainability strategy will, for the present, give priority to the following three areas of activity:

– Climate protection and energy policy,
– The environment, food and health,
– Environmentally-sound mobility.

The ruling SPD and Alliance 90/The Greens parties specified in their coalition agreement in October 1998 and confirmed in their subsequent policy statement that they would develop a national strategy for sustainable development with concrete objectives during the current legislative period. The German government views ecological modernization as an enormous opportunity for protecting natural resources and creating jobs. It also holds that the Federal Republic of Germany should be a frontrunner in this field. The precept of sustainability – which is based first and foremost on Agenda 21 – serves as a guidepost for these activities. The German Bundestag expressed its support for this in a unanimous resolution passed in January 2000.

4.1.2 Preparations for the World Summit on Sustainable Development in Johannesburg

The World Summit on Sustainable Development being held at the level of heads of state or government in Johannesburg in September 2002 will not only be taking stock of what has been achieved since the Rio Summit, it will also adopt concrete, action-oriented resolutions that will generate new impetus for the sustainable development policy field throughout the world.

The German government is keenly intent on incorporating the public and all those actors in Germany who are involved in sustainability into preparations for the summit, acquainting them with its various initiatives, briefing them on the current international preparatory process and drawing on the contributions being made by these groups, all at an early stage.

Relevant Bundestag committees, the Environmental Ministers Conference and local authority associations are regularly consulted as part of these activities. The Council for Sustainable Development is also involved in the preparations for the Johannesburg Summit. In addition, the German government will be holding working-level consultations with representatives of important German NGOs on a regular basis.

Germany's Federal Ministry for the Environment, Nature Conservation and Nuclear Safety and Federal Ministry for Economic Cooperation and Development, working in conjunction with the German NGO Forum on Environment and Development, conducted a two-day kick-off conference on the summit's most important topics in the autumn of 2001. High-level representatives from societal groups participated in the conference.

The Federal Ministry for the Environment, Nature Conservation and Nuclear Safety and the Federal Ministry for Economic Cooperation and Development have set up a special joint web site for the Johannesburg Summit where users will find regular reports on preparations for the summit.

4.1.3 Research and development

The German government attaches great importance to research and development (R&D) being conducted in connection with sustainability. Research and development also play an important role in connection with education for sustainable development. R&D is used not only to tap new knowledge but also for developing innovative methods, concepts, processes and strategies for giving the concept of sustainability a more concrete form and subsequently implementing it. The German government is therefore extremely interested in increasing the amount of research and development findings that are put into actual practice in society (transfer of knowledge). Education for sustainable development can contribute to this process at various levels. Systematic methods are also needed for transferring R&D findings to the various fields of education in order to ensure the availability of correspondingly trained specialists.

The German government funds research projects that play a direct or indirect role in shaping educational measures. Basic funding for Leibniz Association (“Blue List”) institutes – particularly the German Institute for Adult Education, the German Institute for International Educational Research and the IPN – Leibniz Institute for Science Education – is also important in this connection. These institutes conduct varying degrees of research on education for sustainable development.

The German Institute for Adult Education specializes in continuing education. Its activities in connection with education for sustainable development include providing advisory services in support of Local Agenda processes. The institute also established the Environmental Education Clearing House.

The IPN – Leibniz Institute for Science Education dealt with sustainability issues during the period covered by this report primarily through the work conducted as part of its Environmental Education and Environmental Action research field. This work was transferred to the new Innovative Concepts for Science Education priority re-

search field in early 2001. Acting as a service facility, the Institute organizes a number of contests for schoolchildren in the area of sustainable development (see Section 6.2).

The German Institute for International Educational Research conducts research as part of the Deutsche Forschungsgemeinschaft's (DFG = German Research Foundation) Global Changes in the Environment: Socio- and Behavioral-Scientific Dimensions priority program which examines how important the normative categories risk, responsibility and solidarity are in connection with people's perception and assessment of environmentally-relevant conflicts. The findings generated by this research project provide a basis for drawing conclusions regarding education, training and continuing education.

The Helmholtz Centers that are joined together in the Hermann von Helmholtz Association of German Research Centers (HGF) also make a special contribution to introducing young people to research topics of relevance to the environment and sustainable development. These Centers are primarily government-funded. For example, the Jülich Research Centre, the Karlsruhe Research Center Technology and Environment and the Munich-based GSF National Research Center for Environment and Health offer a wide range of information and continuing education programs for both schoolchildren and teachers. They are also involved in corresponding collaborative activities with universities.
The examination of illustrative fields of technology – such as space travel – in the classroom is an effective means of conveying the concept of sustainable development. Earth observations provided by the German Aerospace Center (DLR) can be used for illustrating global relationships and putting scientific knowledge to use in the interest of sustainable development.

The government's reply to the major interpellation on education and research policy aimed at sustainable development submitted by the SPD and Alliance 90/The Greens parliamentary groups in the German Bundestag provides an indication of the importance it attaches to research that targets the implementation of the sustainability principle and how research and development can be linked with education and communication when research policy is re-aligned to follow the principle of "research for humankind."

The Federal Ministry of Education and Research funds a number of research projects with links to education for sustainable development. Examples include:

Socio-economic research

Created in 2000, the Socio-Economic Research funding priority gives center stage to research on the relationship between society and nature. Projects in this priority field tend to focus on the production and distribution sectors and political regulation; however, they also give special consideration to the consumption and budget spheres for their themes. Proposals for research alliances that are based on exploratory projects will be invited starting 2001. The resulting research findings are to be used to provide various stakeholders scientifically grounded suggestions for steps they could take toward achieving sustainable development and to make fundamental knowledge available for education measures and implementation strategies in the education sector.

Construction and housing

Launched in May 2000, the new Construction and Housing in the 21st Century research program links social, cultural, ecological and economic objectives and trends and, in doing so, opens the door to a new type of solution to urgent social problems, along the lines of "research for people." This program is aimed at both the scientific community and practitioners in the construction and housing sectors.

Interdisciplinary part-time training concepts and models must be developed and tested for the respective occupations that are involved in the various stages of the construction process to ensure that integrative sustainable development is realized in the construction and housing field. Not only do research findings have to be widely published and documented in order to be put to practical use, the transfer of knowledge and know-how they represent also has to be organized. For this reason, the Construction and Housing in the 21st Century research program was also designed to serve as a platform for permanent networks and collaborative activities between the actors from the research community, education sector and actual practice who are active in the construction and housing field.

Examples of work being done to support the transfer of knowledge and the training field include the development of concepts and models for incorporating new trends and findings into vocational training and study programs at an early stage (such as increasing the amount of economic and organizational content in instruction) and efforts to strengthen the technical and economic aspects of expanding and modernizing existing housing stock.

Sustainable management, integrated environmental engineering

Working together with the GSF National Research Centre for Environment and Health, the Federal Ministry of Education and Research is currently conducting a funding initiative entitled Model Projects for Sustainable Management 1998 – 2002 – Innovative Approaches for Strengthening Regional Economies which focuses on the agricultural economy and regional marketing. This initiative is initially funding two projects:

The Informing – Providing – Regulating. Paths to Sustainable Consumption Patterns Between Consensus and Conflict project builds on the premise that various social and economic processes foster ever larger consumer radii, ever more land use and ever greater transport distances. Aiming to counteract this trend, this project analyzes and

evaluates the prerequisites for the conditions underlying consumption-related activity and the effects these conditions have.

The Development of a Learning Model for the Regional Marketing of Foodstuffs project was set up to increase the amount of foodstuffs being supplied and marketed regionally and help mitigate the effects of supra-regional production and distribution. Another objective is to make consumers aware in suitable ways of the positive impact that regional production and marketing has on the environment, economy and society – an impact that is not reflected in the price of such products (joint products).
The 'Integrated Environmental Engineering' with Selected Asian, Latin American and East European Countries Special Program gives scientists from these regions the opportunity to undergo advanced training with the aim of acquainting them with the precept of incorporating environmentally sound technologies into production and processing processes at an early stage – in other words, with integrated environmental engineering. This fellowship program is being conducted by the German Academic Exchange Service (DAAD) and funded by the Ministry of Education and Research. Fellowships are granted in research fields which correspond to the ministry's funding priorities in the environmental research sector, namely, agriculture / agricultural engineering, food technology, leather production, textile processing, forestry and wood processing.

Sustainable BioProduction

The Sustainable BioProduction funding project revolves around creating innovative methods for environmentally-sound, resource-conserving industrial production with the help of modern biotechnology. Using interdisciplinary collaborative projects between industry and the research sector, Sustainable BioProduction has been fostering mainly young researchers and acquainting them with the subject of sustainable development since 2000. Postgraduate-level activities such as workshops and symposia are also planned as a supplement.

New Materials for Key Technologies of the 21st Century

The Federal Ministry of Education and Research has been helping junior researchers develop their own scientific profile with its New Materials for Key Technologies of the 21st Century (MaTech) funding program which it launched in 1999. This program funds exploratory basic research projects involving new and innovative materials which young scientists conduct with the object of obtaining an advanced degree.

Chemical research and development

Research plans are being developed on a similar level in the area of chemical R&D in cooperation with Dechema, a non-profit scientific and technical organization. The work being done here ranges from organizing expert discussions on topical research subjects to setting up and moderating Internet contact forums all the way to organizing workshops to support funding measures sponsored by the Federal Ministry of Education and Research (http://kontaktforum.dechema.de). Activities pursued in connection with sustainable development include an Internet forum on Sustainable Development in the Chemistry Field and the Sustainable Chemistry – Measurements and Metrics conference held in June 2001 (see Section 4.2.1, The Chemical Sector Dialogue).

Research on global change and viable development

The Research on Global Change program funds integrated research projects – in which numerous universities also participate – in the areas of global change in the water cycle (GLOWA), biodiversity (BIOTA) and climate and atmospheric research (DEKLIM, AFO 2000). Approximately a dozen of these projects – particularly those involved in atmospheric and climate research – are also expressly aimed at fostering junior researchers. These projects give outstanding young scientists the opportunity to obtain additional qualification for supervisory positions in science and industry. They also offer many students an opportunity to earn a *diplom* degree or their doctorate.

The research centers of the Hermann von Helmholtz Association launched the Global Sustainable Future – Prospects for Germany strategy-fund project in the autumn of 2000. This project is aimed at taking knowledge that provides a platform for action and offers a point of reference, and making it available to societal actors who are relevant in the sustainability context. The Federal Ministry of Education and Research provided funding for the preliminary study *Examination of an Integrative Concept for Sustainable Development – Current Status, Problem Analysis, Development* (2000) that was conducted in connection with this project. The Global Sustainable Future project has the job of developing and testing a set of instruments for injecting new impetus into the various discussions on sustainable development and simultaneously stimulating new learning processes.

International Human Dimensions Programme

The Federal Ministry of Education and Research assists the International Human Dimensions Programme (IHDP) by financing its offices at the University of Bonn. The IHDP initiates and coordinates collaborative international research on industrial transformation, changes in land use, global environmental change and human security, and the institutional aspects of global environmental change. The IHDP gives special priority to collaborating with developing and threshold countries.

Socio-environmental research

As part of its environmental research plan, Germany's Federal Ministry for the Environment, Nature Conservation and Nuclear Safety conducts various projects that are directly or indirectly related to environmental education and education for sustainable development

and can therefore be more broadly classified as environmental education research. These include demonstration projects to evaluate and substantiate sustainable consumption patterns and behavior styles, establishing the principle of sustainable development in environmental communication, improving the transfer of knowledge between the social science field and actors on the environmental stage, and developing an information package for women involved in environment-related research and instruction aimed at sustainable development.

The research priorities pursued here cover a broad range of subjects and problems dealt with in the discussion on sustainable development. Ministry funding is provided not only for technology and industry-oriented research and development projects. It also supports research on sociological aspects of sustainable development. Mention must also be made in this connection of the various studies conducted on environmental awareness in Germany (see Section 2.2.1)

4.1.4 Joint educational planning

Pursuant to Article 91b of Germany's constitution, the federal and *Land* governments conduct educational planning jointly. In the last 15 years, the Bund-Länder Commission for Educational Planning and Research Promotion (BLK) adopted environmental education and then education for sustainable development on at the program, conceptual and funding levels.

The BLK's Education for Sustainable Development Guidelines

The BLK's Education for Sustainable Development Guidelines which it adopted in 1998 (BLK 1998) are of key importance in connection with education for sustainable development. These guidelines enunciate educational principles and key skills necessary for education for sustainable development. They also describe in detail the tasks that implementing the concept of sustainable development entails the various fields of education, in day care, primary and secondary school education, vocational training, higher education and continuing education. The guidelines conclude with specific measures to be taken by Germany's federal and *Land* governments at the innovation, organizational and transfer level:

– Measures taken at innovation level can be translated into reality through, for example, the way innovation programs are designed,
– Measures at organizational level are manifested in the establishment of networks and the use of conferences and new media to translate innovative concepts into reality and
– Measures taken at transfer level can help see to it that innovation is implemented on the broadest possible basis – through the use of conferences, the establishment of model regions and, most particularly, the dissemination of good practice.

BLK report to the heads of Germany's federal and *Land* governments

The Education for Sustainable Development Guidelines call for the Bund-Länder Commission for Educational Planning and Research Promotion (BLK) to report to the heads of Germany's federal and Land governments for the first time in 2001 on progress made in implementing the proposed measures. The Commission adopted this report on October 29, 2001 (BLK Report 2001).

The BLK based its report on its survey of the progress that the *Länder's* ministries of education and cultural affairs and ministries of science have made in implementing the BLK guidelines. These ministries compiled information with the help of the relevant departments and documented it with examples of the very diverse activities being undertaken in the area of education for sustainable development.

This report was not however intended to provide a comprehensive overview of current political and legislative initiatives, *Land* funding programs, Agenda 21 initiatives, competitions or foundations for education for sustainable development which have links to the particular *Land* government – in other words, an overview that would permit a comparison of the individual *Länder*. Germany's *Länder* determine their own priority topics, pursue their own strategies and choose different instruments for implementing Chapter 36 of Agenda 21.

The BLK report outlines fundamental results, trends and implementation strategies for education for sustainable development in the *Länder* as a whole. Here, a summary:

– The report notes that an exceptionally large number of concrete projects and schemes have been developed at *Land* level in all educational fields. These activities also include the interleaving of formal and non-formal education processes. It turns out that formal education providers are not the only actors in this arena. Communities with their own Local Agenda 21, as well as NGOs and other bodies with an Agenda character, have also prompted a wealth of collaborative activities involving education for sustainable development. The activities focus first and foremost on opening up schools, formal and non-formal continuing education and campaigns at universities.
– The report notes a growing awareness of the need for systematization at institutional level and for assistance from *Länder* and local governments. The initiative for this is increasingly coming from the *Länder* and local governments which are willing to help maintain the success achieved to date by setting up their own programs and clearing offices. The conceptual approaches taken by education for sustainable development have become more concrete.
– Looking at instruction content, the way educational institutions have dealt with Agenda 21 has changed over the years. During the 1980s and early 1990s, instruction concentrated on genuine environmental and

development themes. The focus has since shifted to civic participation. This trend is particularly noticeable along the interface between formal and non-formal education processes.

– Vocational training continues to be geared primarily to the respective occupation. In those fields where general education plays a vital role alongside (or in preparation of) specialized courses, Agenda 21 is developing into a program which aims not only at fostering lasting environmentally-sound development but also at establishing new partnerships that are suited to achieving such development and at conceiving and practicing new forms of participation on the lines of civic involvement. Studies such as the Shell Youth Study (SHELL 2000) or the Youth Survey conducted by the German Youth Institute (DJI 1995) reveal that young people are particularly open to this type of participation. The substance of Agenda 21 helps people discover areas where the concept of *Gestaltungskompetenz* – the ability to shape the future – can be lived and consequently experienced.
– Education for sustainable development is defined at curricular, methodological and organizational level as a fundamental building block for a sustainable education system. Over time, educational institutions which feel a commitment to Agenda 21 change not only the content and methods used in teaching and learning, they also adapt their classrooms and surroundings and draw closer to the principle of sustainable development. Education for sustainable development is not arbitrary. Education for sustainable development revolves around the environment and development – with environment and development sometimes being defined as building upon one another, sometimes as competing with one another. However, a trend toward linking these two fields with one another is currently beginning to emerge. There is consequently a close connection between school development and education for sustainable development.
– There is a growing tendency to use well-targeted project funding to stimulate and maintain the level of new ideas that teachers are generating both inside and outside of educational institutions. Experience shows that targeted knock-on financing – provided through idea competitions, for example – helps to quickly maintain the level of this type of creativity at least at the funded facility and fosters the establishment of networks with partners both in the particular field of education and outside of it. Project funding is especially effective when the respective *Land* authorities have already incorporated Agenda 21 themes into education and have implemented both general and sector-related coordination measures to bundle the necessary advisory services and, in doing so, have illustrated the diversity of Agenda 21 themes in concrete ways for end users. Consequently, funding for exemplary educational institutions will increasingly give way to broad-based project funding. Outstanding projects ("lighthouses") continue to be important as models. However, they serve as effective transfer instruments only when broad project funding is consciously deployed to develop the findings they generate.
– Similar considerations apply to model regions which, as a rule, have earned this designation through Local Agenda work. Model regions develop out of local initiatives when the respective decision-makers also want and support them. Consequently, the now large number of clearing offices at local, regional and in some instances national level is a good sign for the desire and likelihood that the concept of sustainable development will in the coming years become a permanent part of the programs and profiles of facilities offering formal or non-formal education. Ongoing support from decision-makers is a fundamental prerequisite for this.

The BLK report sums up the positive trends observed in the implementation of the Education for Sustainable Development Guidelines in its concluding remarks as follows:

– The implementation of education for sustainable development is increasingly leading to the linking of education for sustainable development with civic participation and to the linking of environmental education with participatory learning.
– The implementation of education for sustainable development fosters cooperation between areas which have operated separately to date (such as environmental education and global learning).
– The implementation of education for sustainable development leads, to an increased extent, to the continued development of educational institutions into "learning organizations."

