UNEP in 2001

UNEP governing structure 2

Message from the United Nations Secretary-General 3

Part I

UNEP Executive Director's message: 4

Sustainable development: our future at stake

Part II

The UNEP year in brief 14

Preparing for WSSD 18

Protecting the atmosphere 20

Safe chemical management 22

Fresh water for all 24

Protecting the marine environment 26

Sustainable land use 28

Conserving biodiversity 30

International environmental governance 32

Environmental assessment and information 34

Sustainable consumption 38

The global business environment 40

Communicating the message 42

UNEP funding 44

UNEP functional structure 46

UNEP personnel 47

UNEP around the world 48

Focus on your world

The photographs in this annual report are from the three UNEP *Focus on Your World* international photographic competitions on the environment, which have attracted over 100,000 entries from more than 160 countries. A fourth competition, for 2004–5, again sponsored by Canon, is in the early planning stages.

The images have been seen worldwide throughout 2001, with major exhibitions in Japan, the United Kingdom, the United States, France, Sweden, Italy, Kenya and the United Arab Emirates. In 2002 the 100 best images from all three competitions will be on display at all London Heathrow Airport terminals, as well as at the World Summit on Sustainable Development in Johannesburg, South Africa.

Selections from the UNEP photo library are available at *www.unep.org* or *www.oneworld.org/media/gallery/unep/.* The full UNEP photo library, which now houses nearly 3,000 images, is at *www.stillpictures.com* and *www.topfoto.co.uk*. For individual credits see the main body of the report.

D P Rodrigues / UNEP

Bureau Members of the UNEP Governing Council[1]

President	Hon. David Anderson (Canada)
Vice-Presidents	H.E. Dra. Rosa Elena Simeon Negrin (Cuba)
	H.E. Mr. Tupuk Sutrisno (Indonesia)
	H.E. Mr. J. Radziejowski (Poland)
Rapporteur	Hon. Kezimbira Miyingo (Uganda)

Bureau Members of the Committee of Permanent Representatives to UNEP[1]

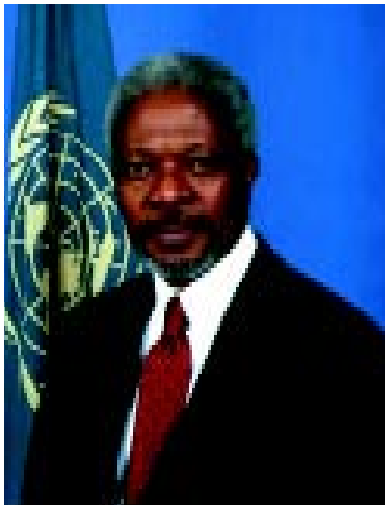
Chairperson	H.E. Ms. Inga Bjorl-Klevby (Sweden)
Vice-Chairpersons	H.E. Mr. Joaquim A.W. Salles (Brazil)
	H.E. Prof. Gaspard M. Bin-Mubibi (Congo)
	H.E. Mr. Zlatan Maltaric (Yugoslavia)
Rapporteur	H.E. Mr. Rajiv Bhatia (India)

Member States of the Governing Council of the United Nations Environment Programme

Antigua and Barbuda*
Argentina*
Austria*
Bahamas**
Belarus*
Belgium*
Benin**
Botswana*
Brazil**
Burkina Faso**
Burundi*
Cameroon*
Canada*
China*
Colombia**
Comoros*
Cuba*
Denmark**
Egypt**
Equatorial Guinea**
France*
Gambia**
Germany*
Hungary*
India**
Indonesia*
Iran (Islamic Republic of)**
Italy**
Jamaica*
Japan*
Kazakhstan*
Libya**
Malawi*
Marshall Islands **
Mexico **
Netherlands **
New Zealand **
Nigeria *
Norway *
Pakistan **
Poland**
Republic of Korea*
Republic of Moldova**
Russian Federation*
Samoa**
Saudi Arabia**
Senegal**
Slovakia**
Sudan*
Suriname**
Syrian Arab Republic*
Thailand**
Turkey**
Uganda**
United Kingdom of Great Britain and Northern Ireland**
United States of America*
Venezuela*
Zimbabwe*

[1] *As at July 26, 2001.*
* *Members whose terms expire on 31 December 2001.*
** *Members whose terms expire on 31 December 2003.*

Message from the United Nations Secretary-General



M Grant / UN Photo

Kofi A. Annan
United Nations
Secretary-General

Thirty years ago in Stockholm, the United Nations Conference on the Human Environment established the United Nations Environment Programme as the environmental conscience of the United Nations system. Since then, our world has changed dramatically. Globalisation has replaced the politics of the Cold War. Personal computers have given us new ways to conduct business and interact with the world. And it has become evident that many of our environmental problems—climate change, degradation of the Earth's protective ozone layer — are global in nature, and demand global solutions.

Our challenge is to decrease the agonising poverty and fear that plague billions of our fellow human beings, and ensure that globalisation benefits all people. The question of how best to manage the environment is integral to this effort, for it is the Earth's precious resources and fragile ecosystems that form the foundation of a sustainable future. If we fail to make environmental considerations central to our policy decisions, our city planning, our development programmes and our business practices, we will undermine the very advances we hope to achieve.

How much has really changed since the Stockholm conference, and since the "Earth Summit" one decade ago in Rio de Janeiro? Although we sign declarations and agreements to protect our one and only home, we have yet to move decisively from commitment to action. It is long past time to take that step. If we are to maintain a viable global environment, and build healthy, equitable societies, there is no choice but for Governments, United Nations entities, the private sector and civil society to work together towards one aim: sustainable development.

To reach that goal, we need reliable, up-to-date information, sound policy advice, and help in coordinating the agreements that we must reach and adhere to if we are to achieve a sustainable future. These are among the vital services provided by UNEP. This report details the contributions UNEP has made to global sustainable development in 2001 and throughout its history. As we prepare for the World Summit on Sustainable Development, to be held in Johannesburg in September 2002, I am confident that UNEP will continue to do its part, along with its United Nations partners and others, to create a better world for ourselves and our children.

Sustainable development: our future at stake

This year, the world meets in Johannesburg to consider the most crucial issue facing mankind today: sustainable development. The decisions and commitments that are made at the World Summit on Sustainable Development will help determine what the future holds for ourselves and our descendants. The negotiations are not going to be easy, because the issues are complex. But, in a sense, there is only one choice to be made. We can decide to carry on as we are doing: tackling problems piecemeal; making commitments that we cannot or will not honour; ignoring issues that don't affect us directly or that involve uncomfortable solutions. Or we can decide to work together, make those difficult decisions, and fully commit to actions that will create a better world for all mankind.

What is at stake? Put simply, our future. We all share the same home. Our lives are inextricably connected with the lives of all the other inhabitants of this planet. That realisation was brought sharply into focus by the first images of Earth from space, and is reinforced daily by the progressive forces of globalisation. No longer can we think that other people's problems are separate from our own lives. Nor can we believe that our own choices and actions do not affect everyone on this planet.

A Doto / UNEP

Thirty years ago, the world's human population was under 4 billion. Today it is over 6 billion; by 2050 it may be as much as 9 billion. As the world's population grows so does the number of people living in poverty and fear, denied basic rights and amenities, dying of preventable diseases. Poverty, and the despair it engenders, are destabilising influences across the globe. The destabilising effects of poverty do not only affect oppressive governments, they concern everyone whose life is touched by the growing web of international commerce: multinational businesses, farmers in the developing world, small investors in the West, the list is endless. Poverty is also toxic to the environment. Land degradation, marine pollution, deforestation, the increasing death toll in natural disasters: all are caused by, or exacerbated by, our failure to combat poverty.

But perhaps an even greater threat to our future is not our failure but our success. An affluent minority, mostly concentrated in Europe and North America, but also found in every major city of the world, accounts for the bulk of the consumption of natural resources on this planet. Affluence is causing most of the major environmental issues facing us. Over-consumption is destroying our resource base: profligate energy consumption is driving up global temperatures; over-harvesting is destroying fish stocks; over-exploitation of forest resources is affecting both the terrestrial and the marine environment; industrial and agricultural chemicals are destroying the ozone layer and poisoning the food chain; and water resources are being depleted where they are most needed.

Reducing poverty in itself is, therefore, not a solution, nor is it even a possibility without addressing the issue of consumption. We need to answer two questions in Johannesburg. First: how can we alleviate the poverty of the majority without encouraging a massive increase in unsustainable consumption? Second: how can we curb the excessive consumption of the minority without harming the lifestyles that depend on that consumption? In the face of the rapidly accelerating deterioration of our natural resource base, these are the issues that the world needs to tackle. These are the issues that UNEP is working to address.

From Stockholm to Rio

UNEP was established as the environmental conscience of the United Nations system 30 years ago in Stockholm. The 1972 United Nations Conference on the Human Environment marked the formal acceptance by the international community that development and the environment are inextricably linked. Despite the absence of the former Soviet Union and its allies, the Stockholm Conference, which was attended by 113 world government representatives, achieved a remarkable spirit of consensus

and compromise between developed and developing nations. Among the declarations of the conference is the understanding that "the protection and improvement of the human environment is a major issue which affects the well-being of peoples and economic development throughout the world."

The significance of Stockholm was huge. In a fiercely polarised world, where global warming and the depletion of the ozone layer were hardly issues, and where development at all costs seemed to be the prevailing credo across the globe, suddenly world leaders were agreeing that defending and improving the human environment for present and future generations was "an imperative goal for mankind—a goal to be pursued together with, and in harmony with, the established and fundamental goals of peace and worldwide economic and social development." Almost overnight what had been largely perceived as a fringe Western preoccupation was forcing its way onto the international agenda.