The implementation of education for sustainable development supports the development of school networks and efforts toward regional cooperation.

The report subsequently recommends the following political action:

– Establish incentives for interdisciplinary cooperation and projects (e. g., in respect to syllabi and curricula, examination regulations) in all educational institutions and training.
– Encourage educational institutions to pursue program development work (e. g., clarifying objectives and content priorities; evaluation; collaboration with external partners).
– Foster and fund regional networks and model regions (coordinating offices, collaborative projects, experience transfers, evaluation).

BLK conference Learning and Shaping the Future – Education for Sustainable Development

As part of their activities in the Bund-Länder Commission for Educational Planning and Research Promotion, Germany's federal government and *Land* governments funded the Learning and Shaping the Future – Education for Sustainable Development conference held in Osnabrück in June 2001. Nearly 600 practitioners from the education field and people from the political, administrative, cultural and business sectors attended. This conference took

stock of the progress made in implementing education for sustainable development in the respective fields of education and pointed out avenues for developing it further.

The conference included four forums which started by taking stock of education for sustainable development and the continued development of this concept in the individual fields of education: preschool education, primary and secondary school education, vocational training and continuing training, higher education (including continued scientific training) plus general continuing education and non-institutionalized (lifelong) learning. Research findings and examples taken from actual practice were used to show how and in which areas "traditional" environmental education or development education work, for example, can be developed into education for sustainable development.

Three other forums – Business and Education: Sustainable Management – Demands Placed on Education – Expectations Placed on Business, Communities and Education: Participation in the Context of Community Development and Local Agenda 21 and New Media and Education: The Media Society and Agenda 21 – served as platforms for discussing new approaches to dialogue and collaboration and for analyzing areas in which experience has been gathered, fields of activity, alliances, collaborative activities and partnerships which are fundamental to education for sustainable development.

These seven forums also provided a stage for presenting some 70 examples of good practice. These examples illustrated how, following one integrated approach, the three dimensions of sustainable development can be used to shape an ecologically sound, economically competitive and socially equitable environment for kindergartens, primary and secondary education, vocational training, higher education and general continuing education. They also pointed out the opportunities that new alliances with business, collaborative activities in communities and the use of new media have to offer.

These forums developed recommendations for establishing education for sustainable development more firmly in preschool education, primary and secondary education, vocational training, higher education and general continuing education, for building alliances with business and communities, and on the importance of new media. Particularly important points covered by these recommendations include:

– The positive experience gathered in projects and initiatives for education for sustainable development and exemplary facilities in the preschool, primary and secondary school fields must be made known to the broad public. Steps must be taken to make those authorities that finance educational institutions – particularly the local authorities – more open to education for sustainable development so that educational institutions themselves can be developed more in the direction of sustainable development. Cooperation with NGOs, commercial enterprises and associations is to be strengthened and support is to be provided for school participation in Local Agenda activities. Basic and continuing training should include more education for sustainable development so that teachers and educators can competently address the issue of sustainable development.
– The vocational training sector's examination of education for sustainable development must be stepped up so that this type of education can be put into practice at vocational schools and firms that provide on-the-job vocational training. Considerable progress has already been made in integrating environmental aspects into various training regulations. Steps should be taken to add various aspects of sustainability. Efforts should be made to continue economic pilot projects that are closely linked to sustainability issues and thus support the establishment and spread of education for sustainable development.
– Germany's universities should commit themselves to dealing with sustainability issues in the classroom, research and continuing education. Incentives should also be created to encourage universities to examine and deal with sustainability more intensively. The conditions necessary for team teaching must be established so that new forms of teaching can be fostered. The concept of sustainable development should be systematically integrated into teacher training, with consideration being given not only to providing qualification in the particular subject itself but also to imparting related teaching, methodological and multicultural skills. The guidelines which funding programs follow when making decisions on allocating monies for research and development projects should also be geared to sustainability criteria. Special attention should be given to assisting interdisciplinary and transdisciplinary research activities and collaborative projects. The sustainability concept should also play a vital role for universities themselves.
– Conditions in the fields of general continuing education and out-of-school education should be improved in ways that make it possible to incorporate education for sustainable development to a greater degree. The various activities being pursued at federal, *Land* and regional level to promote education for sustainable development should be networked more extensively with one another. Educational institutions should be integrated more into local and regional Agenda processes. Suitable programs should be developed to qualify the various actors from the education field to provide education for sustainable development. The new media should be put to more intensive use for educational work and funding should be provided for projects that delve into the use of new media in education for sustainable development.

In their Osnabrück Declaration, the conference participants spelled out the efforts that will be needed for implementing education for sustainable development. According to this document, Germany's national sustainability strategy should give center stage to communicating Agenda 21's objectives, the areas in which it operates and the areas in which it entails conflict. This will require intensive joint efforts in the area of formal and non-formal

education and close cooperation between the media and political decision-makers at all levels on one hand and the various actors involved in education for sustainable development on the other.

This conference constituted a decisive step forward in integrating the two fields of environment and development to create multi-dimensional education for sustainable development.

The Bund-Länder Commission's 21 Program

The Bund-Länder Commission's 21: Education for Sustainable Development Program is another important project arising from the federal and *Land* governments' joint educational planning activities (see Section 4.2.1)

4.2 Federal ministries and subordinate agencies

Germany's federal ministries promote the plans and projects being pursued in connection with education for sustainable development in a variety of ways. The Federal Ministry of Education and Research, the Federal Ministry for the Environment, Nature Conservation and Nuclear Safety and the Federal Ministry of Economic Cooperation and Development are the most involved. Other ministries fund individual education-related projects. The Federal Ministry of Education and Research and (depending upon the field) the Federal Ministry of Economics, the Federal Ministry for the Environment, Nature Conservation and Nuclear Safety and the Federal Ministry of Consumer Protection, Food and Agriculture play a special role the in vocational training field when regulations governing basic and continuing training for various occupations are to be revised or amended. The Federal Ministry of the Interior bears special responsibility for junior civil servants embarking on an administrative career and for providing continuing training for employees of the federal administration.

Federal ministries make important contributions toward initiating, testing and implementing measures involving education for sustainable development. They also provide ideas for advancing education for sustainable development in the various fields of education.

The ministries' various projects are outlined below and classified according to education sector where possible. The projects cited here represent only a portion of all the ministerial activities being pursued in connection with education for sustainable development.

4.2.1 Federal Ministry of Education and Research

The Federal Ministry of Education and Research (BMBF) funds projects in all education sectors to varying degrees and with varying priorities. It also implements regulatory measures. In addition to this, the ministry initiates and supports research and development projects that are directly or indirectly connected with education for sustainable development (see Section 4.1.3).

The Bund-Länder Commission's "21" pilot program

The Bund-Länder Commission's "21" program is being conducted as part of the federal and *Land* governments' joint education planning activities (see Section 4.1.4). The Federal Ministry of Education and Research is funding the program together with 15 *Länder* for a five-year period. The aim of the program is to integrate education for sustainable development into educational practice. The "21" program is based on a 1999 report on programs in the general education field (DE HAAN/HARENBERG 1999) that was commissioned by Germany's federal and *Land* governments. This report calls special attention to how important education is for the implementation of the agreements reached at the Earth Summit in Rio de Janeiro.

The Bund-Länder Commission shifted the focus of its funding activities from pilot schemes to programs in 1998. One of the objects of this move is to boost and broaden the impact of the innovative approaches that individual schools participating in a particular program are taking to education for sustainable development. The intention is to have the respective program generate impetus for other schools even before it has been concluded. As a result of this tactic, the program modules being tested can be disseminated at an early stage.

The BLK's "21" program is strongly geared to the participation concept found in Agenda 21. *Gestaltungskompetenz* plays a special role here (see Section 2.3.3). *Gestaltungskompetenz* places the notion of independent judgment and the ability to take innovative action in the area of sustainable development squarely at the center of sustainable development.

The basic concept for the 21 program was developed in concert with Germany's federal and *Land* governments. This concept stresses the following three instruction and organizational principles:

– The principle of interdisciplinary knowledge. This principle links the need for "networked thinking" to the vital principles of "retinity" – the interlinking of the natural and the cultural world – and the development of problem-solving skills. One of the aims here is to incorporate corresponding content and forms of work into the *Länder's* curricula and into the individual schools' programs.
– The principle of participatory learning. This principle takes up Agenda 21's central call for all societal groups to participate in the process of sustainable development and refers to the lifelong fostering of learning techniques and methods.
– The principle of innovative structures. Building on the premise that schools as entities are effective places of learning, this principle uses parallels to current areas of educational reform as themes. Instruments from the economics field such as student companies or eco-audits are also taken into account here.

Sustainable development has particularly good chances of spreading in those areas where it not only brings new re-

sponsibilities that match the capacity of the institutions and persons involved but also suggests solutions for current problems. An important concept in this connection is the search for an overlapping of existing ideas, objectives and visions and the linking of these ideas, objectives and visions with the work done at schools. Linking the perspectives of sustainable development with the perspectives arising from the development of innovative schools and curricula and elaborating a common orientation are considered to offer more promise and be more effective for integrating the topic of sustainable development into school education than one-dimensional implementation strategies. Put into concrete terms this means that in order to make dealing with this subject appear attractive and worthwhile, sustainable development must offer elements of positive models of classroom instruction, school life, the school community, and the school's relationship with its environment.

So-called "school sets" are vital to implementing the concept behind this program. Schools from 14 participating *Länder* (Saarland will join at a later date) are currently working together in 27 sets of six to eight schools each.

The schools in the individual sets work on one of the topics covered by the instruction and organizational principles that underpin education for sustainable development. Up to three sets are developed and tested per *Land*. The idea behind this type of network promises reciprocal enrichment while reducing the likelihood of interruptions to this work. It particularly includes the efforts being made to open schools up to non-school partners. The body responsible for managing the 21 program in the respective *Land* (usually a *Land* agency) also assists the participating schools.

Topics which these schools are dealing with include:

– In the field of interdisciplinary knowledge: syndromes of global change; the environment and development; sustainable Germany; health and sustainable development;
– In the field of participatory learning: participation in Local Agenda 21s; working together for a sustainable region; development of sustainability indicators;
– In the field of innovative structures: sustainability audits at schools; student companies, sustainable development as a school profile; new forms of external cooperation.

The following chart shows a breakdown of these topics by *Land.*

The Environmental Education Department (Professor G. de Haan) at the Free University of Berlin is responsible for coordinating the entire program. This office assists the Länder with conducting the program, does thematic and structural development work, is responsible for conducting evaluations, publishes instruction material, offers cross-cutting continuing training and ensures cooperation and networking between the *Länder*.

The Internet, a monthly circular, a publication titled 21 and handouts for all teachers participating in the program provide the primary means for the regional and national exchange in this program. Other equally important vehicles for this exchange include inter-*Länder* working groups, continuing training activities and conferences. The ground is presently being prepared for "bundling" working groups that focus on related topics to create a network. Steps are also being taken to initiate collaborative activities as needed for limited periods.

In addition to the usual structures (program coordinator, steering committee) used in all Bund-Länder Commission programs, the 21 program also has an advisory board and an evaluation team. The experts on the program's advisory board come from various societal groups and institutions that are also intensively involved with sustainable development.

The evaluation team is made up of experts from the fields of education for sustainable development, environmental education, political education, research methodology and school development work. They are employed at universities and *Land*-level institutes. The evaluation team's primary focus is on conducting an overall evaluation of the "21" program.

The following priorities were defined during the nearly two years that the program has already run:

– Develop, set up and optimize a work structure that is commensurate with the program's size, tasks and scope;
– Design sets of measures and information kits for training, fostering and advising the actors involved;
– Develop, set up and optimize an evaluation strategy for the program;
– Set up vehicles with a public relations approach (magazine, web site, flyers, brochures) for disseminating the program.

The 21 program has developed well to date. Most of the school sets have made substantial progress and produced noteworthy results. The first material (e.g., handouts and field reports) appeared over the course of 2001. Examples of particularly successful subject areas include student companies, sustainable regions and syndromes of global change. The program underwent a first summative evaluation in 2001 (survey of participating students and teachers). A concept for a formative evaluation was developed and will be implemented starting in the autumn of 2001. The magazine and web site have met with a broad positive response.

The second half of the program will give center stage to disseminating its results. A nuanced strategy has been developed for this. Its essential components include the publication of a magazine, a regular presentation of the program results on the web site, the issue of information material and handouts, assisting schools with developing school programs and conducting self-evaluations, contributing model curricula when syllabi and curricula are to

be overhauled, and developing certifiable multiplier programs for training the actors involved.

The Iserlohn Evangelical Academy organized the Education Needs Partners – Schools and Associations Cooperate for Sustainable Development environmental conference in March 2001 in conjunction with the BLK's 21 program and organizations in the environmental protection and development fields. At this conference, teachers and representatives from communities, institutions and associations discussed communication and cooperation as important building blocks for sustainable development.

Primary and secondary school education

Besides the BLK's 21 program, the Federal Ministry of Education and Research funds the following activities in the general education field:

– As a flanking measures for the BLK "21" program, the ministry supported the drafting of the *Recommendations for School Eco-Audit Procedures* and the Cooperation Between Schools and School Authorities as a Contribution to Education for Sustainable Development conference sponsored by the German Association for Environmental Education (DGU). The DGU-'s School Authorities 21 competition was evaluated during this conference with a view to prompting school authorities to give even more support to school initiatives on education for sustainable development.
– The Federal Ministry of Education and Research fosters the use of new media in a number of ways, such as the Schools as Detectives in Nature project (http://www.naturdetektive.de) which is being conducted in conjunction with various public interest groups. In this project, students use new media to prepare for observing nature. The use of new media puts data located throughout the entire country at students' fingertips for use as instruction material. Initiated by the German Clearing House Mechanism (CHM), a research and development project established in connection with the Convention on Biological Diversity, this project is being supervised by the Information Centre for Genetic Resources and the German Centre for Documentation and Information in Agriculture in cooperation with more than 20 partner organizations. Links to other offices and organizations in Germany are being established through Nature's Detectives 2000; these include GLOBE Germany, the Spring Alive competition being conducted by the environmentalist youth organization NAJU with funding from the Federal Ministry for the Environmental, Nature Conservation and Nuclear Safety, and the German Meteorological Service.
– InfoSchool – the abbreviated name for the Use of Electronic and Multimedia Sources of Information in Schools scheme which the ministry funds – has run successfully for a number of years as part of the Schools Online campaign. Various InfoSchool projects work together on, for example, procuring accompanying instruction material on the subject of humankind and the environment. In some cases they also collaborate with similar projects being conducted in other EU member states. The results have been organized in a database (http://www.bionet.de).
– The ministry also funds The System We Know as the Earth project being conducted by the IPN – Leibniz Institute for Science Education. This project was designed to increase public awareness of research and development work being done by developing cross-disciplinary instruction material for the marine and polar research fields and the geosciences. This project targets primary and secondary school students and aims to foster an understanding of systems, the ability to think in terms of complex contexts and the ability to form rational judgments. The System We Know as the Earth project makes a special contribution to fostering the transfer of research findings to schools that provide a general education.
– The Get Moving – By Bike project focuses on ways to induce people to leave their cars at home and use bicycles or public transportation instead. This project provides schools, local authorities, public transportation system operators and private actors information and guidelines for fostering bicycle use. A plan for conducting "project weeks" in schools that will help increase bicycle use is to be developed as part of the Reasons For and Factors Impacting Bicycle Use in Everyday Transportation project.
– Multilateral school partnerships and projects are funded through the Comenius program which is part of the European Union's Socrates program. These activities also focus on topics with a direct connection to the environment such as water as a natural resource, the environment and tourism, and present and future problems with waste.
– The Federal Ministry of Education and Research also supports a number of competitions (see Section 6.2), networks (Section 6.1.1) and conferences.

Vocational training

All vocational training regulations have contained objectives with a link to sustainable development for some time now. Those training occupations that have been revamped since 1997 and all new state-recognized occupations – from the technical trades to the commercial trades – are geared to the principle of basing action on holistic contexts and feature occupational health and safety and environmental protection as standard learning objectives. A working group consisting of representatives from the Federal Ministry of Education, Research, the Federal Ministry of Economics, unions and employers' associations is currently considering expanding these objectives to give greater emphasis to instruction content that targets sustainable development. Besides stipulating standard learning objectives, it is customary for training regulations for technical trades in particular to include special, occupation-related training requirements that involve sustainable management (see Section 4.2.6).

The sustainability dimension has already been included to some degree as well in environmental protection pilot schemes in the vocational training field. These pilot schemes were used to test instruction concepts and a broad range of methods for basic and continuing training plus a sizable number of materials and media which also take the objective of sustainable development into account within the respective context.

This occupation-related approach is also apparent in current funding activities. These include:

– A pilot project on sustainable development in the vocational training field; this project focuses on integrating sustainable energy technologies into vocational training for skilled trades.

Land	Module 1: Interdisciplinary knowledge	Module 2: Participatory learning	Module 3: Innovative structures	No. of sets
Baden-Württemberg			Sustainability audit at schools Student companies	2
Bavaria		Participation in a Local Agenda 21		1
Berlin	Syndromes of global change	Working together for a sustainable city	Sustainability audits at schools	3
Brandenburg		Participation in a Local Agenda 21 Working together for a sustainable region		2
Bremen	Environment and development			1
Hamburg			Sustainability audits at schools	1
Hesse	Sustainable Germany	Working together for a sustainable region	Sustainable development as a school profile	3
Lower Saxony		Participation in a Local Agenda 21	New forms of external cooperation Student companies and sustainable economics	3
Mecklenburg-Western Pomerania		Working together for a sustainable region		1
North Rhine-Westphalia	Environment and development	Participation in a Local Agenda 21	Sustainability audits at schools	3
Rhineland-Palatinate		Participation in a Local Agenda 21		1
Saxony-Anhalt	Health and sustainable development	Working together for a sustainable region		2
Schleswig-Holstein	Syndromes of global change	Development of sustainability indicators		2
Thuringia		Development of sustainability indicators	Sustainable development as a school profile	2

In the course of this project, a concept is to be developed and tested for organizing in concert with partners from the vocational school sector the "sustainable energy technologies" instruction provided as part of the training for the electrical engineering field

– A project for building a joint construction training center using ecological and sustainable construction methods. This project will build, equip and operate a joint training center on the basis of environmental criteria. Applying the principle of "learning by building," the training center will serve as a demonstration object that will be particularly useful for environmental education in joint training activities and in-plant continuing training.
– The School – Business World / Working World program also funds projects that focus on teaching sustainable development issues as an important facet of the individual's examination of economic issues in the course of collaborative School - Business World / Working World activities.
– Looking at the European and international level, Germany is involved in the European Union's (EU) Leonardo da Vinci vocational training program and the UNESCO's UNEVOC vocational training network.