Stockholm prompted major developments. The environment began to figure in national and international legislation. Governments, and entities like the Organisation of African Unity, adopted instruments or constitutions that embodied the Stockholm precept of the right of people to "live in an environment of a quality that permits a life of dignity and well-being." The number of national environment ministries or departments worldwide rose from 10 pre-Stockholm to 110 in 1982. In the countries of the Organisation for Economic Cooperation and Development (OECD) the pace of environmental legislation accelerated, with 31 major environmental laws being passed between 1971 and 1975; these have generally led to marked improvement over time in the quality of the physical environment in the developed world. The period 1972 to 1992 also saw a proliferation of environmental conferences and conventions designed to address various environmental issues, including conserving endangered species, controlling the movement of hazardous wastes, and working to reverse the depletion of the ozone layer. Undoubtedly the most successful of the conventions from this period was the 1987 Montreal Protocol, an excellent and inspiring example of international cooperation for the good of the environment.

In the same year the World Commission on Environment and Development published its report *Our Common Future*. It was in this report—five years before the Earth Summit in Rio de Janeiro—that the concept of sustainable development was clearly defined. Sustainable

The ozone story

Ozone was discovered in 1840. The role it plays in shielding the Earth from ultraviolet radiation from space is a more recent discovery, but by the 1970s scientists had established that various chemicals in widespread use had the capacity to cause ozone depletion. That concern led UNEP and the World Meteorological Organisation to establish a coordinating committee in 1977 to periodically assess ozone depletion. International negotiations subsequently began on an agreement to phase out ozone depleting substances (ODS), leading finally to the 1985 non-binding Vienna Convention for the Protection of the Ozone Layer.

Then, in 1985 the scientific and political world was taken by surprise, and spurred to action, by the discovery by American and British researchers of a hole in the stratospheric ozone layer. The recognition by the global community that stronger measures were needed to phase out ODS led to the 1987 Montreal Protocol on Substances that Deplete the Ozone Layer.

The Montreal Protocol has been a remarkable success. As a result of the Protocol, emissions of ODS and their abundance in the lower atmosphere have peaked and are now slowly declining. Total consumption of chlorofluorocarbons (CFCs) worldwide decreased from about 1.1 million tons in 1986 to 156,000 tons in 1998.

Furthermore, since 1999, with the help of the Montreal Protocol's Multilateral Fund—a practical example of the principle of common but differentiated responsibilities—developing countries have also been implementing their commitments to freeze production and consumption of CFCs, leading gradually to a total phase-out by 2010. At the thirteenth meeting of the Parties to the Montreal Protocol, delegates heard that the majority of developing countries are in compliance with their commitments.

However, while the battle against CFCs is being won, new challenges are emerging. Although chlorine concentrations are declining, bromine concentrations, more effective at destroying ozone than chlorine, are increasing *(page 21)*. Concern is also growing about some new chemicals that are being used as substitutes for banned ODS. Although not controlled by the Montreal Protocol, these new chemicals may have ozone depleting properties, and scientists are recommending they be urgently assessed before their use becomes widespread.

In 2002, UNEP will publish a book tracing the history of the protection of the ozone layer, from its discovery in the nineteenth century through to the present. Each chapter will include personal memoirs from the prominent scientists, opinion makers and world leaders who alerted the world to the importance of the ozone layer and mobilised action for its protection.

The climate challenge

The world is getting warmer, and it is primarily due to human activity. That is the main finding of the latest Assessment Report of the Intergovernmental Panel on Climate Change (IPCC) *(page 20)*. The impact of global climate change will be predominantly negative, especially in the world's poorest countries. These findings are not new, though they have been corroborated and refined since IPCC was established in 1988. There was certainly enough evidence of global climate change in 1992 to spur the Earth Summit delegates to establish the United Nations Framework Convention on Climate Change (UNFCCC).

It was hoped that the UNFCCC and its Kyoto Protocol would attract the same support and have the same success as the 1987 Montreal Protocol on Substances that Deplete the Ozone Layer, which set new standards in international cooperation. However, despite, or perhaps because of, its ambitious targets for reducing greenhouse gas emissions, the 1997 Kyoto Protocol has yet to be ratified by the world's industrialised countries.

The Kyoto Protocol relies on the principle of common but differentiated responsibility. Some nations are high emitters; others contribute little to global warming but stand to be the worst affected. The Kyoto Protocol asks developed countries to reduce greenhouse gas emissions considerably from 'business as usual' projected levels. Therein resides the problem. Nations with high greenhouse gas emissions who do not anticipate negative impacts from climate change have little incentive to act; conversely those nations with low emissions who face major environmental impact have little leverage to force change.

The problem came to a head in the Netherlands in 2000 when world leaders failed to agree on how to make the Kyoto Protocol operational and how to strengthen financial and technical cooperation between developed and developing countries on climate-friendly policies and technologies. Agreement on a number of issues was finally reached in Marrakech, Morocco, in November 2001. The Marrakech Accords and Declaration set new emissions reduction targets for developed nations, with an average reduction of 5.2 per cent from 1990 levels by 2012. Also among the achievements of Marrakech was the establishment of a variety of clean development mechanism activities and funds that allow industrialised nations to offset emissions at home by planting trees. They also support the development of clean and renewable energy projects in the developing world.

For information on climate change, the Kyoto Protocol and the Marrakech Accords, visit *www.unfccc.de*.

development, said the report, is "development that meets the needs of the present without compromising the ability of future generations to meet their own needs." The report also went further than any before in linking environment and development. In the words of Gro Harlem Brundtland, the commission's chairman: "'Environment' is where we all live; and 'development' is what we all do in attempting to improve our lot within that abode. The two are inseparable."

The underlying text of that statement is that if we destroy our abode, there can be no development. Yet, during the twenty years between Stockholm and Rio the world continued to head towards environmental disaster. The signs were there for those who could see, but it was only during the 1990s, when the symptoms became more extreme, and the diagnostic tools more sophisticated, that organisations like UNEP were able to show categorically that the path we were on was unsustainable.

The promise of Rio

In her foreword to *Our Common Future* in 1987, Gro Harlem Brundtland commented that the period since Stockholm was a time of "standstill or even deterioration in global cooperation," and "a retreat from social concerns." Notwithstanding growing scientific evidence of environmental crises no-one was prepared to act. "Despite official hope expressed on all sides," she noted, "no trends identifiable today, no programmes or policies offer any real hope of narrowing the growing gap between rich and poor nations."

Narrowing that gap was central to the 1992 United Nations Conference on Environment and Development. By far the largest concentration of minds ever to consider the environment and development problems facing the planet, the Earth Summit, as it became known, created an immense sense of euphoria and optimism that, finally, real momentum was being created for global change. The Earth Summit brought together an unprecedented gathering of representatives from governments, civil society and the private sector. Among the 10,000 delegates were representatives from 172 nations, 116 of whom were heads of state; 1,400 NGOs were represented, and the conference was covered by 9,000 journalists.

Out of the Earth Summit came a number of achievements. Two major conventions were born: the United Nations Framework Convention on Climate Change, with its radical concept of "common but differentiated

responsibilities", and the Convention on Biological Diversity (for which UNEP provides the secretariat). Also created was the Commission on Sustainable Development. Agreement was reached to negotiate a world convention to combat desertification, a statement of non-legally binding principles for the sustainable management of forests was issued, and the Rio Declaration, a set of 27 principles reaffirming the 1972 Stockholm Declaration was published.

The crowning achievement of Rio, though, was Agenda 21: a blueprint for action for global sustainable development into the twenty-first century. An action programme that lays a solid foundation for building sustainable development, Agenda 21 is groundbreaking in its synthesis of social, economic and environmental elements into a single policy framework. In its introduction, the authors of Agenda 21 make a very clear point: "Underlying the Earth Summit agreements is the idea that humanity has reached a turning point. We can continue with policies which are deepening economic divisions between countries—which increase poverty, hunger, sickness and illiteracy and cause the continuing deterioration of the ecosystem on which life on Earth depends. Or we can change course. We can act to improve the living standards of those who are in need. We can better manage and protect the ecosystem and bring about a more prosperous future for us all. No nation can achieve this on its own. Together we can—in a global partnership for sustainable development."

The Malmö Declaration: a call for action

Throughout the 1990s the principles of sustainable development were reaffirmed at numerous international conferences convened to discuss topics as diverse as human rights (1993), population and development (1994), women (1995), and human settlements (1996). The impetus of Agenda 21 was also seen in the increased involvement of civil society in promoting sustainable development and, latterly, in opposing the perceived negative impact of globalisation. Agenda 21 also provided new momentum to private sector initiatives to improve environmental performance.

However, the same period also saw a measurable increase in global temperatures, culminating in the hottest year on record, 1998. That year was also dubbed the year of natural disasters as floods, landslides and earthquakes took an unprecedented number of lives. To many it was quite plain that extreme weather events were becoming more frequent and more severe, and that as our population grew and our settlements expanded, often with no forethought for infrastructure, basic amenities or safety, we were increasingly vulnerable to natural disasters. By the turn of the millennium, the human population had reached 6 billion, experts were warning of an impending water crisis, and the hole in the ozone layer had reached record levels. The euphoria and hope generated by the Earth Summit was being replaced by disillusion. It seemed we were slipping behind in the race for sustainable development.

In 1972, and again in 1992, the world's governments had declared their commitment to the principles of sustainable development. As the world used the turn of the millennium as an opportunity for taking stock, that commitment came under increasing scrutiny. Delegates at the first Global Ministerial Environment Forum, which met in Malmö in May 2000, were forthright. The Malmö Declaration notes with deep concern that "the environment and the natural resource base that supports life on Earth continue to deteriorate at an alarming rate," and that "there is an alarming discrepancy between commitments and action" in relation to sustainable development.

One of the functions of the first Global Ministerial Environment Forum was to send a strong message to the United Nations General Assembly, which was due to revisit the sustainable development debate at the Millennium Summit, in September 2000. The United Nations Secretary-General's report to the Millennium Summit was equally frank. "We must face up to an inescapable reality," he said. "The challenges of sustainable development simply overwhelm the adequacy of our responses. With some honourable exceptions, our responses are too few, too little and too late." These sentiments were echoed by the public: in the United Nations Millennium Survey, two-thirds of the 57,000 adults from 60 countries who responded said they thought their governments had not done enough to protect their environment.