The Leonardo da Vinci program does not explicitly cite education for sustainable development as one of its priorities. However, the objectives laid down in the Council decision of April 26, 1999, and the current 2000 – 2001 invitation to submit project proposals do provide a framework which ensures that projects with this priority are given adequate consideration.

In Germany, a number of projects with a focus on environmental education, resource conservation and renewable energies received funding during the first phase of the Leonardo da Vinci program. This trend has continued through the program's second phase. Two of the 21 Leonardo-funded pilot projects coordinated by Germany explicitly focus on education-for-sustainable-development themes. The Topas project being conducted by the International Sonnenberg Association focuses on developing standards for the continuing training provided employees at European nature reserves. Another project – by the Institute of Vocational Education and Technological Work Research at the University of Flensburg – revolves around developing a European occupational profile and curriculum for the recycling industry. The German government expects both projects to generate important impetus for the future structure of basic and continuing vocational training.

Other activities include solar technology projects which make important contributions toward tapping into new occupational fields, boosting the skilled crafts' competitive strength and achieving effective climate protection in keeping with the objective of sustainable development.

The UNESCO's vocational training network UNEVOC – which Germany's Federal Ministry of Education and Research has helped fund since 1993 – injects sustainability into development cooperation and fosters environmental considerations in vocational training.

The Federal Ministry of Education and Research commissioned the feasibility study *Vocational Training for Sustainable Development* (MERTINEIT/NICKOLAUS/SCHNURPEL 2001) which provides a foundation for its future funding activities. This study points out opportunities for and limits to realizing sustainable development in vocational training and identifies relevant areas for activity.

Sustainable management considerations rank high when the examination requirements outlined in the regulations for continuing vocational training are formulated. These considerations are geared to the respective occupation. To cite one example, the continuing training regulations for foremen in the metal-processing industry cover the protection of waterbodies, soil conservation, waste disposal, air quality control, noise abatement, radiation protection and protection against hazardous substances.

The Learning Culture for Skill Development research and development program was set up to hone a systematic approach to developing skills. Designed to foster learning in the individual's job environment and private life, this program's objectives include developing skills that provide a springboard for action which reflects the principle of sustainable development.

Higher education

In its efforts to anchor the precept of sustainable development in the higher education field, the Federal Ministry of Education and Research funds the following projects in particular:

– The Uni 21 project. Conducted by CRE-Copernicus, this project is taking stock of and evaluating the contributions Germany's universities are making to sustainable development. As part of the Uni 21 project, measures, means and obstacles to implementing sustainability in the country's universities are being examined. The project's objectives are to identify ongoing or past activities at universities, point out avenues for future action, sound out possibilities for assisting universities at federal or Land level, collect good examples from actual practice, and contribute to the preparations being made for the 2002 World Summit on Sustainable Development in Johannesburg. The results of this work are to reveal the demands that Germany's universities will be facing and the strategies and options that could put them in a position to discharge their obligation to ensure sustainable development. Building on the results of this stock-taking, an expert's report is to be commissioned to determine how courses with content involving sustainable development can be more firmly anchored in higher education using study and examination regulations and innovative forms of teaching and learning. This particularly applies to teacher training. Models and projects have to be developed for this which focus most important-

ly on various aspects of interdisciplinarity and participation in instruction.

- The Integrated Environmental Technology fellowship program which is being conducted by the German Academic Exchange Service (DAAD). Extended in 2000, this program targets the use of innovative, environmentally friendly technologies in production and processing. In doing so, it taps into key sustainable development issues. The program was set up to foster the training and exchange of German and foreign scientists and experts who are involved in actual practice. Research fields covered by the program include agriculture / agricultural engineering, food technology, leather production, textile processing, forestry and wood processing.
- A demonstration program to foster international courses of study that involve partner schools in other countries. Offered every year since 1996, this program features in particular the following degree programs which deal with various aspects of sustainable management and action:
  - Humboldt University Berlin: Master of Science Program in International Agricultural Sciences
  - University of Göttingen: International Agricultural Science
  - Technical University of Cottbus: Environmental and Resource Management
  - University of Tübingen: Applied Environmental Geoscience
  - Eberswalde University of Applied Sciences: International Forest Ecosystem Management
  - Hamburg-Harburg University of Applied Sciences: Environmental Engineering
- The Sustainable and Competitive German Water Supply Industry action plan. The Federal Ministry of Education and Research and the German water supply industry developed this plan with the aim of boosting competitiveness in the international arena and concomitantly increasing Germany's contribution to solving the world's water problems. One of the plan's priorities is to ensure the transfer of knowledge through researcher mobility. To accomplish this, the ministry has set up a special fellowship program for international post-graduate studies in water management for young German and non-German scientists. The persons receiving these fellowships attend one of the international post-graduate degree courses in water management offered in Germany and can subsequently earn their doctorate. The objective of this program is to develop stable, international contacts and collaborative activities at scientific and technological level. The ministry's International Office at the German Aerospace Centre is responsible for conducting this program.

This action plan also envisions continuing training activities for German and foreign experts from the water management sector. The Carl Duisberg Society is currently conducting a study to determine the German water supply industry's exact need for export-oriented training measures.

- Participation in the Socrates' Erasmus program. This involvement will particularly stimulate university collaboration in Europe. More than 240 German universities have designed and undertaken activities in this area. These include degree programs and departments that deal with environmental protection and sustainable development.

General continuing education

Looking at the area of continuing education / adult education, the Federal Ministry of Education and Research fostered initial efforts to offer education for sustainable development during the last three years by assisting adult education “learning festivals” that were organized in numerous regions and communities. Taking the initiative, the ministry jump-started the learning festival movement in Germany in 1998 and has since supported these activities in close cooperation with the respective *Land*. UNESCO launched the International Adult Learners' Week during the Platform for the Future segment of its Global Dialogue on Building Learning Societies, the keynote event at Germany's learning festival in 2000. This step threw the growing importance of learning and the international dimension of education into high relief. The learning festival movement has increased people's awareness of continuing education's most important fields of activity and interests, such as Agenda 21, media skills, teaching literacy skills, strategies for new learning cultures, conflict and peace.

The German Institute for Adult Education which is jointly funded by the Federal Ministry of Education and Research and the Land governments deals with sustainability issues, primarily through the Environmental Education Clearing House. Among its various activities, the Clearing House manages a mailing list for researchers, practitioners, environmentalists and similarly interested parties which is used first and foremost to discuss education for sustainable development, the use of multimedia and the Internet in environmental education, and Agenda 21 (http://www.die-frankfurt.de/clear). This mailing list serves as a platform for a nationwide exchange of views and information on experience.

The Federal Ministry of Education and Research funds a number of other projects with links to sustainability in connection with developing lifelong learning, motivating and recruiting participants in continuing education, and continuing education and equality of opportunity. In addition to providing direct project funding, the ministry also assists environmental research facilities in connection with education for sustainable development by, for example, organizing seminars and events for multipliers or by supervising competitions with an environmental link.

Competitions and conferences

The Federal Ministry of Education and Research also supports a number of national competitions that are particularly geared to young people (see Section 6.2) and conferences. A few examples include the Bund-Länder Com-

mission's Learning and Shaping the Future – Education for Sustainable Development conference (see Section 4.1.3) and an interdisciplinary symposium entitled Typing in Socio-Environmental Research which the Free University of Berlin held in May 2000. It also assisted the Education for Sustainable Development – Global Perspectives and New Communications Media conference which the Association to Promote Community Education in the Federal Republic of Germany (COMED) held in Bielefeld in November 1999 (HERZ/SEYBOLD/STROBL 2001).

Cross-cutting activities

As part of its efforts to establish various elements of the sustainability principle in education, the Federal Ministry of Education and Research funds several projects that rather than focus on just one area, were also set up to have a cross-cutting effect on several fields of education. These projects include:

Projects in the area of lifelong learning and learning regions

The Learning Regions – Network Promotion program fosters the establishment and expansion of regional-level networks that span a number of fields of education and educational institutions and which develop and test innovative programs relating to lifelong learning. This in turn supports the development of a new learning culture that broadly fosters the individual's personality development and ability to act on his or her own account. It also improves the individual's employability. These supra-regional networks are to draw on and move forward from the experience gathered and collaborative structures found in towns, cities, *Länder* and regions, support the exchange of information on experience gathered and, most particularly, transfer findings from other programs. In doing so, these networks contribute to a broader application of innovation. These networks are also open to groups from the environmental education and global learning fields.

Education Forum

The Education Forum was initiated by the Federal Ministry of Education and Research. As indicated by its name, it provides a forum in which the federal and Land governments and representatives from various segments of society – such as business, science and the churches – work together. It will submit recommendations on key issues of Germany's education and science system by the end of this year. These recommendations will be designed to ensure the quality and competitiveness of Germany's education system vis-à-vis other education systems. The Education Forum focuses on educational aims and training objectives of the future; fostering equality of opportunity; quality assurance in comparison with other countries; learning all life long; and the new learning and teaching culture.

Current deliberations on education reform follow the precept of equality of opportunity. Their aim is to ensure in the best possible way that current and future generations have options and opportunities for participation, and to develop these options and opportunities even further where necessary.
An education system is viable when it helps improve the individual's performance, when it effectively demands and fosters creativity and responsibility, ensures equality of opportunity and turns the right to the best possible education into reality for everyone. Viability however also means that educational institutions themselves have to become learning systems. It is therefore necessary to develop instruments for measuring performance and to conduct national and international comparisons of performance in all education sectors in order to ensure and improve quality. Given that Germany has a considerable amount of catching up to do in comparison to other countries, this is also an important topic for the German government and the Education Forum.

The Chemical Sector Dialogue

Taking a sector-based angle approach, the Federal Ministry of Education and Research supports the Chemical Sector Dialogue between participating actors. The Sustainable Development in the Chemical Industry and Its Products status seminar was held in 1999 as part of the dialogue's examination of the sustainability concept. The ministry subsequently set up two panels of experts for the “research and development” and “education and training” fields in 2000. These two panels discussed and agreed upon recommendations for specific action. Giving due regard to sustainability considerations, the education and training panel developed proposals for the fields general and academic education, university training, and basic and continuing vocational training.

Efforts in the education sector aim at making teachers more effective in conveying basic scientific knowledge and findings in the classroom; adapting chemistry programs to meet future needs; developing profiles; increasing the competitive strength and internationality of Germany's universities; and improving basic and continuing vocational and academic training.

Results to date have included marked progress in overhauling chemistry degree programs, in collaborative activities with universities in other European countries, in vocational training in the chemical industry, and in establishing more favorable conditions for chemical research.

The Innovative Work Structuring – The Future of Work framework concept

The new Innovative Work Structuring – The Future of Work framework concept deals with sustainability issues in connection with the way work is structured and companies are organized and with the creation and safeguarding of jobs. Efforts here focus particularly on identifying obstacles to innovation and on developing instructive models for the sustainable use of natural and human resources at work. Other activities include developing methods and instruments and building business

administration skills for translating these models into reality.

Sustainable corporate development means integrating environmental, social and economic considerations into corporate decisions and strategies. Sustainable corporate development requires discussing new principles and integrated approaches that focus on more than long-term economic success and environmental factors and using this discussion as a springboard for developing potential avenues for action in actual practice. This should also include developing models and principles and mapping out development paths.

One of the first steps for underpinning these development paths is to draft a trend report on the various approaches used by sustainable work systems (SWS) and practical examples of such systems (done as part of an assessment of successful changes in the way work and companies are organized). Besides focusing on husbanding material resources in the production process, sustainable work systems typically restore and develop the individual's capacity for work at the same time that they expend it. Ways of organizing work that call for and foster collaboration, motivation, commitment, trust, knowledge and expertise, creativity and learning constitute the foundation for sustainable work systems. Therefore, this also involves ensuring that the learning that takes place during the work process also benefits the individual's work. Put in other words, sustainable work systems are interested in creating conditions that make it possible for employees to acquire skills on a long-term basis at work. The SWS trend report is part of the Work Structuring Balance Sheet project. The results of this project provide the foundation for further corresponding activities to be conducted as part of the Innovative Work Structuring – The Future of Work framework concept.

Other projects

The Association for Peace Education of Tübingen (www.friedenspaedagogik.de) is presently conducting the two projects Global Learning and Constructive Conflict Management. The Global Learning project is producing a multimedia CD-ROM for use as a teaching aid. The CD-ROM targets multipliers, particularly those in schools. However, it also addresses students in higher grades and offers thematic multimedia segments for examining 12 core fields of sustainable development.

The Constructive Conflict Consultation project has developed a number of multimedia products for teachers and multipliers which offer a means of learning about conflict, an area that has been neglected to date. Examples of international conflict and communication are also covered. These products include a CD-ROM, teaching aids in printed form, and Internet information on conflict consultation and a video film. These materials provide information about conflict (theoretical knowledge) and convey skills for dealing with conflict (knowledge that provides a springboard for action). They can be used for training and continuing education as well as for self-instruction.

4.2.2 The Federal Ministry for the Environment, Nature Conservation and Nuclear Safety

The Federal Ministry for the Environment, Nature Conservation and Nuclear Safety (BMU) and its subordinate agencies the Federal Environmental Agency (UBA) and the Federal Agency for Nature Conservation (BfN) base their work on the precept of sustainable development. During the period covered by this report, they funded a wide variety of projects involving education for sustainable development – with a special focus on environmental protection and nature conservation, in keeping with their respective purviews. They have created a scientific and empirical foundation – particularly in the area of socio-environmental research – that plays an important role in the realization and dissemination of education for sustainable development. The ministry's projects focus on a variety of educational fields, competitions and, most importantly, environmental communication and the professionalization of Germany's environmental protection and nature conservation associations. Local Agenda 21 projects are also being conducted.

Preschool, primary and secondary school education

In the area of preschool, primary and secondary school education, the ministry supports the Miracles from Compost project which teaches children how to compost at school. These children act as multipliers, introducing their parents (i.e., private households) to the correct way of composting. As a result, valuable compost is being recovered from the contents of compost containers.

The Students' Agenda 21 project offers moderator-supervised project work at schools. The moderators for this project are specially trained recruits who are serving a Voluntary Ecological Service Year. Set up to run several years, this project is testing a new approach in which school-leavers initiate environmental protection projects at schools and assist them in their capacity as moderators. When moderators leave the program upon completion of their Voluntary Ecological Service Year, they pass on their experience to the next group of moderators.

As part of the Children's Environment Day project, children will be holding their own environment day with a special motto around the time of World Environment Day (June 5). This project was set up as a creativity contest for primary schools. Children participating in the project get ideas from activity folders that contain information on the topic being spotlighted. Their job is to conduct effective local campaigns in which they present their view of environmental conditions and make calls for action.

Out-of-school education

The environment ministry and the Federal Environmental Agency also support a number of projects in the out-of-school education field. These include the presentation of the Kunterbunt (“potpourri”) exhibition which revolves around child care at consumer trade fairs. These efforts use play-like activities to convey age-appropriate envi-

ronmental information to children and motivate them to take an interest in environmental protection matters. Mention must also be made of the Environment Youth Camps project which focuses on operating model summer camps where children and juveniles can become acquainted with environment protection and nature conservation projects. Center stage in the Environmental Detective project is given to the fun of discovery. This project aims to prompt and hone observation skills and arouse children's curiosity and investigative spirit. The Kids Help Implement Agenda 21 project collects examples of environmental project work being done with children and publicizes them to inspire other children to launch their own activities. The Youth Experiences Nature project provides ideas for an "experience nature" day. New methods of teaching nature conservation are being developed and tested in several trial and development projects such as the Wadden Sea House in Wilhelmshaven and the Multimar Wattforum visitor center in Tönning. Other innovative information and education centers are currently in the works.

Vocational training

In the vocational training sector, the Federal Ministry for the Environment, Nature Conservation and Nuclear Safety, the Federal Ministry of Consumer Protection, Food and Agriculture, and the Federal Ministry of Education and Research, working together with employers' associations and unions in the agriculture field and nature conservation organizations and institutions, formulated the 1998 Further Training Regulation and framework curriculum which established the occupation of "examined ranger" as the first non-academic occupation in the nature conservation field. The eight *Länder* that offer this advanced training are responsible for institutionalizing and implementing this regulation. In 1999, the environment ministry conducted or funded a number of concrete measures together with the agriculture ministry and relevant associations to foster this new occupation. In March 2001, the Federal Institute for Vocational Training began evaluating the progress made in the ranger occupation. This work is being supervised by the Federal Ministry of Education and Research, the Federal Ministry for the Environment, Nature Conservation and Nuclear Safety, the Federal Ministry of Consumer Protection, Food and Agriculture, employers' associations and unions and should be completed by the end of 2003.

The Green Job Market conference held in Erfurt in 1999 provided interested young people at all levels of education and with a wide variety of interests guidance on occupations and employment in the environmental protection field. The ministry's Innovative Work Structuring – The Future of Work framework plan also deals with sustainability issues in connection with the way work and companies are organized and the creation and safeguarding of jobs. Particular emphasis is placed on identifying obstacles to innovation and on developing instructive models, methods and instruments for the sustainable use of resources in companies.

Higher education

The ministry provided funding for the *Umweltstudienführer* environmental studies guide (DE HAAN/DONNING/SCHULTE 1999) during the period covered by this report. This manual lists all course offerings related to environmental studies, from undergraduate courses to postgraduate studies (see Section 3.4).