Certainly, it seems that, despite the many declarations on sustainable development and the environment, the world's governments still do not fully understand how integral environmental considerations are to all their policy decisions. Kofi Annan remarked on this when he introduced his *Millennium Report*. He had asked the General Assembly to prepare for the Millennium Summit by concentrating on three global issues: freedom from want, freedom from fear, and the freedom of future generations to sustain their lives

on this planet. This third freedom, he noted, was not even identified in the original United Nations Charter, simply because at that time the founders of the United Nations could scarcely imagine that it would ever be threatened. Fifty years later, science is able to tell us clearly that our sustainable future is in jeopardy. Yet, noted Kofi Annan, "many of us have not understood how seriously that freedom *is* threatened. I am told that, in all your deliberations and all your preparatory work for the Millennium Assembly over the last 18 months, the environment was never seriously considered…. We are plundering our children's heritage to pay for our present unsustainable practices."

Working for a sustainable future

Now we are preparing to discuss sustainable development again. The World Summit on Sustainable Development is an opportunity to refocus our efforts towards a sustainable future. It is true that in many ways we have failed to fulfil the promises made 30 years ago and reiterated at the Earth Summit in 1992. It is also true that, with few exceptions, the environmental challenges we face today are significantly greater than they were in 1972. Yet, I do not think it is true that we have made no progress. In my view, the last 30 years have seen a process of maturation. When something is born—and I think that what we saw in Stockholm was the birth of a global environmental consciousness—it needs time to develop and grow, and I think that is what we have witnessed over the last three decades.

I think we have now reached a level of maturity whereby we can realistically expect to see things begin to happen. Thirty years ago we acknowledged that there was a problem, but I think we were not as aware as we are now of its scale or complexity. Much of the work of the past 30 years has been devoted to assessing the state of the environment and how it affects, and is affected by, human development. Our understanding of the tasks before us is now much more complete. Equally, the tools we need to tackle the problem have been developing. Some of those tools, like our ability to generate and disseminate focused environmental information, are now enormously sophisticated and effective; others, like the systems of governance needed to underpin sustainable development, need improving. Nevertheless, I think we are now ready to take a fresh look at Agenda 21 and make its goals a reality. Johannesburg is an opportunity to take stock of Rio, of what we promised, what we have achieved, and where we need to go. We do not need new priorities or visions. Nor do we need to rewrite

Environmental milestones of the last three decades

1971 Ramsar Convention on Wetlands of International Importance **1972** United Nations Conference on the Human Environment • United Nations Environment Programme (UNEP) established • *Limits to Growth* published by the Club of Rome • NASA Landsat satellite launched • UNESCO Convention Concerning the Protection of the World's Cultural and Natural Heritage **1973** Convention on Trade in Endangered Species of Wild Fauna and Flora (CITES) • Drought in the Sahel kills millions • First oil crisis • Cocoyoc Declaration identifies social and economic factors leading to environmental degradation **1976** Dioxin released in an industrial accident at a pesticides plant in Seveso, Italy **1977** Toxic chemicals leak into basements of houses in Love Canal, United States • United Nations Conference on Desertification (UNCOD) **1979** First World Climate Conference • Major accident at Three Mile Island nuclear power station, USA • Convention on Conservation of Migratory Species of Wild Animals **1980** *Global 2000* report published in the United States • *World Conservation Strategy* launched by IUCN, UNEP and WWF • Brandt Commission publishes *North-South: a programme for survival* • World Climate Programme establishes a platform for identifying important climate issues **1981** Great Barrier Reef inscribed on World Heritage list **1982** United Nations Convention on the Law of the Sea (UNCLOS) • World Charter for Nature brings attention to the intrinsic value of ecosystems **1983** World Commission on Environment and Development (WCED) (Brundtland Commission) **1984** Famine in Ethiopia caused by exceptional and long-lasting drought; 1 million die • Chemical accident at Bhopal, India, kills thousands and maims many more • Ozone hole first observed **1985** Vienna Convention for the Protection of the Ozone Layer • International Conference on the Assessment of the Role of Carbon Dioxide and other Greenhouse Gases **1986** World's worst nuclear disaster occurs at Chernobyl, Soviet Union, spreading radioactive fall-out over large areas of Europe • International Whaling Commission imposes a moratorium on commercial whaling • Fire in Basel, Switzerland, releases toxic chemicals into the Rhine, affects water supplies and kills fish as far north as the Netherlands **1987** Montreal Protocol on Substances that Deplete the Ozone Layer • WCED publishes *Our Common Future* (Brundtland report), publicises the concept of sustainable development • UNEP Governing Council calls for an ad hoc working group to investigate the possible form of a biodiversity convention **1988** United Nations recognises climate change as a "common concern of mankind" • Inter-governmental Panel on Climate Change (IPCC) created **1989** *Exxon Valdez* runs aground in Prince William Sound, Alaska, releasing some 50 million litres of crude oil into pristine Arctic environment • Basel Convention on the

Agenda 21, its validity has been repeatedly reaffirmed. We just need to work together to implement the Rio commitments.