Continuing education

The ministry has funded numerous activities in the continuing education field in the years since 1997. Examples include continuing education activities, symposia, studies and conferences on different subjects. These activities were aimed at variety of target groups (e.g., managers and politicians, environmental educators and consultants, tourism experts). In addition to this, development and testing projects help put research findings to use in nature conservation and develop exemplary processes for this purpose. This work has a knock-on effect throughout the country. Mention is also to be made of the special approaches being taken to solving problems. These approaches are aimed at, *inter alia,* increasing the level of acceptance for nature conservation using educational and information centers and participatory models.

Environmental communication

The Federal Ministry for the Environment, Nature Conservation and Nuclear Safety – and the Federal Environmental Agency (UBA) and the Federal Agency for Nature Conservation (BfN) which fall under its purview – pushed environmental communication forward during the reporting period, using not only conventional means of communication such as campaigns, exhibitions and brochures but also the Internet, in response to the fact the Internet has triggered radical change in today's information society. The ministry overhauled and expanded its homepage (http://www.bmu.de) in the summer of 2000. Today, it offers some 3,000 pages with information on topical environmental issues, an online order service and an extensive list of links to various environmental subjects and organizations.

The German Water Association's Water Is Life exhibition has been on tour for 30 years. Organized on behalf of the ministry, this exhibition teaches people about water and water conservation, encourages awareness of water-related problems and provides information and advice aimed at changing people's habits. This exhibition has drawn more than three million visitors to date.

The Overdose project ("Dose" is the German word for can) targets waste avoidance and the younger generation. Using special events to campaign against non-returnable cans, this project counters the "fun" element that soft drinks and energy drinks in cans have come to represent with "cool" arguments aimed at stemming the trend toward disposable cans. The Town and Country youth conference brought together the environmental movement among the young and has demonstrated how to conduct a

mass rally that is as environmentally friendly as possible. The Ökomedia–International Environmental Film Festival is an important forum for environmental communication which the ministry has funded since 1985. The second national Nature Conservation 21 competition which the Federal Agency for Nature Conservation (BfN) launched in April 2001 – this time with the slogan "Spots for Nature" – is another such forum. Its aim is to foster new forms of communication that use the film medium. In keeping with the motto "Making the transition from the fossil fuel and nuclear energy age to the solar and efficient energy age," submissions are to convey the message to a broad public that there is demand for a reliable, economic and environmentally sensible supply of energy that conserves fossil resources, helps protect the climate and is environmentally friendly. The entries draw not only on conventional means of communication but also today's easy-to-use digital media.

The ministry developed a strategy plan to improve communication and reasoning in the nature conservation field, foster appreciation of nature and encourage support for nature conservation measures. Entitled Initiatives to Improve the Acceptance of Nature Conservation, this plan covers a three-to-four-year period. As part of it, the Federal Agency for Nature Conservation (BfN) will conduct several research projects on, for example, the arguments used in nature conservation or the level of acceptance of nature conservation exhibited by different types of lifestyles. Another important focus of this strategy is on developing and testing new forms of dialogue between the ministry and societal actors. The 25th German Nature Conservation Conference in 2000 which chose Communication, Education and Information in Nature Conservation as one of its priority topics provides one example of this type of collaboration.

December 2000 marked the start of preparations for the publicity campaign that the ministry initiated to commemorate the tenth anniversary of the Convention on Biological Diversity in 2002. This campaign will include a variety of publicity events and public relations measures under the motto Life Needs Diversity which will be conducted in conjunction with a wealth of actors from Germany's federal, state and local governments, non-governmental organizations from the nature conservation, environmental protection, landscape management and development policy fields, foundations and business to make it clear how important biological diversity is for people's day-to-day lives and to enlist support for the Convention's objectives (http://www.biologischevielfalt.de).

Funding for associations

The provision of funding for environmental protection and nature conservation associations is one of the environment ministry's key instruments for fostering communication and education for sustainable development. This assistance serves to professionalize important actors in the sustainability process and supports environmental protection and nature conservation associations in their role as multipliers. The ministry provides funding for specific projects which represent a wide spectrum ranging from projects with a focus on topical environmental issues such as environmentally sound mobility, climate protection and energy to the Flora and Fauna Habitats Directive, bat protection, wildlife parks, awareness-raising, landscapes and recreational sports to the implementation of Local Agenda 21s, land development plans all the way to sustainable tourism and the pinpointed funding of youth environmental protection associations.

Local Agenda 21s

The Federal Environmental Agency (UBA) supported Local Agenda 21 activities through the Popular Participation in Local Agenda 21s project that ended in 1998 (see also Section 3.6). This project focused on communication activities undertaken as part of Berlin's Local Agenda 21 initiatives (DE HAAN/KUCKARTZ/RHEINGANS-HENTZE 2000).

The Federal Agency for Nature Conservation (BfN) funded a project to develop a handbook titled *Local Agenda 21s and Nature Conservation – A Guide for Cities, Towns and Districts.*

Other projects

The environment ministry and the Federal Environmental Agency (UBA) have also assisted many research and development projects involving education for sustainable development. Particular note should be made here of the studies on environmental awareness that are being conducted on a regular basis (see Section 2.2.1).

The ministry and the UBA also funded the *Recommendations on Ecology and Learning* manual which provides guidelines for instructors and other actors in both the school sector and other educational fields. The manual recommends "trendsetter" instruction materials for the type of environmental education that sees itself as education for sustainable social development.

The testing phase for the CSD indicator list in Germany (see Section 2.1.2) started with an analysis of the indicators. The Federal Environmental Agency commissioned research projects on four of the areas covered by this list, with Environmental Education and Awareness being one of these four areas.

4.2.3 Federal Ministry of Economic Cooperation and Development

The Federal Ministry of Economic Cooperation and Development (BMZ) attaches great importance to development education when assigning its policy priorities. During the reporting period, the ministry boosted development policy education work (not including press and public relations work) by increasing the funding it provides from DM 4.2 million in 1998 to DM 7 million in 2001.

Primary and secondary school education in the Federal Republic of Germany

The ministry's work gives priority to primary and secondary school education. Seeking to further improve its efforts in this field, the ministry set up an Advisory Board for Development Education in Schools whose members include representatives from the Standing Conference of Ministers of Education and Cultural Affairs of the *Länder* in the FRG, development cooperation departments of Germany's *Länder*, scientific bodies and NGOs.

The Federal Ministry of Economic Cooperation and Development especially supports the production and dissemination of audiovisual and print media for school and out-of-school education. In addition, the ministry also acquires the non-commercial rights to particularly successful films on the situation in developing countries, One World topics and development policy. These films are then copied and released for public distribution.

Collaboration with partner countries – Scientific cooperation, advanced training and dialogues

The German Academic Exchange Service (DAAD), the Alexander von Humboldt Foundation (AvH) and the Deutsche Forschungsgemeinschaft (DFG = German Research Foundation) conduct collaborative activities with developing countries at scientific and university level on behalf of the ministry. Corresponding funding was provided in 2000 for scientific cooperation and for practice-oriented continuing training for experts and managers from developing countries. Germany's *Länder* and various public institutions also provide assistance by financing scholarships and grants and supplying training facilities and instructors. The business sector provides internships, in some cases at no charge. The people participating in the measures conducted on behalf of the German government are younger specialists and managers in partner countries who could help shape sustainable development processes from the scientific, economic and political "control centers" in their respective country. The intention here is to have these people act as multipliers who apply and pass on the knowledge they have acquired in the course of this training. With this in mind, the ministry's development cooperation is aimed at developing educational resources and knowledge networks and at generating concrete institutional and sectoral effects – particularly through its practical advanced training – in partner countries.

The ministry's non-academic, advanced vocational training programs for specialists and managers from developing countries and countries in economic transition are conducted primarily by the Carl Duisberg Society (CDG), the Germany Foundation for International Development (DSE) and the Deutsche Welle's Advanced Training Center (DWFZ) on the its behalf.

The Ministry of Economic Cooperation and Development supports the use and development of modern instruction media such as the Internet in the advanced political education field. The Carl Duisberg Society and the German Foundation for International Development set up Global Campus 21 in 2000, an Internet platform for international training and follow-up contact. Global Campus 21 is an information portal for past, present and future participants in programs sponsored by the Carl Duisberg Society or the German Foundation for International Development. It is also an important instrument for fostering dialogue between partners in Germany and abroad. Global Campus 21 offers a broad range of information and opportunities for pursuing a dialogue on advanced vocational training. This portal also offers online learning programs, most of which were designed to supplement courses and seminars with compulsory attendance.

A total of DM 43 million was allocated in 2000 for programs involving scientific collaboration. Some DM 108 million in program funding (not including basic funding for institutions) went to practice-oriented advanced training for specialists and managers the same year.

Services

The previously mentioned Service Agency Municipalities in One World is scheduled to start operation in early 2002. Its job will be to strengthen local development cooperation with partners in other countries (through bilateral and multilateral projects) and to integrate the One World dimension in action programs being conducted as part of Local Agenda 21 activities. This agency is also a point of contact and service provider for interested parties from all areas of society. It will be managed by the association that will be established following the merger of the Germany Foundation for International Development (DSE) and the Carl Duisberg Society (CDG) (see Section 3.6).

The Federal Ministry for Economic Cooperation and Development also provides government funding for the World University Service's (WUS) Education Service North-South and – together with the environment ministry – for the German NGO Forum on Environment and Development. The Forum monitors the implementation of Agenda 21 in Germany and advises on policy matters. The European Education and Action Group (EBAG) in Bonn has organized a lecture service on behalf of the ministry. This service helps governmental and non-governmental organizations that are looking for speakers for the activities they sponsor.

VENRO conference

The Education 21 – Learning for Fair and Sustainable Future Development conference sponsored by the Association of German NGO's (VENRO) was held in Bonn in September 2000 in conjunction with the Federal Ministry of Economic Cooperation and Development, the ministers of education and cultural affairs of the individual Länder and the Land departments responsible for development cooperation. Some 700 persons from schools, the out-of-school education field, politics, government agencies and science attended the conference which generated important impetus for the continued development

of education for sustainable development in Germany. The conference adopted principles for development education work and global learning. Education 21 revealed how important it is to include global learning in education for sustainable development.

VENRO in general and its Development Education working group in particular provide a supraregional platform for networking the education work being done in the Länder.

4.2.4 Federal Ministry of the Interior Training

The Federal Ministry of the Interior (BMI) is responsible for training junior staff preparing for an administrative career in the clerical or executive class of service in the federal government's general and internal administration. It is also in charge of the continuing training of persons who work for the federal administration. The work of the Federal Agency for Civic Education and funding for the political parties' foundations also fall under the ministry's purview.

Training for the above-mentioned administrative careers is provided by the Federal Office of Administration and the German Federal University for Applied Public Administration. These courses also cover environmental content, in keeping with current standard learning objectives on environmental protection that training regulations for the dual vocational training system stipulate. Creating environmental awareness – in the form of a regular examination of administrative activities with an eye to ensuring the rational and economic use of resources – is an integral part of the practical training provided by these institutions. Theoretical instruction for the clerical class of service also covers the subject of environmental protection. All courses are reviewed to determine whether they deal with environmental issues. Such issues are added where lacking. Plans are being made to flank the training provided for the executive class of service with management simulations on the subject of sustainability / ecology in public administration.

Advanced training

The Federal Academy of Public Administration in the Federal Ministry of the Interior (BAköV) is the federal government's most important advanced training facility. As such, it adopted the principle of sustainable development and geared its work to this at an early stage. The principle of sustainable development means two things for job-related advanced training. First, it offers an opportunity to acquaint federal employees from all areas and levels of service with the objectives of sustainable development and to increase their commitment to achieving these objectives in their particular area. Second, advanced training itself must also be organized on a holistic basis in order to be successful on a long-term basis. The Academy has pursued a variety of activities in both areas in recent years. These include the following:

The academy offers a number of activities in the area of introductory advanced training for members of the executive and administrative classes of service (and the clerical class in the future) during the first phase of their employment with the government. One example of such activities are seminars that foster communication and focus on behavior. Participants in these seminars learn key skills aimed at enabling them to find cross-cutting solutions in their respective area of responsibility.

In the area of subject and task-specific advanced training, employees whose decisions impact the environment can attend seminars on the subjects of “economy and ecology” or “environmental impact assessments.” These seminars give special attention to introducing participants to a holistic way of viewing their field of activity.

The academy is also attentive to ensuring that the fundamental idea of sustainable development – linking the objectives of economic development, social equity and ecological carrying capacity with one another – is included in the planning of all subject and task-related seminars that touch on these topics. These are primarily seminars in the areas of awarding public contracts, the grant system, legislative impact assessments, drafting of administrative regulations as well as controlling, quality management, economic feasibility studies and, not least of all, process optimization and organization. Advanced training in European and international fields should also be mentioned. In particular, government employees who discharge duties in the international field should be constantly aware of the connection between economic development, respect for environmental concerns and social responsibility.

The Academy emphatically supports the process for modernizing government administration, a process aimed at injecting more efficiency into working methods and greater quality and flexibility into administrative activity and at eliciting a higher degree of transparency and greater participation on the part of the individual – and thus complies with the principle of sustainable development.

The principles underlying sustainable development play a vital role in advanced training for senior staff which is becoming increasingly important in respect to administrative modernization. In addition to providing subject and task-related advanced training, the Academy also teaches so-called soft skills in a behavioral training course.

In the area of advanced personnel management training, it increasingly advises ministries and subordinate agencies in connection with the modernization of their administrative structures. The Academy flanks these offices' new strategic personnel and organization development projects with targeted advice and project-related training. In keeping with the precept of sustainability, these activities are primarily aimed at the following two objectives:

– To systematically involve senior administrators, personnel offices, superiors and employee representatives to ensure that the individual federal employee's work is also linked to personal development – and concomitantly boosts the individual's level of acceptance for his or her work.

– To gear further training to an on-the-job transfer. Individual learning objectives alone cannot provide a foundation for medium and long-term developments. Linking these objectives with the effects that the further training is supposed to produce (in the long run, vis-à-vis private citizens) lays it.

Political education

The Federal Agency for Civic Education (BpB) works in the political education field toward implementing the concept of sustainability. Strengthening environmental awareness and disseminating development-related knowledge are important concerns for the Agency. It assists local groups that are politically active on the lines of Agenda 21 by providing information on good examples. Taking a holistic approach to its work, the Agency will be placing more emphasis on the interlinkage with economic and social development in the future.

The Agency produces a variety of publications as part of the work it does for sustainable development. These publications cover subjects such as development and peace as influenced by globalization; ecology and environmental protection policy; and energy and the greenhouse effect. The *Das Parlament* newspaper has dealt with the subject of sustainable development in several of its *Politics and Contemporary History* supplements. A number of issues of *Information on Political Education* on Africa, India and Latin America have examined the subject of developing countries and globalization.

The Federal Agency for Civic Education conducted a number of events with a link to sustainable development in 2000. These included Current Concepts and Trends in Environmental Education (September 2000) and Quo Vadis Pomerania – Nature Respects No Borders – Do We? (August 2000) where multipliers from Germany and Poland presented themselves and their cross-border collaborative activities against an environmental policy bakkdrop, and post-open-pit-mining landscapes in Germany's eastern *Länder* (July 2000).

Political foundations

Foundations that are associated with political parties that are represented in the German Bundestag are funded through block grants for socio-political and democracy-oriented education work. The Federal Ministry of the Interior allocates these grants. Germany's political foundations have also added sustainable development to the subjects covered by their education work.

The sustainable development activities organized by the Friedrich Ebert Foundation (FES) cover content from the environmental education and development education fields such as the combination globalization, an equitable global economy and development policy. The Foundation also makes use of its collaborative activities with other organizations and institutions for its work. It has conducted education measures on sustainable development in Germany's eastern *Länder* since 1990. These measures provide basic information on environmental protection, Agenda 21 and its implementation. The Foundation has been integrating the sustainability concept into various areas of its political education work over the last several years.

As part of its political education work, the Konrad Adenauer Foundation (KAS) provides information on Agenda 21 and related decisions regarding the political course to be taken at local and international level. It also points out options for concrete action. The Foundation supports the key objectives of sustainability through its consultancy services and continuing education offerings. In addition to this, the Konrad Adenauer Foundation organizes international conferences on sustainable development at venues in Germany, Latin America and Asia and conducts target group-oriented seminars and programs on environmental protection in Germany.

The Hanns Seidel Foundation (HSS) sponsors activities at its Academy for Politics and Current Events that are aimed at disseminating the principle of sustainable development and encouraging people to assume more responsibility for future generations. The primary focus of these activities is on alternative energy technologies and on the relationship between resources, economy, ecology and social equity. The Foundation also organized activities that revolve around Agenda 21.

The Friedrich Naumann Foundation (FNS) has directed considerable attention to education for sustainable development in its political work. As part of these efforts, the Foundation organizes development policy activities and measures to increase environmental awareness, usually in cooperation with public interest groups.

Sustainable development is a central theme of the education work pursued by the Heinrich Böll Foundation (HBS). Primary activities for the period 2000 through 2002 are the Rio + 10 conference, the networking of projects in North and South, and the field of “ecological” economics that has been growing for some time now. The Foundation's Sustainable Development (Ecology and Social Affairs) program organizes activities with various collaborators.

The Rosa Luxemburg Foundation (RLS) focuses on the themes future and sustainable development, giving center stage to important problems seen in current social developments, social analysis and the formulation and implementation of alternative reform proposals. Key issues dealt with in the Foundation's educational offerings include the socio-ecological reorganization of society, ensuring social cohesion, the development of a new employment policy, equality, and the strengthening of civil rights.

4.2.5 Federal Ministry of Finance

The Federal Ministry of Finance (BMF) trains young recruits in the federal revenue administration system. A special role is assigned the Federal Forest Administration in this connection. Working on a cross-departmental basis, the Federal Forest Administration oversees all forests

and some of the open ground owned by the German government. Germany's federally-owned forests are managed not only with their particular purpose in mind, but also in keeping with several principles, the foremost being to preserve and develop lasting, ecologically stable forests which over the long term meet the respective interest in its use while limiting the adverse impact (e.g., through noise or dust) on surrounding man-made landscapes. A further principle is to maintain and develop all benefits and protective functions that the country's forests (and their transition areas) provide for the soil, water balance, climate, countryside and the plant and animal communities found there. This includes protecting naturally occurring ecosystem processes. Generating the best possible operating results as prescribed by the principles of economic efficiency and profitability is also important here. The ministry regularly conducts seminars for employees of the Federal Forest Administration to ensure that these responsibilities and objectives are met.

4.2.6 Federal Ministry of Economics

All training regulations in the dual vocational training field have included sustainability-related learning objectives for a number of years now. Training occupations that have been revised or created in the years since 1997 – regardless of whether their focus was industrial-technical or commercial-administrative – are geared to the principle of basing action on holistic contexts. Standard training for these occupations includes Safety and Health Protection at Work and Environmental Protection.

At the ministry's initiative, a working group set up at the Federal Institute for Vocational Training with representatives from employers' associations, labor unions, the Federal Ministry of Economics (BMWi) and the Federal Ministry of Education and Research is currently examining the possibility of incorporating the precept of sustainable development even more explicitly in training regulations. The working group has already agreed upon adding a provision to all training regulations which would stipulate that instruction content is to give due regard to the principle of sustainable development. In addition, the working group is considering integrating a “sustainability” training element that delineates the environmental, economic and social dimension of this term as an additional standard training element in the framework curricula of at least the industrial-technical occupations. At the same time however, there are already cases in which training requirements that go beyond standard learning goals have been established on a binding basis with the aim of fostering sustainable management. Outstanding examples of this are laboratory-related occupations and the chemical technician and pharmaceutical technician occupations. A new training element entitled In-Company Measures Aimed at Responsible Care has been added to the training regulations for these occupations. This element covers not only Environmental Protection and Occupational Health and Safety but also the sustainability-related aspects Use of Energy Sources; Quality Management; and Economic Efficiency in the Lab / Cost-Oriented Operations (see Section 4.2.1).

4.2.7 Federal Ministry of Consumer Protection, Food and Agriculture

The German government's agriculture and consumer protection policies focus on implementing sustainability strategies quickly and comprehensively in the production, processing and consumption fields.

Consequently, the activities pursued by the Federal Ministry of Consumer Protection, Food and Agriculture (BMVEL) in connection with education for sustainable development focus on the following areas:

- Agriculture-related vocational training,
- Funding for continuing vocational training measures,
- Consumer education on the principles of sustainability and sustainable consumption,
- Pilot projects that focus on the sustainable development of rural areas.

Agriculture-related vocational training

In light of the fact that agricultural specialists and managers have special influence on and responsibility for the ecosystem and environment, the ministry paid special attention to integrating environmental considerations and elements of a sustainability strategy into Germany's agricultural training and advanced training regulations when it revamped them.

Agricultural training occupations are among those occupations which have already established binding training requirements that go beyond standard learning goals with an eye to fostering sustainable management. For example, agricultural training regulations now require social skills to be taught on a targeted basis during in-house training, an element of training that plays a fundamental role in realizing sustainable development.

However, more effort – particularly in the continuing training of in-company instructors and training counselors – will be needed for translating the sustainability concept into action as foreseen by Agenda 21. The extent to which society accepts the principle of sustainability will be a decisive factor in the speed at which and extent to which sustainability strategies become an extensive part of in-company training practice.

Complex, holistic examination methods were systematically incorporated into agriculture-related training and continuing training regulations. This step significantly increased the emphasis on the acquisition and testing of key skills.

Working together with the Federal Ministry of Economics, the BMVEL issued the Ordinance on Vocational Training for Road and Traffic Technology Specialists and for Water Management Specialists during the reporting period, creating a new training occupation that is particularly pertinent to the implementation of the sustainability concept. Water management specialists work for planning departments and administrative offices and render planning and monitoring services in collaboration with engi-

neers. Consequently they have a wide range of responsibilities in the implementation of sustainability strategies.

The continuing training regulations for rangers were standardized for the entire country in response to the need for skilled workers in this field which developed in recent years. The ministry continuously consults with employers' associations and trade unions on whether other state-recognized continuing training occupations are necessary for the implementation of Agenda 21 objectives in the agricultural field.

Funding continuing vocational training measures

In its funding of national-level information events which are conducted by rural organizations such as rural youth and rural women's associations, the ministry has assigned increasing priority in recent years to subjects of pertinence to achieving sustainable development. Rather than being tailored to only those people who are directly involved in agriculture, these measures target all people living in rural areas. Today, numerous institutions in the agricultural continuing education field conduct projects and offer a wide range of activities aimed at the sustainable development of rural areas.

The competitions for trainees in agricultural occupations which have been conducted with ministry assistance have been continually developed in the direction of responsible and sustainable management in recent years.

Consumer education

In light of the fact that consumer behavior ultimately decides whether sustainable methods of primary agricultural production, food production and food marketing become established on a long-term basis, consumer education plays a vital role in accomplishing the shift toward giving much greater consideration to sustainability principles which agricultural policy has initiated.

Given that habits are acquired and reinforced during childhood and adolescence, consumer education must start at the earliest possible age. Consumer education aimed at children and youth consequently places special emphasis on the principles of sustainability and various aspects of sustainable consumption.

Research and pilot projects

As part of its efforts to ensure the sustainable development of Germany's rural areas, the Federal Ministry of Consumer Protection, Food and Agriculture gives special attention to conducting research and pilot projects that help the development and implementation of sustainability strategies. The pilot and demonstration projects that are being prepared in selected regions are particularly important in this connection. These projects are to signal the increased orientation to the principles of sustainability that characterizes Germany's new agricultural and consumer protection policies. Up to DM 69 million will be made available for these projects during the period 2002 through 2005. Model regions are being selected through the Active Regions – Rural Areas Shape the Future competition. Thanks to this method, these projects have an impact that extends far beyond the selected model regions themselves.

4.2.8 Federal Ministry of Labor and Social Affairs

The activities pursued by the Federal Ministry of Labor and Social Affairs (BMA) – and its subordinate agencies and social security agencies (the Federal Institute for Occupational Safety and Health, the Federal Insurance Office, the Federal Labor Services, Federal Union of the Statutory Accident Insurance Institutions of the Agricultural Sector, the Hauptverband der gewerblichen Berufsgenossenschaften, the main association for commercial social insurance against occupational accidents, and the Association of German Pension Insurance Carriers) – involved the following priorities:

– Environmental protection was an integral part of the training measures that were conducted. The subject of environmental protection was incorporated into the occupational profiles of a number of training occupations such as social insurance clerk and labor promotion specialist when the vocational training requirements for these occupations were overhauled. The curricula used by the Labor Administration department at the German Federal University for Applied Public Administration have a variety of ties to environmental topics. The same applies to the public administration courses offered by the state-recognized Statutory Accident Insurance College. Furthermore, the Federal Institute for Occupational Safety and Health advocates incorporating the concept of sustainable chemistry into chemistry and related degree programs. This initiative is of vital importance not only for occupational safety, environmental protection and consumer protection, it is also crucial to ensuring Germany's future as a location for chemical research and production.
– The Federal Ministry of Labor and Social Affairs and nearly all of its subordinate agencies and social security agencies have integrated the principle of sustainable development into their external services and public relations work. One example of this is the German Occupational Safety Exhibition which the Federal Institute for Occupational Safety and Health maintains as a permanent service. Drawing more than 200,000 visitors a year, this exhibition underscores the fundamental value of a healthy workplace and the importance of human resources for the economy of today's nascent knowledge-based society. In the process, it fosters first and foremost the social dimension of sustainable development and raises public awareness.
– A number of the job-creation programs and structural adjustment programs conducted as part of the German government's active employment promotion efforts contribute to improving or rehabilitating the environment. Structural adjustment programs provided employment in the environmental rehabilitation field for

an average of some 27,000 people in 1999. People participating in these programs obtain know-how in and experience with environmental contexts and become more aware of environmental protection.

4.2.9 Federal Ministry of Defense

The basic and continuing environmental protection training that the Federal Ministry of Defense (BMVg) offers members of the Bundeswehr (federal armed forces) is aimed primarily at putting soldiers and employees in a position to discharge environment-related tasks efficiently. The objective of these activities is to protect people and the environment.

Soldiers receive practical instruction in environmental protection during basic training. The subject of environmental protection has been incorporated into general military training. Regular and non-commissioned officers are taught environmental protection during their career and assignment training.

The ABC and Self-Defense Academy in Sonthofen is the main training center for soldiers whose primary or secondary responsibility in their work is environmental protection. The academy launched environmental protection training in 1991. Since then, it has conducted 12 different environmental protection classes – each for some 300 soldiers – every year.

People employed by the Federal Defence Administration receive basic and continuing environmental protection training during their career training or in separate courses. The syllabus for civil servants in the executive non-technical class of service who are enrolled in the Armed Forces Administration department at the German Federal University for Applied Public Administration includes the subject environmental protection. Civil servants in the executive and administrative technical classes of service undergo a five-day course in environmental protection following their career training. The Federal Academy of Defence Administration and Technology in Mannheim conducts some 20 special courses every year for 700 civilian employees of the Bundeswehr who have environmental protection functions. Sixty engineers have also completed a six-month post-graduate course in environmental protection at the Academy to date.

The engineering program at the Bundeswehr University in Munich offers Environmental Law/Environmental Technology as an area of specialization.

State examined engineers can take advanced courses in Technical Environmental Protection at the Engineer School and School of Construction Engineering.

4.2.10 Federal Ministry for Family Affairs, Senior Citizens, Women and Youth

The Federal Ministry for Family Affairs, Senior Citizens, Women and Youth (BMFSFJ) funds federal infrastructures used by out-of-school political and cultural education through a wide variety of assistance measures under the federal government's Child and Youth Services Plan. It additionally supports projects that involve first and foremost the Agenda 21 field, the participation of children and youth, and efforts to foster equality of opportunity. The ministry is also responsible for the Environmental Volunteer Service Year and civilian service that is performed as an alternative to military service.

Preschool, primary, secondary and out-of-school education

Aiming to acquaint children with environmental education and sustainable development as early as possible in life, the ministry provides funding for brochures, model projects and information kits that are suitable for enriching environmental learning at day care centers. The ministry has also commissioned a touring exhibition on ways to design and organize outdoor play areas for preschool facilities to be near-natural.

Learning projects that require student participation and generally involve actively shaping the immediate environment dominate the out-of-school offerings that the ministry funds.

In the area of environmental education in sports, the Federal Ministry for Family Affairs, Senior Citizens, Women and Youth funds numerous projects which the German Sports Youth association conducts on the subject of environmental education in sports. It has also developed an ecology kit. At the same time, it has incorporated this topic as an element of instruction into all forms of technical and cross-cutting training.

Participation of children and youth

Working on the ministry's behalf, the German Youth Institute examined models for civic participation on the part of children and youth from 1998 through 2000. This research project revolved around the participation of children and youth in organizing and decision-making processes that occur in socially regulated forms outside the family. Regulations that stipulate the participation of children and youth have provided vital impetus for the development and dissemination of opportunities for participation. Volume VIII of the Social Code (Child and Youth Services Act) which has applied to the entire Federal Republic since 1991 and the UN Convention on the Rights of the Child which was signed in 1990 and subsequently ratified by Germany's Bundestag and Bundesrat in 1992 are of particular importance in this connection. Opportunities for participation range from formal or legally grounded participation – in joint student-teacher administrations or children's or youth parliaments – to short-term, project-related models for participation such as revamping a playground or planning and building a half pipe for skaters. The final report on the study is scheduled to be published in book form in late 2001.

The German government assigns priority to increasing the number of opportunities for participation available to

children and youth (and concomitantly contributes to sustainable development) through its Opportunities in a Changing Society youth policy program which the federal cabinet approved in the autumn of 2001. The government launched the Campaign for the Participation of Youth under the patronage of Chancellor Schröder to draw public attention to the issue of young people's participation, generate nationwide impetus for their participation and, in cooperation with the Länder, local authorities and youth associations on the ground, get young people mobilized. The participation movement is to be taken to those parts of society where youth are to be found – families, recreational and sports facilities, schools, universities, training centers and companies.

International youth cooperation

As part of its international youth policy, the Federal Ministry for Family Affairs, Senior Citizens, Women and Youth funds programs that organize meetings and collaborative activities between youth and youth work experts. The ministry's international youth policy makes it possible for young people to become acquainted with other countries and cultures. The objective behind these efforts is to enhance mutual understanding, dismantle prejudices, encourage the individual to critically examine his or her own views and promote cross-border collaboration and the exchange of information on experience gathered in the youth services field.

Sustainable development is becoming an increasingly important topic at events that bring young people together and in programs for trained personnel. Sustainable development is one of six focal areas covered by these programs; these focal areas were laid down in bilateral government agreements regarding funding for these programs.

Measures to foster gender equity

The ministry's efforts to foster gender equity include ongoing assistance for activities for multipliers that were designed to promote environmental awareness and implement Agenda 21 from a women's affairs policy standpoint.

It provides funding for the Gea-Net – Girls for an Environmental Europe project as part of its medium-term action program to establish equal opportunities for women and men. The Gea-Net project was conceived to increase and improve girls and young women's opportunities for entering science and technology. Plans for raising awareness of subjects involving the environment or sustainable development are being developed for this project. Another objective pursued by the Gea-Net project is to increase women's participation in societal decision-making processes.

The ministry also funds the SELF – Women Shape Rural Structural Development pilot project which is being executed by the German Rural Women's Association. This project is aimed at helping women working in business-oriented projects being conducted by rural women's organizations in Germany's eastern *Länder* and at assisting individual women with start-up projects of their own. The environmentally sound production and marketing of food plays an important role in many of these start-ups.

Volunteer work, self-help and honorary offices

Strengthening civil society – with the object of boosting active participation on the part of private citizens – is of fundamental importance for sustainable development. The UN International Year of Volunteers 2001 opens up special opportunities for drawing attention to the scope and substance of volunteer work being done in Germany, promoting greater public recognition of this work and improving the economic, social and political environment for volunteerism.

In preparation of the UN International Year of Volunteers, the Federal Ministry for Family Affairs, Senior Citizens, Women and Youth commissioned a nationwide representative survey which revealed that 34 percent of all Germans who are 14 years of age or older – 22 million people – do volunteer work in various areas including environmental protection and nature conservation in their spare time. Further, nearly 22 million people would be willing to take up volunteer work or do more work on an honorary basis. Steps must be taken to activate this potential for additional involvement – by ensuring appropriate conditions and, most importantly, by providing information and advice at local level.

Seen from the vantage point of lifelong learning, this high level of voluntarism also represents an important resource for educational measures aimed at sustainable development.

A national campaign entitled What I Can Do is Priceless, a traveling exhibition and the publication *Guidelines for Local Authorities on Providing Information and Advice on Volunteer Work and Self-Help* are making the aims and concerns of the UN International Year of Volunteers known to the public.

Voluntary Ecological Service Year

Young people participating in the Voluntary Ecological Service Year work in facilities and institutions involved in environmental protection and nature conservation. The practical work done during a voluntary service year gives young people the opportunity to acquire know-how and practical experience. It also advances their personal development and environmental awareness. In doing so, the Voluntary Ecological Service Year supports an important developmental phase when young people are deciding which direction their lives and occupations should take. The Voluntary Ecological Service Year is built around the principle of volunteerism.

The objective behind the Voluntary Ecological Service Year is to strengthen young people's sense of responsibility for the public good – particularly for the sustainable management of nature and the environment – develop their environmental awareness so that they take positive action to protect nature and the environment, and give them multicultural experience.

Lower Saxony initiated the Voluntary Ecological Service Year as a pilot project in 1987. Germany's other *Länder* have since added it to their list of programs. Today, all of them offer a Voluntary Ecological Service Year. The number of people taking part in this scheme has grown steadily ever since. More than 1,500 youth between 16 and 27 years of age are currently doing a Voluntary Ecological Service Year. These activities are flanked by educational measures. Young people signing up for a Voluntary Ecological Service Year must commit themselves to a minimum of six months' service. The maximum duration is two years. It is also possible to do a Voluntary Ecological Service Year in another European country.

The Promotion of the Voluntary Ecological Service Year Act of 1993 provides the legal basis for these activities. Sponsors can be associations, organizations, institutions and corporate bodies which have to be approved by the relevant *Land* ministries. Voluntary ecological service can be done at a variety of places such as government agencies, nature conservation or environmental protection organizations, educational facilities, social services providers or research institutes which have to be approved in turn by the Voluntary Ecological Service Year sponsors. Participants receive room and board, work clothes and pocket money from the sponsors.

The Promotion of the Voluntary Ecological Service Year Act is to be amended during the current legislative period to make this voluntary service more attractive and gear it up for the future. Planned changes include expanding the list of countries where volunteers can do their service year to include non-European countries, injecting greater flexibility into the scheme by allowing participants the possibility of extending their period of service by a maximum of six months, and offering the option of doing volunteer service in three-month segments over a maximum period of 24 months. Plans also foresee incorporating activities which fulfill criteria for specific occupational qualifications and certifying them correspondingly.

Germany's *Länder* consider the Volunteer Ecological Service Year to be a fundamental component of environmental education, due in part to the fact that it involves a wide range of sponsors and activities. The Promotion of the Voluntary Ecological Service Year Act provides for flanking educational activities; each voluntary ecological service year includes 25 days of seminar instruction. These seminars have also dealt with the principle of sustainable development in recent years.

Alternative civilian service

Following the start of their period of service, people doing compulsory alternative civilian service attend introductory seminars at government civilian service schools. These courses are geared, *inter alia,* to instilling the ability and willingness to assume responsibility for the future – both on one's own and with others – in awareness of historical, environmental and global contexts. This objective is laid down in guidelines. In keeping with the purpose of this training, Germany's 20 civilian service schools cover subjects involving sustainable development in introductory courses and optional external seminars. Sustainable development is covered in special environmental education seminars and integrated presentations of environmental, social or economic problems. Approximately 25 percent of all seminars currently on offer deal with the subject of sustainable development either specifically or in combination with other subjects. These seminars reach some 22,000 participants. The number of seminars will grow in the future, in tandem with the increasing number of people attending them. Each year, experts prepare approximately 1,100 people who do their alternative civilian service directly in the environmental protection or nature conservation field for their duties.