UNEP will play a central role in the implementation of Agenda 21. UNEP's mission is clear: to lead the world in setting the environmental agenda and promoting the environmental dimension of sustainable development within the United Nations system. This mandate has been reaffirmed and strengthened over the past five years by the UNEP Governing Council, the Global Ministerial Environment Forum and the United Nations General Assembly. The United Nations has repeatedly acknowledged that environmental considerations are central to sustainable development; UNEP has thus been charged with an enormous responsibility.

Over the past half-decade UNEP has been transforming itself so it can effectively discharge that responsibility. UNEP's organisational structure has been streamlined *(page 47)* and its work has been focused on five priority areas: environmental information, assessment and early warning; coordination of conventions and the development of policy instruments; fresh water; industry and technology transfer; and support to Africa. Through its reorganised work programme and its divisional structure, UNEP is providing the tools that will create a sustainable future. UNEP has developed partnerships across the globe: with United Nations entities; with the private sector; with governments, NGOs and academic institutions, and, through its regional and out-posted offices, UNEP has established a more effective geographical presence and closer links with regional ministerial forums. This network enables UNEP to deliver a wide range of environmental services. Our sectoral and cross-sectoral assessment capability is unparalleled. This year UNEP is publishing the third in its GEO series of global environmental assessments. *GEO-3*, *(see page 35)* is an invaluable tool for everybody involved in sustainable development.

But assessment is only one weapon in the UNEP armoury. This report details how UNEP is guiding the world towards a sustainable future: by providing easily accessible environmental information based on the latest observing technologies; by developing policy instruments and coordinating multilateral environmental agreements; by working with governments and the private sector to promote best practices and clean technology transfer; by communicating the environmental message and working with civil society to maintain the momentum for change; and by collaborating with other United Nations entities

Transboundary Movements of Hazardous Wastes and their Disposal **1990** Eco-efficiency promoted as a goal for industry • First IPCC Assessment Report warns of impending global warming • Second World Climate Conference • Global Climate Observing System (GCOS) created **1991** Millions of litres of crude oil spilled and burned during Gulf War • Global Environment Facility established as a financing mechanism for a number of conventions. • *Caring for the Earth* published as a successor to the World Conservation Strategy **1992** United Nations Conference on Environment and Development (Earth Summit), creates *Agenda 21* programme of action • Convention on Biological Diversity (CBD) • United Nations Framework Convention on Climate Change (UNFCCC) • Fraser Island, the largest sand island in the world, inscribed on World Heritage List **1993** First meeting of Factor 10 Club, designed to reduce resource consumption by a factor of ten • Creation of the Chemical Weapons Convention **1994** United Nations Convention to Combat Desertification (UNCCD) • World Business Council for Sustainable Development created **1995** Second IPCC Assessment Report acts as a major incentive for the Kyoto Protocol **1996** International Standards Organisation creates ISO 14000 for environmental management systems in industry **1997** Kyoto Protocol of the UNFCCC • Rio +5 Summit convened in New York to review implementation of Agenda 21 • 19th Session of UNEP Governing Council; Nairobi Declaration establishes UNEP as the leading global environment authority **1998** Warmest year of the millennium • Extensive forest fires in Indonesia and Amazonia, linked to effects of drought caused by *El Niño* • 6th Special Session of UNEP GC establishes five UNEP priority areas **1999** World population reaches 6 billion • World Economic Forum: United Nations Secretary-General proposes Global Compact • ILO, UNEP and UNHCR launch Global Compact to engage corporations in promoting equitable labour standards, respect for human rights and protection of the environment • 20th Session of UNEP GC; new UNEP organisational structure approved **2000** Extent and depth of ozone hole reaches new records, affecting southern tip of South America • Biosafety Protocol on genetically modified organisms adopted • Malmö Declaration of First Global Ministerial Environment Forum calls for action on the environment • Millennium Summit held in New York • United Nations Millennium Declaration • Millennium Ecosystem Assessment established • World Water Forum **2001** IPCC publishes its Third Assessment Report, increasing its estimate of maximum expected temperature rise by the end of the century but lowering its estimates of sea-level rise • Stockholm Convention on Persistent Organic Pollutants (POPs).

Priority issues for sustainable development

The scope of this annual report indicates the complexity of sustainable development. So many issues are interlinked that when one tries to look at the overall picture the problems can seem too huge and intractable to overcome. Yet the report, which reflects the broad range of the UNEP programme of work, also indicates how the various issues must be tackled. If we approach each problem individually, but not in isolation, and work as partners towards a single clearly identified objective—a sustainable future for ourselves and our descendants—we can achieve our goals.

Throughout 2001, UNEP worked to prepare itself and its global partners—governments, United Nations entities, regional organisations, NGOs and the private sector—for WSSD. During that process a number of common concerns were identified *(page 19)*. However, under examination, the sustainable development debate boils down to one question: is there the political will to take the initiatives, and sometimes make the sacrifices, to ensure a sustainable future?