4.2.11 Federal Ministry for Health

The Federal Ministry for Health (BMG) advocates integrating sustainability dimensions into those fields of education which fall under its purview.

The ministry is responsible for regulating medical training. The new regulations on licensing doctors which the Bundesrat has been deliberating since early 1998 would require medical students to provide proof of academic achievement not only in the cross-cutting field of Health Care Economy/Health Care System but also in the field of Prevention and Health Promotion. The aim here is to equip doctors with the knowledge they need to guide their patients to a more healthy, aware lifestyle which will ultimately improve their quality of life.

The Federal Ministry of Health is also responsible for occupational laws (such as the Nursing Act, MTA Act, and Masseur and Physiotherapist Act) that govern initial vocational training and were enacted pursuant to Article 74, Para. 1, No. 19 of the German constitution. The training and examination regulations that were issued for the individual occupations under legislation governing recognized occupations stipulate minimum requirements for the material they cover. Environmental topics such as environmental protection, nature conservation, environmental hygiene and ecology are also an integral part of these requirements in the area of health and its reciprocal relationships, preventive health care and health promotion
.
The Federal Ministry of Health established the Environment and Health action program in conjunction with the Federal Ministry for the Environment, Nature Conservation and Nuclear Safety. This program was set up to provide extensive information on environmental health risks. This is being accomplished via publications (such as documentation on the Environment and Health action program), online information systems (e.g. http://www.uminfo.de) and Internet forums (e.g. http://www.uminfo.de/aktionsprogramm). The ministry contributes to education for sustainable development by integrating environmental and health-related aspects into the information services it provides for the public.

4.2.12 Federal Ministry of Transport, Building and Housing

The Federal Ministry of Transport, Building and Housing (BMVBW) is responsible for the very concrete and important spheres of human life that fall under the categories mobility, construction and housing. As a consequence, the ministry is extensively involved in the current discussion on sustainable development. The requirements that go hand-in-hand with sustainable development have since been incorporated into the various provisions on the construction and operation of infrastructures and in codes of conduct and recommendations.

The ministry attaches great importance to education for sustainable development. Although it has no primary responsibility in this field, the ministry supports the implementation of the concept of sustainable development by conducting awareness-raising measures, funding continuing and advanced vocational training measures, and teaching special road safety skills and skills necessary for urban and regional development that is responsive to citizens' needs.

When Germany's driving license legislation was amended during the implementation of the Second EC Driving License Directive, the ministry assigned environmentally-aware and fuel-conserving driving styles greater priority in driver education training and examinations. Training regulations for student drivers have included corresponding provisions since January 1, 1999. These steps have been taken with the objective of producing safe, responsible and environmentally aware drivers.

The ministry supports the joint driver's training campaign Safe, Economical and Environmentally Friendly Driving being conducted by the German Road Safety Council and the Deutsche Verkehrswacht (German Association for the Prevention of Road Accidents). By teaching good driving techniques and passing on driving tips, the program aims at helping drivers to:

– Use less fuel and consequently lower their driving costs,
– Produce fewer emissions and
– Handle dangerous situations intelligently.

Studies indicate that CO_2 emissions could be reduced at least 15 percent as a result of fuel-conscious, environmentally-aware driving habits. This campaign is helping lower CO_2 emission levels.

The fuel economy label requirement for cars stipulated by the Directive 1999/94/EC which went into force on January 18, 2000 is currently being transposed into German law. This directive contains provisions on providing consumer information on fuel consumption and CO_2 emissions when marketing new passenger cars.

Turning sustainable mobility into reality requires getting parts of today's road freight traffic off the road and onto railways or waterways. Logistic activities – particularly the use of multimodal transport chains – can help accomplish this. The ministry launched its Logistics training campaign in 1999 to support this process. This campaign is aimed at finding ways to improve logistics training in collaboration with other ministries, representatives from business and science, the German Federation of Trade Unions and trade associations.

According to the *Study on Job Specifications for Managers and Employees in the Logistics Field, Broken Down by Branch of Economic Activity and Level of Hierarchy* which the Research Institute of the German Foreign Trade and Transport Academy conducted on behalf of the Federal Ministry of Transport, Building and Housing, the ministry's Logistics training campaign concentrates on, inter alia, providing continuing employee training as a means of encouraging small and medium-sized businesses to use multimodal transport operations for their logistics processes. It also focuses on setting up a logistics study program at a university.

The ministry launched a *Handbook for Sustainable Construction* for federal buildings during the reporting period. This handbook can be used by investors. The ministry meets its obligation to implement the principle of sustainable development in the building industry at international level as well by conducting numerous continuing and further training measures and participating in discussion groups and symposia.

The ministry funds activities that support community involvement through its Regional-Planning Pilot Project action program. This program helps test new approaches to town and country planning and new planning instruments such as regional management concepts, competitions and campaigns to develop and foster collaborative regional planning activities with other countries. This program is also aimed at promoting community involvement because these instruments cannot be successful without broad public participation and acceptance. The action program focused on two priorities during the period 1996 through 2000: sustainable regional development via regional collaboration and transnational cooperation.

4.2.13 Federal Commissioner for Cultural and Media Affairs

The Federal Commissioner for Cultural and Media Affairs (BKM) funds (from 1998 through 2004) the Our Blue Planet – Living Within a Network project that is part of the equalization measures for the greater Bonn area which have been taken in connection with the federal government's move to Berlin. This project is setting up an environmental information center that will be open to the public as a permanent exhibition at the Zoological Research Institute and Museum Alexander Koenig in Bonn. The exhibition has been designed to instill understanding and a willingness to assume responsibility for the uniqueness of the earth's life-supporting resources. The information center will serve education for sustainable development by providing visitors visual explanations and examples of fundamental ecological laws which control the earth's vital functions.

5 Foundations

5.1 German Federal Environment Foundation

Origins

The German Federal Environment Foundation (DBU) plays a very important role in strengthening the precept of sustainable development in the area of environmental education. All its funding activities are geared to this principle. The foundation's work revolves around prompting the development and use of new technologies and products that reduce the strain on the environment, along the lines of anticipatory environmental protection. It also works to foster environmental awareness and environmentally friendly habits through environmental education and the provision of evaluation criteria. Through its work, the foundation fulfills an important function in the area of education for sustainable development.

The German Federal Environment Foundation funds exemplary, innovative environmental protection projects, giving special consideration to small business. It is Europe's largest environmental foundation. In the ten years since it was established, the foundation has provided over DM 1.75 billion in funding for more than 4,400 projects. In the process, it has assumed a front-running role in German funding policy.

The foundation was established at the initiative of the German government which planned to use some DM 2.5 billion in proceeds generated by the privatization of the Salzgitter group for permanently fostering a forward-looking, environmentally responsible market economy in Germany. The German Bundestag passed the Law to Establish the German Federal Environment Foundation on June 20, 1990. The foundation took up its work in March 1991. The Federal Ministry for the Environment, Nature Conservation and Nuclear Safety, the Federal Ministry of Education and Research and the Federal Ministry of Economics represent the German government on the foundation's board of governors. The foundation's funding activities have given special attention to projects in Germany's eastern *Länder*, particularly during its first years of operation.

Funding priorities

The foundation's work includes the funding priority Environmental Communication within the context of sustainable development, with the subsidiary priorities Environmental Communication in the Small and Medium-Scale Sector of the Economy, Provision of Environmental Information, Environmental Education, and The Environment and Cultural Assets. The foundation has granted some DM 450 million in funding for projects in these areas in the years since it was founded. The funding priorities in the area of environmental communication were engendered by the notion that if sustainable development is to be achieved, the entire country must support it. The German Federal Environment Foundation assigns environmental education a key role in this endeavor and gives center stage to putting complex environmental relationships into understandable terms.

The foundation assumed in the early 1990s that it was possible to improve the overall environmental situation on a lasting basis in large part by effectively conveying knowledge and putting existing know-how potential to use. This was to be achieved by providing information to as many people as possible and by providing environmental counseling for special target groups. Environmental education on the other hand should not only impart knowledge but also provide evaluation criteria and information about changing developments and be geared to a focus on action and the willingness to act.

The foundation revised its funding priorities during the second half of the 1990s, gearing them more strongly to Agenda 21. It no longer views the subject of the environment separately from social relations, cultural influences or economic conditions, given that solving existing and future problems will require, above all, the collaboration of all relevant actors. For this reason, the foundation has expanded its vista and speaks of environmental communication for sustainable development – environmental communication that helps establish the kind of relations between these actors that will lead to action. The purpose of environmental education is to disseminate on a broad basis the ideas outlined in Agenda 21 so that the entire population supports and practices sustainable development.

Funding activities

The German Federal Environment Foundation appropriated DM 306 million in funding for projects involving environmental education and education for sustainable development during the period 1991 through 2000. Most of this funding went to facilities offering out-of-school environmental education. An increasing number of Agenda 21 issues has been incorporated into out-of-school education since 1996. The *Institutions for General Environmental Education in Germany – Practice and Perspectives of Their Work* evaluational study which the foundation funded (see Section 3.5) confirms that out-of-school environmental education is an important funding priority in the environmental education field for the foundation.

A breakdown of the foundation's funding activities in the area of environmental education and environmental communication reveals seven different structural funding priorities. Listed in order of their funding volumes, these priorities cover activities which fall under the categories environmental education or the teaching of environmental information:

– Funding for the construction, outfitting and expansion of environmental education facilities,
– Funding for competitions, campaigns and drives,
– Funding for studies on individual environmental education and environmental communication topics, feasibility studies, the development and testing of concepts that are of a study nature, evaluations,

- Funding for conferences, seminars, congresses and continuing education measures,
- Funding for exhibitions,
- Funding for the development of information material, instruction material and teaching aids,
- Funding for the development of networks and communications structures, particularly among NGOs that are active in the field of environmental education.

Funded environmental communication projects for children and youth – a total of more than 200 since the foundation was established – can be divided into five thematic categories: environmental education in kindergarten, motivating through experience and play, non-school learning venues, environmental communication and the media, and participation in the political process.

The projects which the foundation funds in the area of environmental education and environmental communication for children and youth can be briefly described as follows:

- Beginning about 1995, the projects receiving foundation funding have been increasingly geared to topics and issues that play a role in Agenda 21 and in the discussion on sustainable development.
- This focus on Agenda 21 has made it possible to open up new fields alongside traditional topics in the course of various funding activities. Examples include sustainable agriculture, the resource-conserving use of materials, ecological construction materials, sustainable regional development, consumer behavior, participation, and environmental ethics.
- The funding of projects that use multimedia is becoming increasingly important in light of the fact that children and youth have ever more access to new media and make use of them as a matter of course. The foundation is taking this path in the hope that new media can be used to arouse children and young people's interest in environmental matters and Agenda 21. It presently funds a significant number of projects involving mass media (newspapers, radio and television).
- The range of methods used by the various projects is substantial. In this regard, the foundation can rightly say that it makes a vital contribution to making environmental education and environmental communication interesting, varied, pleasurable and fun.
- New and unusual methods of cooperation and collaborative activities are being tested in a number of projects. The spectrum ranges from collaboration with various scientific disciplines to associations, small and large companies, the political sector and public administration all the way to collaboration between schools and cross-border cooperation. This reflects the claim that environmental education and environmental communication lay to playing a role in modernizing and shaping society – a claim that has been discussed more intensively for some time now.

It is evident from this that the foundation incorporated the concept of sustainable development into its funding policy quite soon after the Rio Summit. Using a considerable amount of funds, the foundation has succeeded in getting innovative projects off the ground which have a marked impact on the environmental education and environmental communication fields and the area of education for sustainable development. By providing project funding, the foundation has particularly been able to get institutions and individuals who have had little interest in environmental education and environmental communication for children and youth to date involved in these fields through unusual collaborative activities.

The foundation also attaches great importance to environmental communication on the part of small and medium-sized businesses. In-house environmental management is viewed as an opportunity for companies to assert themselves in the international marketplace. In the years since its establishment, the German Federal Environment Foundation has granted some DM 145 million for projects in this category. Special attention is given to knock-on financing for nationwide environmental counseling, particularly in Germany's eastern *Länder*, and to building an education and consultancy infrastructure. Other activities which the foundation funds include environmentally-oriented skill-building through further and continuing education measures and environmental communication between industry and public authorities in the area of, for instance, the Local Agenda.

Internationalization

The German Federal Environment Foundation has extended the scope of its work in recent years to include international funding activities. In 1998, the foundation launched a fellowship program with the Nowicki Foundation in Poland. This program offers young Polish scientists from the environmental engineering and research field the opportunity to gather professional experience during a six to twelve-month fellowship visit at various institutions and companies in Germany. This program was extended to include the Baltic region in early 2001.

The foundation also funds individual cooperative projects aimed at education for sustainable development, particularly in the youth services field. The sponsors of these projects come from Central and Eastern European countries bordering Germany. In addition to fostering the exchange of knowledge and information on experience gathered in this field, these projects focus on subjects which offer young people an opportunity for participation, such as in joint youth parliaments.

5.2 Activities pursued by other foundations

Germany has a number of foundations at Land level whose activities include fostering environmental education or education for sustainable development, usually with assistance from the particular *Land*. These include the:

- Bavarian State Foundation,
- Environmental Foundation of Lower Saxony,

– Wadden Sea Foundation of Lower Saxony,
– Saxony State Foundation for Nature and Environment,
– Environmental and Nature Conservation Foundation of Saxony Anhalt,
– Hessen Foundation for Nature Conservation,
– Energy Foundation Schleswig Holstein.

In addition to these, the Foundation of North-South Bridges is active in Germany's "new" *Länder*. Since 1994, it has funded development assistance that is provided for disadvantaged parts of the world in a spirit of partnership and solidarity. This foundation seeks to boost public awareness of the need for development cooperation through its work. It supports the efforts of east German development NGOs with the proceeds generated by its assets (some DM 34 million). The Foundation of North-South Bridges provides funding for some 130 projects every year.

6 Other activities

6.1 Education networks

A number of education networks have emerged in recent years, each of them fulfilling very different functions. For the German government, the creation of networks brings enormous opportunities for establishing education for sustainable development in educational institutions and simultaneously fostering its spread to other educational facilities. Networks give rise to new cross-institutional activities, create opportunities for instructors and learners to exchange information on their experience, and open up innovative ways to pursue collaborative activities. They give rise to links to educational institutions in other countries – and concomitantly to other cultural spheres – which in turn expands the horizons of all involved. Networks can provide additional motivation for examining sustainability topics in the course of the educational process. Networks are important in the implementation and dissemination of education activities because they provide a means of learning about the experience of other network partners and about good examples of education work being done by German actors, all of which can be taken into account or adopted by other stakeholders. Being part of a network structure also encourages reflection on one's own work and thus helps learning processes. Today's new media – and the Internet in particular – encourage the development of network structures and the exchange of information on experience that networks facilitate.

6.1.1 Environment and Schools Initiatives

Set up by the OECD / CERI, the Environment and Schools Initiatives (ENSI) is an international network for collaboration on projects and development programs in the area of environmental education / education for sustainable development and schools. Its members include governments, government-related organizations, research institutes, schools, and teacher training and further training facilities in Germany, Australia, Belgium, Denmark, England, Finland, Italy, Luxembourg, the Netherlands, Norway, Austria, Sweden, Switzerland and Hungary. The USA, Japan, South Korea and New Zealand are associated partners. Germany will provide the ENSI secretariat in 2002 and 2003. This function rotates among the participating countries.

ENSI's work focuses primarily on initiating, coordinating and funding research and school activities; publishing and disseminating information about these activities; promoting international exchange, understanding and collaboration with other international organizations and their programs; and drafting policy recommendations or statements.

ENSI lays down its priority fields of work for the coming year at its annual conferences and then conducts various projects in these areas. It gives Germany positive marks on its conditions for integrating education for sustainable development within the country or, as the case may be, into German schools. Particularly important in this connection are the school development programs that ENSI schools in Germany are required to submit. These programs document progress made in selected areas and stipulate objectives and quality criteria for the next development period. Using this framework, German ENSI schools have succeeded in integrating environmental education campaigns into regular classroom instruction (ENSI 1999).

ENSI is presently working on becoming a Comenius network under the European Union's SOCRATES education program. This network targets global cooperation with non-EU countries in various fields of activity such as school development and quality criteria with an environmental focus, *Gestaltungskompetenz* as a key skill in achieving sustainable development, information technology and new media, and correlations between sustainable school development and basic and continuing teacher training.

6.1.2 UNESCO Associated Schools Project

UNESCO fosters the active participation of youth in decision-making processes as called for in Chapter 25 of Agenda 21 through its UNESCO Associated Schools Project (ASP). Only schools that are continuously involved in UNESCO's international school network are entitled to use the designation Associated School. These schools actively foster UNESCO's goal of "education for international understanding" by supporting the enforcement of human rights, the fight against poverty and misery, the protection of the environment, and tolerance. Participation in this international network takes a variety of forms, such as establishing links with other schools, fostering contact through, for example, school partnerships, teaching on an interdisciplinary basis, attending international seminars, and participating in exchange programs.

One important aspect of UNESCO's Associated Schools Project Network is participation in the Worldwide Project Day of Solidarity which has been held every two years since 1996 (the tenth anniversary of Chernobyl) (BLOECH et al. 1999). Sustainable Development – Paths to a Culture of Peace was the motto for activities undertaken as part of

Project Day in 2000. More than 600 schools in over 100 countries on all continents participated in activities aimed at fostering global environmental protection. The results of these activities were presented at the EXPO 2000 world exposition.

Some 200 students and teachers from UNESCO Associated Schools in 45 countries met in Bielefeld, Germany, in 2000 for the first International UNESCO Summer School for environmental learning organized under the banner of Keep Our Earth Clean (http://www.people.freenet.de/summerschool). The week-long event focused on the conditions necessary for sustainable development. The conference was made possible through assistance provided by Germany's Clean Countryside Campaign. The International Summer School is one of a series of environmental learning projects that UNESCO sponsored in collaboration with the Clean Countryside Campaign in 2000.

6.1.3 GLOBE Germany

Global Learning and Observations to Benefit the Environment (GLOBE) is an international environmental, science and education program that was initiated by the USA. Today, 87 countries – including Germany – participate in this program. In Germany, the In-Service Teacher Training Institute in Hamburg supervises the education side of the GLOBE program, while the German Aerospace Center (DLR) in Cologne oversees the scientific and technical aspects. Some 200 German schools are involved in the program. The Federal Ministry of Education and Research has allocated funding for it since 1996.

The GLOBE program is aimed at generating a deeper understanding of the – global – interplay of climate, water and soil through the long-term observation of environmentally relevant factors. GLOBE thus links research and education in the area of the environment / sustainable development with one another. The GLOBE program was also designed to help increase the depth of science instruction, contribute to school development and play a role in the acquisition of IT and international skills.

A flanking study (BOLSCHO/SEYBOLD 2000) shows that GLOBE schools frequently participate in local and regional environmental protection activities. In the process, they often make use of GLOBE data. However, the international exchange on readings and, as a result, the GLOBE program's global dimension have found little expression to date in the work being done by GLOBE schools or their pupils.

6.1.4 Eco-School Program

The Eco-School Program was created by the Foundation for Environmental Education in Europe (F.E.E.E) to foster the development of environmentally friendly schools and education for sustainable development. The program is not a competition. Rather, the Eco-School designation is an award aimed at establishing environmentally-sound behavior at schools. This award was also conceived to motivate all parties to support sustainable development on a long-term basis. Any type of school can be chosen for this award, regardless of how environmentally friendly it already is.

The Eco-School designation is awarded for one year at a time to schools which over a two-year project period have implemented and documented a plan they have developed themselves for improving the environment. Participating schools must fulfill the following criteria: The school or the school's environmental team must be involved in at least two fields of activity. Most of the school should be involved in implementing the plan and the wider community is to be kept apprised. Activities must be long-term and it must be possible to prove that they have raised the level of environmental compatibility at the school.

Participating schools deal with environmental topics on which they actively collaborate with parents and non-school partners such as business, local authorities and associations. They also meet regularly with one another at regional, Land and national level to exchange ideas, information and details of the experience they have gathered.

The German Association for Environmental Education (DGU) is responsible for the Eco-School Program in Germany. Using the program's Europe-wide network, the DGU puts participating schools in Germany in contact with Eco-Schools in other European countries with an eye to promoting international cooperation. Rather than receiving material or monetary rewards for their efforts, participating schools can look forward to the prestige of being designated an Eco-School. Some 4,000 schools in 19 European countries took part in the program in 2000. These included approximately 600 schools in eight of Germany's *Länder*, clear evidence that the program is well-accepted by schools.

6.2 Competitions

The German government views competitions as an effective means of motivating people to get involved in environmental causes. Particularly for schoolchildren, participation in such competitions offers an interesting framework for examining the concept of sustainable development in other ways than are usually possible in a classroom setting. The various national, *Land* and local competitions report a gratifyingly high level of participation.

At national level, a number of different competitions with links to sustainable development are held in regular intervals. In addition to these, other competitions are also held which are not conducted on a regular basis.

6.2.1 Young Researchers

Held every year, the world's largest and best-known mathematics and science competition Young Researchers targets schoolchildren and youth up to 21 years of age. Besides bearing most of the running costs of the competition, the Federal Ministry of Education and Research also awards special prizes to individuals and prizes for particularly active

schools as part of the national competition. This competition's widespread acceptance among schools and youth – and their involvement – are evidenced by the growing number of participants (nearly 7,000 youth entered in 2000) and the high quality of their submissions. The competition's Environmental Technology category is particularly relevant to education for sustainable development.

The Young Researchers competition has featured an additional international dimension since 1990. Dedicated entirely to the environmental protection field, the Worldwide Young Researchers for the Environment (WYRE) contest grew out of the Young European Environmental Researchers (YEER) competition in 2000. Much of its funding is provided by Deutsche Bank AG.

The German government played a substantial role in ensuring that the Young Researchers and Worldwide Young Researchers for the Environment competitions have a regional and *Land*-level foundation and can look forward to a long-term future.

6.2.2 Federal Environment Competition

The Federal Environment Competition is a nationwide school competition that is funded by the Federal Ministry of Education and Research. It has been conducted by the IPN – Leibniz Institute for Science Education at the University of Kiel every year since 1990. This competition was developed to foster the principle of networking, an essential factor in achieving sustainability. Participants are encouraged to put themselves in the shoes of various social groups in order to gain an understanding of the many perspectives that could contribute to solutions to concrete environmental problems that are to be found primarily in the individual's immediate surroundings. This objective is reflected in the motto of this year's competition: Taking the Step From Knowledge to Action. With an eye to fostering participation in society, participants are encouraged to work together with companies, agencies and local institutions. The competition fosters the examination of issues involved in shaping one's environment on a collaborative and sustainable basis.

6.2.3 National German Nature Parks Competition

The Association of German Nature Parks conducts the National German Nature Parks Competition every two or three years with financial assistance from the Federal Ministry for the Environment, Nature Conservation and Nuclear Safety. The object of this competition is to present and publicize exemplary solutions for balancing recreational use with nature conservation considerations. The competition in 2000 featured the motto Strengthening Regional Identity Through Nature Parks.

6.2.4 Other competitions

Other competitions being conducted under the purview of the Federal Ministry of Education and Research include:

– The City 2003 competition which was launched in May 2000 as part of the Construction and Housing in the 21st Century research program. This competition was designed to prompt communities to develop plans for the future and outline their implementation at political and planning level in collaboration with scientific institutions. Using exemplary processes that involve the public, communities participating in this project are supposed to develop binding plans for adapting their capacity to act to reflect new conditions and plans for solving conflicts. Plans developed by different departments are to be bundled on a holistic basis and made the subject of the respective community's political will. Of the 110 submissions, a total of 21 alliances were recommended for funding in March 2001. Further information on this project is available at http://www.stadt2030.de.
– Regional approaches to sustainable management are given center stage in the ministry's Model Projects for Sustainable Management funding priority. Using a competition, exemplary regional initiatives were selected for studying nascent sustainable economies. Intensive scientific assistance was provided to support these initiatives' work. Fourteen winning projects with differing focal areas started their work in 1999. These projects work on an interdisciplinary basis. Their activities include supporting learning processes in the region.

The Federal Ministry for the Environment, Nature Conservation and Nuclear Safety additionally funds the following competitions:

– The ministry provided funding for the Cool Arguments for Agenda 21 Internet-idea competition in 2000 and 2001. This competition called upon young people to examine and deal with the substance of Local Agenda 21 in creative ways. It was also designed to encourage participation and to disseminate ideas for and examples of Local Agenda 21 initiatives and activities.
– A youth competition under the motto Keep the World in Balance! was held every year from 1997 through 2000. Award-winning projects focused on the sustainable use of water, air, soil and other resources – and offered original ideas for conserving resources in everyday life (www.bmu-wettbewerb.de). In a step to make cross-border issues more tangible, youth from throughout Europe were invited to participate for the first time in 1999.
– Conducted in collaboration with the Federal Agency for Nature Conservation (BfN), the national Nature Conservation 21 competition held in 2001 under the motto Spots for Nature awarded prizes for television and cinema commercials aimed at arousing young people's interest in nature conservation matters. This competition was designed to foster the use of screen advertising – a medium that reflects our age – to promote nature, a timeless "product." Submissions were supposed to represent the enjoyment of intact countryside as a modern-day pleasure (www.naturschutz21.de).
– The youth media competitions Rivers: River History / Stories and The Environment and Renewable Energies foster and support awareness and the artistic portrayal of the local environment using film and photography.

– The ministry has also supported the competition The Spring Experience – A Competition for Experiencing Nature since 1985. This competition spotlights four indigenous harbingers of spring in their habitat each year which participating schoolchildren are to discover and observe in their natural surroundings. The competition is aimed at preschool and primary school-aged children.

One of the national competitions funded by the Federal Ministry for Economic Cooperation and Development awards a prize for exemplary Local Agenda 21 work in the development policy field.

By initiating regional Agenda processes, the national Regions of the Future competition conducted by the Federal Ministry of Transport, Building and Housing promoted sustainable regional planning and human settlement development with the participation of a wealth of regional actors and efforts to promote civic participation. Of the 87 regions that applied to participate in the competition, 26 were selected and awarded the designation Region of the Future – On the Way to Sustainable Development. This competition closed with an award ceremony and project presentation at the URBAN 21 – Global Conference on the Urban Future held in Berlin in July 2000.

This national competition jump-started regional cooperation processes and opened doors to influential decision-makers. Projects that had begun prior to the competition were modified during its course to ensure that they gave more balanced consideration to environmental, economic and social interests. The focus of new projects was directed even more toward ways to tackle resource conservation and the protection of open spaces, integrated transport planning and fostering regional development that is more environmentally-oriented. A large number of local and regional initiatives and public interest groups has been incorporated into the participating regions. The competition also boosted the motivation of the actors in regional Agenda processes enormously.

A wealth of competitions involving education for sustainable development is also being conducted at *Land* level (BLK REPORT 2001).

7 Summary and outlook

Marked progress was made during the reporting period, with a large developmental step being taken from environmental education with a focus on environmental protection to multidimensional education for sustainable development. Education for sustainable development has become a part of educational practice. Concrete signs of education for sustainable development are already evident in a variety of forms and degrees in all fields of education. The sustainability principle can be seen in both formal and non-formal educational processes. In this connection, the beginnings of environmental education and development education together with the Global Learning concept form a foundation for redeeming the general claim that education for sustainable development makes to having the competency to shape the future. The broad range of sustainability-related topics – such as global justice, climate protection and energy, resource-friendly, socially and environmentally compatible technologies, preventive health care, food, consumer protection, construction and housing, and mobility – offer a store of content for teaching and learning activities.

Every field of education is host to a wealth of initiatives, activities and offerings. Although many of these undertakings still see themselves as belonging to the traditional areas nature conservation and environmental education or development education, they have also opened themselves to education for sustainable development. In addition to this, there is already a wide variety of examples of good practice – identified via competitions or the targeted use of quality criteria – which make clear which structural conditions, which additional substantiation and which new teaching and learning cultures are still needed for realizing education for sustainable development on a broader basis.

The following areas are in particular need of further development:

– Direct access to examples of good practice and information that in many cases already exist is still not sufficient. There is also a lack of transparency and interlinking of various offerings and campaigns and a lack of suitable means of communication.
– The dialogue on innovative concepts for education for sustainable development and on the implementation of innovation has to be expanded and stepped up.
– All in all, there is still too little research being done on education for sustainable development. The transfer of research findings to the education system and to actual education work must be increased.
– The structures that support regional initiatives for collaboration between actors “on location” must be expanded and stabilized.
– International cooperation is not yet perceived as a responsibility in all relevant areas.
– Education for sustainable development must be more firmly anchored in the various fields of education.

From the government's point of view, sustainable development must become a model for all politically relevant areas, from health care and agriculture to development cooperation, transport and the economy, education and research all the way to social justice. Germany's future development – like the development of other states – depends largely upon whether it succeeds in linking environmental, economic and social objectives with one another.

The German government's reply to the major interpellation on education and research policy aimed at sustainable development submitted by the SPD and Alliance 90/The Greens parliamentary groups in the German Bundestag made it clear that education and research policy is an important basis for a national sustainability strategy. Education and research are indispensable prerequisites for safe-

guarding the natural basis of life on a sustainable and viable basis, preserving economic competitiveness and the equitable sharing of work, income and opportunity. Education and research are a decisive driving force for the needed modernization of government, economy and society.

Agenda 21 regards education as one of the most important prerequisites for sustainable development. For this reason, all states must, as a rule, make provisions to ensure they have high-quality education systems. The German government fulfills this duty in those areas falling under its purview.

Germany's federal and *Land* governments are together faced with the two-fold challenge of establishing favorable conditions for acquiring knowledge and skills that are crucial not only for the individual's future but also for all of society. They are also taking steps to avoid or reduce marginalization as training requirements become increasingly demanding.

As a rule, education and training have a threefold thrust: personality development, participation in society and employability. To be employable today, individuals must have a well-rounded personality with a high level of personal competency and social skills. Conversely, the ability to support oneself is a prerequisite for personality development and participation in society. An education system is viable and concomitantly sustainable when it helps improve the individual's performance, effectively demands and fosters creativity and a sense of responsibility, ensures and safeguards equality of opportunity and implements the right of all to the best possible education. This viability also requires educational institutions themselves to become learning systems.

To put these fundamental objectives of education into more concrete terms, education for sustainable development has the task of conveying knowledge and skills that put the individual in a position to live and work on a sustainable, viable basis and to participate and take action. The goal is not to teach specific behavior but to foster a disposition toward self-directed, autonomous action. Education for sustainable development should develop and foster the individual's creative potential, ability to communicate and collaborate, problem-solving skills and ability to act. It should induce learning processes that heighten the individual's awareness of environmentally tenable, economically viable and socially acceptable action in his or her private life and working life and enable appropriate behavior. Consequently, additional efforts must be made to ensure that education for sustainable development is further integrated into all levels of education – kindergarten, primary and secondary school education, vocational training, higher education and continuing education.

Making education for sustainable development a reality in regular practice requires the cooperation of various actors, namely, *Land* governments and local authorities, business, culture, science, universities and many other institutions. As outlined in this report, the German government has – within its purview and in collaboration with the Länder, local authorities and various institutions – vigorously promoted and provided fundamental impetus to date for a realignment of the education system toward sustainable development. It will continue to do so in the future; it will also continue to support other innovative trends in those areas where it collaborates with other actors, such as joint education planning with the Länder. However, much of what is involved in implementing education for sustainable development in regular practice does not fall under the purview of the federal government. This work must be done by, for example, the Land governments, local authorities, business and other actors.

Taking into account the need for improvement ascertained during the reporting period, the German government views the following as potential starting points for developing education for sustainable development in the coming years:

Link centers of excellence and establish a structure for offerings, using new media

Few fields of education can match education for sustainable development for its broad range of offerings, initiatives and actors. This diversity constitutes an opportunity for and expression of social involvement, the active participation of many groups and individuals and institutions, and encompasses wide-ranging skills necessary for education and relevant research. This report ascertained a lack of transparency in and an inadequate interlinkage between various offerings. Further, despite the availability of information on and examples of good practice in many cases, the means to directly access them are not yet sufficiently developed. Consequently, steps must be taken to make this expertise from the research sector and educational practice more transparent to all parties interested in issues involving education for sustainable development and to make it easier for them to access it. For this reason, efforts must be made to establish a network that draws upon the means of new information technologies and includes all fields of education and relevant research. Such a network could reach beyond the boundaries that delineate organizations and communications to bring individuals, institutions and interests into contact with one another and to transcend traditional forms of organization and communication. The objective targeted here is to link existing expertise and regional and national network structures with one another in a way that generates additional benefits for all actors involved. This kind of network can be used to support the transfer of findings into practice and to help step up the implementation and development of education for sustainable development. Rather than being superceded by this network, cross-links that are already in place in individual areas of education should integrated into it in appropriate ways.

An operator structure for this nationwide network must be developed to ensure the network's framework conditions and long-term operation. The German government will support the development and testing phase of an Educa-

tion for Sustainable Development network of this type which uses new media.

To facilitate access to bodies which have information on the subject of sustainable development, this report also includes an annex with relevant Internet addresses.

Foster the dialogue on the implementation of innovation

By setting up an Education Forum, the German government launched a broad social dialogue on modernizing the country's entire education system. Working together with young people undergoing vocational training, representatives from the federal and Land governments and from business, academia and the churches plan to develop strategies for ensuring the quality and viability of the German education system vis-à-vis other countries. Building on the recommendations issued by the Education Forum and following the national sustainability strategy, they are seeking to continue a topic-driven dialogue for the fields of education and communication for sustainable development in order to purposefully discuss issues that are vital to continued development in this area. These include the creation of innovative structures, issues involving lifestyles and consumption patterns, the use of media and, most importantly, the need for greater interdisciplinarity in all fields.

Some educational facilities often reach their limits when trying to develop and implement innovative measures that are geared to the sustainability principle. Consequently, it is particularly important to ensure sufficient organizational flexibility so that it is possible to put interdisciplinary and transdisciplinary approaches to use within educational institutions.

This dialogue should deal with the requisite continued development of instruction and learning methods, virtual instruction and learning offerings, the reorganization and revamping of learning processes and sufficiently viable and coordinated plans for implementing individual aspects of sustainable development in education. It should also encompass the nascent integration of environmental education and political education as a joint basis for education for sustainable development.

Expand research activities and step up the transfer of research findings on issues of sustainability in education

Ways to reduce and eliminate existing deficits in research on education for sustainable development must be ascertained through a dialogue with universities and research facilities. Once the research on environmental education has been completed, plans for quality assurance and impact research should be developed and corresponding empirical research on education should be supported. At present, a more or less provisional picture of how far education for sustainable development has been established and disseminated in Germany can be drawn only on the basis of conclusions drawn from limited empirical findings on environmental education and development education and with the help of expert assessments.

The German government will step up and expand the integration of education and communication aspects into research and development projects involving sustainable development – which began when it realigned its research policy – to ensure that the knowledge needed for concrete measures that are of relevance to sustainable development is available in sufficient measure and time.

To achieve this, models to accelerate this process and link it with the training of the actors in the education field must be developed on the basis of past experience gained in research projects and programs. The increased linking of research and development with education considerations must be reflected in the assistance and support provided young scientists, in the way basic and advanced vocational training is organized, and in the instruction provided in primary and secondary school. For this reason, the German government will ensure that the transfer of findings to the various areas of education is taken into account when devising its research and development projects for sustainable development.