Some of the issues that need to be addressed at WSSD, and which are central to UNEP's work, are listed below:

- **Governance**
  How can commitment to environmental goals be turned into action? Is there the political will to create a greatly strengthened international environmental governance structure for sustainable development?
- **Production and consumption**
  How can sustainable consumption patterns be achieved, especially in the developed world?
- **Poverty alleviation**
  How can the poverty of the majority be alleviated? And can it be done without increasing the consumption that is depleting our natural resources?
- **Globalisation**
  Can globalisation be made to work for the good of all?
- **Business and environment**
  Can the environment be linked to the international trade and development agenda? Can cleaner production practices be encouraged?
- **Atmosphere**
  Can world leaders agree on global action to combat climate change? Can the momentum to restore the ozone layer be maintained?
- **Fresh water**
  Can the impending water crisis be addressed at international and national levels?
- **Land degradation**
  Can national, regional and global activities address land degradation?
- **Chemicals**
  How can the adoption of lifecycle principles to chemical production be encouraged?

to provide a sustainable environmental dimension to their work. Wherever governments, organisations or individuals are working for a sustainable future, UNEP is there to provide support.

Facing the challenges

The goal of the World Summit on Sustainable Development is to reinvigorate, at the highest political level, the global commitment to sustainable development. To do that we must agree to adhere to some basic principles. The principle of common but differentiated responsibility, as enshrined in Principle 7 of the Rio Declaration, is but one. Allied to that is the general concept that polluters, whether they be nations or industries, should be held accountable and should pay for their actions. The principle of green accounting should underlie all our development decisions. We must cease subsidising wasteful and polluting activities, whether deliberately or unthinkingly. Sustainable development demands that we factor in all the environmental costs of our consumption and production. Then there is the precautionary principle. Sometimes we cannot predict the environmental consequences of development. We must, as far as possible, adopt a precautionary approach to the development and dispersal of new technologies. Biotechnology is a good example. As we have seen repeatedly with invasive alien species, it is easy to introduce elements that are harmful to the environment, but it is much harder to remove them once they are in place.

The Summit must also address the major issues of sustainable development. How UNEP is doing that is the subject of Part II of this report. The foremost issue, as I mentioned earlier, is the combined question of how to reduce the excessive consumption of the affluent minority and, at the same time, to sustainably alleviate the poverty of the majority. Poverty destroys the environment and is a huge obstacle to sustainable development. But if we work together to achieve an equitable distribution of the world's riches, consistent with the principles outlined above, we will have laid the foundations for a sustainable future for all.

A major tool in that process is globalisation. The information explosion of the past decade has transformed how we do our business, and is rapidly empowering sectors of society previously denied a voice. Yet globalisation will

only be a force for good if we determine that it must be. Globalisation is not just about opening new markets to multinational corporations, it must be a means for developing countries to generate income to finance their own development. Nor should globalisation be allowed to destroy the immense cultural and spiritual riches on which our societies depend. The more diverse our environment, whether culturally or biologically, the more resources we have to draw on to solve our problems. Respect for each other and respect for the environment are necessary conditions for a stable and secure future. These are the messages we must carry in our minds in Johannesburg, and beyond.

A sustainable future? It's our choice.

It is 30 years since UNEP was established as the voice for the environment within the United Nations system. During those 30 years we have seen staggering developments in

UNEP support for Africa

Africa is blessed with significant natural resources, but it also faces the greatest environmental challenges. Its available fresh water and fertile soils are inequitably distributed. It has the highest proportion of degraded agricultural land, and it stands to suffer most from climate change. Africa has the worst and most widespread poverty, and the highest prevalence of AIDS—two-thirds of all people with HIV/AIDS live in sub-Saharan Africa. Africa has the greatest environmental and socio-economic problems and the fewest technological, human, institutional and financial resources to deal with them. These are among the reasons why support for Africa is a priority for the United Nations and UNEP. Highlights of UNEP support to Africa in 2001 include:

Support to NEPAD. In June 2001, the Organisation of African Unity launched the African Union and adopted an African rejuvenation plan, the New Partnership for African Development (NEPAD). UNEP is supporting NEPAD—specifically its environmental component—through a Global Environment Facility (GEF) project, approved in July 2001, to support the possible establishment of a Pan-African Environment Agency.

Support to AMCEN. The African Ministerial Conference on Environment (AMCEN) is Africa's leading forum for high-level policy development on the environment. The UNEP Regional Office for Africa serves as the AMCEN secretariat, and UNEP provides support and capacity-building to African nations to implement international environmental agreements and to participate fully in their formulation.

Preparing for WSSD. UNEP supported the African preparatory process for WSSD by organising five subregional meetings and the African Preparatory Conference for WSSD in October 2001. The meeting agreed a Ministerial Statement on Africa's perspectives on the implementation of Agenda 21 and the way forward.

Support to subregional organisations. UNEP is working with a number of subregional organisations to ensure that the environmental agenda is integrated into subregional and national planning. The preparation process for WSSD has increased cooperation between UNEP and African subregional organisations.