In addition, regional transfer agencies that operate between universities / non-university research institutes and educational practice can make important contributions. This process can be helped with funding for exemplary models.

Improve cooperation between actors on location

Regional activities are particularly important for promoting the participation of broad sections of society – especially youth – in sustainable development learning processes. In keeping with the motto “Think globally – act locally” the complex factors and relationships involved in sustainable development can be better understood through one's own experience. Participation is a fundamental element of sustainable development; it takes place and is experienced in initiatives that individuals pursue “on location.” Which is why suitable regional learning structures must also be created to support regional initiatives in general and Local Agenda 21 processes in particular.

The German government fosters cooperation between actors “on location” particularly through its Learning Regions – Fostering Networks program. This program targets the establishment and expansion of regional networks to step up collaboration between employment offices, adult education centers, chambers of industry and commerce, public and private educational institutions, labor unions, socio-cultural institutions, universities, firms and schools, local governments, environmental groups and Agenda 21 projects, for example, with an eye to initiating sustainable, structure-building measures in the education field for the region. These structures should enable lifelong learning in the respective region and can also be used by institutions and interest groups that are active in the field of sustainable development.

Expand and strengthen international cooperation and programs

The German government will present examples of good practice in education for sustainable development at the

Rio + 10 follow-up conference in Johannesburg to illustrate how education work can play a role in implementing the principle of sustainable development. Putting these skills to use, exchange of information on past experience will be launched with other states and the nascent collaborative activities that are already taking place with numerous countries in various networks (the OECD's ENSI school network, Eco-Schools, the Copernicus Charter) will be expanded and stepped up.

Germany will host the secretariat for the OECD's ENSI network for the years 2002 and 2003. Its offices will located be in the *Land* of Hesse. This will provide an opportunity to include more German schools in the network so that they can pursue program work for education for sustainable development in collaboration with a total of nearly 20 European Union member states, the USA, Australia, New Zealand and Asian countries.

At EU level, the German government will also be advocating stepping up transnational projects on education for sustainable development being conducted under the Socrates and Leonardo education programs and the Youth for Europe program.

Anchor education for sustainable development even more firmly in the individual fields of education

In accordance with the BLK report to the heads of Germany's federal and Land governments regarding the implementation of the BLK's Education for Sustainable Development Guidelines for individual fields of education, the following objectives are to be mentioned here:

– Create incentives for interdisciplinary collaboration in all educational institutions and in training (i*nter alia,* through inclusion in syllabi and examination regulations);
– Encourage educational institutions to pursue program-based development work (e.g., stipulating objectives and priorities; evaluation; collaboration with external partners);
– Foster regional networks and model regions (coordination offices, collaborative projects, transfer of information on past experience, evaluation).

In addition to this, people who work in various fields of education need to be provided systematic continuing training in the core issues of education for sustainable development. Consideration is to be given to various forms of further and continuing training which can range from continuing education courses (as supplementary or postgraduate courses via corresponding further training) to sponsor-specific, usually short-term continuing training, conferences, summer schools and workshops. In light of the importance of new media in the area of education for sustainable development, continuing training measures must be offered to ensure that teachers and students develop corresponding expertise in the use of these media.

The primary responsibility for discharging these various duties lies with Germany's *Länder*, communities, trade unions, employers and the respective facilities. The German government will contribute to innovative developments within its sphere of responsibilities. It will continue to support and purposefully fund education for sustainable development in the coming years. One important objective in this connection is to allow education for sustainable development to become a self-evident task in all fields of education.

Abbreviations

A

ABP	Ausschuss für entwicklungsbezogene Bildung und Publizistik des Kirchlichen Entwicklungsdienstes der Evangelischen Kirche in Deutschland (Committee for Development-Related Education and Journalism of the Churches' Development Service of the Protestant Church in Germany)
ANU	Arbeitsgemeinschaft Natur- und Umweltbildung e. V. (Association of Environmental Education Centres)
ASL	Aktion Saubere Landschaft (Clean Countryside Campaign)
AvH	Alexander von Humboldt-Stiftung (Alexander von Humboldt Foundation)

B

BAköV	Bundesakademie für öffentliche Verwaltung im Bundesministerium des Innern (Federal Academy of Public Administration in the Federal Ministry of the Interior)
BANU	Bundesarbeitskreis der Naturschutzakademien (National Association of Publicly-Funded Training Centers in the Nature Conservation and Environmental Protection Fields)
BfN	Bundesamt für Naturschutz (Federal Agency for Nature Conservation)
BIBB	Bundesinstitut für Berufsbildung (Federal Institute for Vocational Training)
BIOTA	Biodiversity research project under the Research on Global Change program
BKM	Beauftragter der Bundesregierung für Angelegenheiten der Kultur und der Medien (Federal Commissioner for Cultural and Media Affairs)
BLK	Bund-Länder-Kommission für Bildungsplanung und Forschungsförderung (Bund-Länder Commission for Educational Planning and Research Promotion)
BMA	Bundesministerium für Arbeit und Sozialordnung (Federal Ministry of Labor and Social Affairs)
BMBF	Bundesministerium für Bildung und Forschung (Federal Ministry of Education and Research)
BMF	Bundesministerium der Finanzen (Federal Ministry of Finance)
BMFSFJ	Bundesministerium für Familie, Senioren, Frauen und Jugend (Federal Ministry for Family Affairs, Senior Citizens, Women and Youth)
BMI	Bundesministerium des Inneren (Federal Ministry of the Interior)
BMVBW	Bundesministerium für Verkehr, Bau- und Wohnungswesen (Federal Ministry of Transport, Building and Housing)
BMVEL	Bundesministerium für Verbraucherschutz, Ernährung und Landwirtschaft (Federal Ministry of Consumer Protection, Food and Agriculture)
BMVg	Bundesministerium für Verteidigung (Federal Ministry of Defense)
BMU	Bundesministerium für Umwelt, Naturschutz und Reaktorsicherheit (Federal Ministry for the Environment, Nature Conservation and Nuclear Safety)
BMWi	Bundesministerium für Wirtschaft (Federal Ministry of Economics)
BMZ	Bundesministerium für wirtschaftliche Zusammenarbeit und Entwicklung (Federal Ministry of Economic Cooperation and Development)
BpB	Bundeszentrale für politische Bildung (Federal Agency for Civic Education)
BUND	Bund für Umwelt und Naturschutz Deutschland e. V.(Friends of the Earth)

C

CAF	Clearing House for Applied Futures
CDG	Carl-Duisberg-Gesellschaft(Carl Duisberg Society)
CHM	Clearing House Mechanism

COMED	Association to Promote Community Education in the Federal Republic of Germany
COPERNICUS	Cooperation Programme in Europe for Research on Nature and Industry
CRE	Association of European Universities
CSD	Commission on Sustainable Development

D

DAAD	Deutscher Akademischer Austauschdienst (German Academic Exchange Service)
DAV	Deutsche Außenhandels- und Verkehrsakademie (German Foreign Trade and Transport Academy)
DBU	Deutsche Bundesstiftung Umwelt (German Federal Environment Foundation)
Dechema	Gesellschaft für Chemische Technik und Biotechnologie e. V. (non-profit scientific and technical society)
DED	Deutscher Entwicklungsdienst (German Volunteer Service)
DEKLIM	Climate and atmosphere research project under the Research on Global Change program
DFG	Deutsche Forschungsgemeinschaft (German Research Foundation)
DG	Directorate General of EU
DGfE	Deutsche Gesellschaft für Erziehungswissenschaften (German Educational Research Association)
DGU	Deutsche Gesellschaft für Umwelterziehung e. V. (German Association for Environmental Education)
DIE	Deutsche Institut für Erwachsenenbildung (German Institute for Adult Education)
DJI	Deutsches Jugendinstitut (German Youth Institute)
DLR	Deutsches Zentrum für Luft- und Raumfahrt (German Aerospace Center)
DLT	Deutscher Landkreistag (Association of German Counties)
DIPF	Deutsches Institut für internationale pädagogische Forschung (German Institute for International Educational Research)
DSE	Deutsche Stiftung für internationale Entwicklung (German Foundation for International Development)
DSJ	Deutsche Sport Jugend (German Sports Youth)
DST	Deutscher Städtetag (German Association of Cities and Towns)
DStGB	Deutscher Städte- und Gemeindebund (German Association of Towns and Communities)
DWFZ	Fortbildungszentrum für Hörfunk und Fernsehen der Deutschen Welle (Deutsche Welle's Advanced Training Center)

E

EBAG	Europäische Bildungs- und Aktionsgemeinschaft (European Education and Action Group)
ECOSOC	UN Economic and Social Council
EED	Evangelischer Entwicklungsdienst (Church Development Service – An Association of the Protestant Churches in Germany)
ENSI	Environment and Schools Initiatives
EU	European Union

F

F.E.E.E.	Foundation for Environmental Education in Europe
FES	Friedrich-Ebert-Stiftung (Friedrich Ebert Foundation)
FNS	Friedrich-Naumann-Stiftung (Friedrich Naumann Foundation)

G

GbU	Gesellschaft für berufliche Umweltbildung (Association for Environmental Vocational Training)
GLOBE	Global Learning and Observations to Benefit the Environment
GLOWA	Global water cycles research project under the Research on Global Change program
GSF	Forschungszentrum für Umwelt und Gesundheit (National Research Center for Environment and Health)
GTZ	Deutsche Gesellschaft für Technische Zusammenarbeit (German Agency for Technical Cooperation)

H

HBS	Heinrich-Böll-Stiftung (Heinrich Böll Foundation)
HGF	Helmholtz-Gemeinschaft deutscher Forschungszentren (Hermann von Helmholtz Association of German Research Centers)
HSS	Hanns-Seidel-Stiftung(Hanns Seidel Foundation)

I

IGC	Intergovernmental Council (MOST)
IGR	Informationszentrum für genetische Ressourcen (Information Centre for Genetic Resources)
IHDP	International Human Dimensions Programme
IHP	International Hydrological Programme (UNESCO)
IPN	Institut für die Pädagogik der Naturwissenschaften an der Universität Kiel (IPN – Leibniz Institute for Science Education at the University of Kiel)

K

KAS	Konrad-Adenauer-Stiftung (Konrad Adenauer Foundation)
KfW	Kreditanstalt für Wiederaufbau (Development Loan Corporation)
KJHG	Kinder- und Jugendhilfegesetz (Child and Youth Services Act)
KMK	Kultusministerkonferenz (Standing Conference of Ministers of Education and Cultural Affairs of the Länder in the FRG)

M

MAB	Man and Biosphere Programme (UNESCO)
MaTech	New Materials for Key Technologies of the 21st Century funding program
MOST	Management of Social Transformations (UNESCO program)

N

NAJU	Naturschutzjugend (environmentalist youth organization)
NgO	Non-governmental organization

O

OECD	Organisation for Economic Co-operation and Development

R

RLS	Rosa-Luxemburg-Stiftung (Rosa Luxemburg Foundation)

S

SAM	Structural adjustment measure
SRU	Rat von Sachverständigen für Umweltfragen (German Council of Environmental Advisors)
SSC	Scientific Steering Committee (MOST)

U

UBA	Umweltbundesamt (Federal Environmental Agency)
UMK	Umweltministerkonferenz (Environmental Ministers Conference)
UN	United Nations
UNCED	UN Conference on Environment and Development
UNDP	UN Development Program
UNESCO	United Nations Educational, Scientific and Cultural Organization

V

VDN	Verband Deutscher Naturparke (Association of German Nature Parks)
VENRO	Verband Entwicklungspolitik deutscher Nichtregierungsorganisationen (Association of German Development NGO's)
VHS	Volkshochschulen (adult education centers)

W

WBGU	Wissenschaftlicher Beirat der Bundesregierung: Globale Umweltfragen (German Advisory Council on Global Change)
WGL	Wissenschaftsgemeinschaft Gottfried Wilhelm Leibniz (Leibniz Association)
WUS	World University Service
WYRE	Worldwide Young Researchers for the Environment

Y

YEER	Young European Environmental Researchers

Z

ZADI	Zentralstelle für Agrardokumentation und –information (German Centre for Documentation and Information in Agriculture)
ZKE	Zentrum für Kommunale Entwicklungszusammenarbeit e. V. (Centre for Local Community Development Cooperation)

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Important Internet addresses

(Links that were not listed in the report are printed in italics.)

A

ANU (Environmental education portal)	http://www.umweltbildung.de
Auswärtiges Amt	*http://www.auswaertiges-amt.de*

B

Bundesakademie für öffentliche Verwaltung (BaköV)	http://www.bakoev.bund.de
BMU/Publicity campaign to mark the 10th anniversary of the Convention on Biological Diversity in 2002 http://www.biologischevielfalt.de	
BMU Wettbewerb „Halt die Welt im Gleichgewicht!"	http://www.bmu-wettbewerb.de
BMBF education server	www.bildungsserver.de
Brot für die Welt	*http://www.brot-fuer-die-welt.de/*
Bundesinstitut für Berufsbildung	*http://www.bibb.de/*
Bundesministerium für Arbeit und Sozialordnung	*http://www.bma.bund.de*
Bundesministerium für Bildung und Forschung	*http://www.bmbf.de*
Bundesministerium für Familie, Senioren, Frauen und Jugend	*http://www.bmfsfj.de*
Bundesministerium der Finanzen	*http://www.bundesfinanzministerium.de*
Bundesministerium für Gesundheit	*http://www.bmgesundheit.de*
Bundesministerium des Innern	*http://www.bmi.bund.de*
Bundesministerium der Justiz	*http://www.bmj.bund.de*
Bundesministerium für Umwelt, Naturschutz und Reaktorsicherheit	*http://www.bmu.de*
Bundesministerium für Verbraucherschutz, Ernährung und Landwirtschaft	*http://www.verbraucherministerium.de*
Bundesministerium für Verkehr, Bau- und Wohnungswesen	*http://www.bmvbw.de*
Bundesministerium der Verteidigung	*http://www.bundeswehr.de*
Bundesministerium für Wirtschaft und Technologie	*http://www.bmwi.de*
Bundesministerium für wirtschaftliche Zusammenarbeit und Entwicklung	*http://www.bmz.de*
Bundeszentrale für politische Bildung	*http://www.bpb.de*
Bund für Umwelt- und Naturschutz	*http://www.bund.net/*

C

CAF Agenda Transfer	http://www.agenda-transfer.de
Carl-Duisberg-Gesellschaft	http://www.cdg.de

D

Dechema Gesellschaft für Chemische Technik und Biotechnologie e. V.	http://kontaktforum.dechema.de
Deutsche Bundesstiftung Umwelt	www.dbu.de
Deutscher Entwicklungsdienst	*http://www.ded.de*
Deutsche Gesellschaft für Erziehungswissenschaften (DGfE)	http://www.service-umweltbildung.de
Deutsche Gesellschaft für technische Zusammenarbeit	*http://www.gtz.de*
Deutsche Welthungerhilfe	*http://www.welthungerhilfe.de/index.php3*
Deutsches Institut für Erwachsenenbildung (DIE);	*http://www.die-frankfurt.de/clear*

"Clearing-Stelle Umweltbildung"; incl. links on the subject of adult education	http://www.die-frankfurt.de/clear
Deutsche Stiftung für internationale Entwicklung	http://www.dse.de
E	
Econtur	http://www.econtur.de/
Eine Welt Internet Konferenz (EWIK)	http://www.eine-welt-netz.de
F	
Friedrich Ebert Stiftung	*http://www.fes.de*
Friedrich Naumann Stiftung	*http://www.fnst.org/reda/*
H	
Hanns Seidel Stiftung	*http://www.hss.de/default.htm*
Heinrich Böll Stiftung	*http://www.boell.de/index1.html*
K	
Konrad Adenauer Stiftung	*http://www.kas.de/*
Kreditanstalt für Wiederaufbau	*http://www.kfw.de*
M	
Misereor	*http://misereor.de*
N	
Naturschutz 21 - Spots for nature	www.naturschutz21.de
R	
Rat für Nachhaltige Entwicklung (RNE)	www.nachhaltigkeitsrat.de
Rat von Sachverständigen für Umweltfragen	http://www.umweltrat.de
Rosa Luxemburg Stiftung	*http://www.rosaluxemburgstiftung.de*
S	
Schulen ans Netz	www.bionet.schule.de
Schüler als Naturdetektive	www.naturdedektive.de
Stadt 2030 im Rahmen des Forschungsprogramms Bauen und Wohnen im 21 Jahrhundert	http://www.stadt2030.de
Stiftung Entwicklungszusammenarbeit Baden-Württemberg	*http://www.sez.de/stiftung.htm*
T	
TU WAS-Arbeitskreise	http://www.tuwas-agenda.de
U	
UNESCO summer school Keep Our Earth Clean	http://www.people.freenet.de/summerschool

V

Verein für Friedenspädagogik in Tübingen	http://www.friedenspaedagogik.de
Verband Entwicklungspolitik deutscher Nichtregierungsorganisationen	*http://www.venro.org/*
Venro-Linkliste zu anderen Organisationen	*http://www.venro.org/fr_linkliste.html*

W

Wissenschaftlicher Beirat der Bundesregierung: Globale Umweltveränderungen (WBGU)	www.wbgu.de

Z

Zentrum für Kommunale Entwicklungszusammenarbeit	http://www.zke.org

Other important links:

Arbeitsgemeinschaft für Natur- und Umweltbildung (Links on enviromental education, Agenda 21, education for sustainable development)	*http://www.anu.de*
Bundeskongress entwicklungspolitischer Aktionsgruppen	*http://www.epo.de/buko/index.htm*
Deutsches Institut für Erwachsenenbildung (Linkliste zum Thema Erwachsenenbildung)	*http://www.die-frankfurt.de*
Umweltforum für Aktion und Zusammenarbeit (List of links related to Agenda 21)	*http://www.ufaz.de*
GTZ web site with links to other development policy organizations	*http://www.gtz.de/unternehmen/deutsch/links/*

Federal Ministry
of Education
and Research

BMBF PUBLIK