Much UNEP work is global, like its support to international environmental agreements and initiatives that cover such diverse issues as the ozone layer, biological diversity, and the use and transport of chemical pollutants. All regions, including Africa, receive this support. Aspects of UNEP work that are more Africa-specific include:

- The Africa Land and Water Initiative and the Desert Margins Programme *(page 28)*.
- The UNEP/Habitat Managing Water for African Cities project *(page 24)*.
- The African Rural Energy Enterprise Development (AREED) initiative *(page 39)*.
- The joint UNEP/UNDP/Dutch Project on Environmental Law and Institutions in Africa, which enhances national environmental legislation and related institutions.
- Support to African ministers at the International Water Conference, Bonn, December 2001 *(page 24)*.
- Preparation of the *Africa Environment Outlook (page 36)*.
- Support to the Lusaka Agreement on Cooperative Enforcement Operations Directed at Illegal Trade in Wild Fauna and Flora *(page 31)*.

Developing environmental law

The evolving framework of international environmental laws and the complementary development of national laws provide the basis for addressing the major environmental threats of the twenty-first century and creating a sustainable future. While national governments are ultimately responsible for taking legal and related measures to address environmental problems and achieve sustainable development, organisations like UNEP have an important role. UNEP is the world's leading global environment authority. It sets the global environment agenda and promotes the coherent implementation of the environmental dimension of sustainable development. It helps identify environmental problems, builds and disseminates knowledge about them, helps build international consensus on measures to address them, and promotes the implementation of such measures.

Developing international environmental law has been a key UNEP activity since its establishment. In its first decade, UNEP involvement was on an ad hoc basis. Then, in 1981, a group of senior officials expert in environmental law representing governments from around the world met in Montevideo, Uruguay, to develop a long-term, strategic plan for UNEP in the field of environmental law.

The Montevideo Programme for the Development and Periodic Review of Environmental Law was adopted by the UNEP Governing Council in 1982, and successfully implemented between 1982 and 1992. In 1993 the Montevideo II programme was adopted to respond to the requirements of Agenda 21. This ran through to 2001 when the third Montevideo Programme was adopted by the twenty-first UNEP Governing Council.

Under the Montevideo Programme a number of global environmental conventions have been developed under UNEP auspices, covering such things as ozone depletion, hazardous wastes, biodiversity and persistent organic pollutants. UNEP has also facilitated the development of several regional agreements, including over 13 regional seas conventions and action plans. Furthermore, UNEP has facilitated the development of other global and regional conventions by providing law-makers with environmental assessment and information on significant issues.

Among its programme areas the Montevideo Programme addresses the need for capacity strengthening so nations can take legal and institutional measures to protect their environment, achieve sustainable development and participate fully in the negotiation and implementation of international environmental legal instruments. To this end UNEP assists states to develop laws and helps develop and strengthen relevant institutions. During the past decade over 100 countries used UNEP legal advisory services to enhance their national environmental legislation. For instance, UNEP is currently helping to develop legal instruments to protect the ecosystems of the Central Asian, Caucasus and Carpathian mountains as part of activities to support the International Year of Mountains (2002).

Since the 1972 Earth Summit, the body of environmental law has developed significantly. As was emphasised in the Malmö Declaration, the challenge now facing the international community is ensuring that the commitments contained in existing environmental instruments are implemented. In the overall context of sustainable development, more integrated, holistic approaches are needed to address the sources of environmental problems identified by these instruments, and more international cooperation and support is necessary to help developing countries undertake their commitments. Furthermore, coherence among diverse environmental legal instruments is called for, and implementation and enforcement of these instruments must be carried out at all levels.

These are some of the challenges facing the world as it prepares for WSSD. Throughout 2001, environment ministers have been debating issues related to international environmental governance in a process instigated by the UNEP Governing Council *(page 32)*. This process should result in a new impetus to resolve the root causes of global environmental problems. To sustain this impetus, there will be more demands on, and for, environmental law. UNEP is committed to helping governments meet such increased demand.

Taken from The Role of UNEP in the Development of International Law*, a presentation by the UNEP Deputy Executive Director to the International Conference on International Law in the New Millennium, New Delhi, India, October 2001. The full text is available on the UNEP web site* www.unep.org/MediaRoom/speeches.

technology, and a 50 per cent increase in the planet's human population. In geological terms 30 years is no time at all. Even the time the human race has occupied a niche on Earth is minuscule relative to the age of the planet. Yet our influence has been disproportionate. Not since the dinosaurs became extinct 65 million years ago has the Earth seen such profound change. We have been altering the natural environment throughout our history, but in our lifetimes the pace of that change has accelerated, and it seems it is accelerating beyond our control.

Human nature is what it is. We change landscapes, drain swamps, fell forests, build cities, remove wildlife and engineer animals and plants to suit our needs. We like to think we are in control. But now we are discovering the unwanted and unforeseen effects of our work. In brief, we are placing in jeopardy many of the life-support systems on which we and our descendants depend.

It is possible to make the argument that if one is unaware of the consequences of one's actions, one cannot be held responsible. No longer can we claim that defence. The story of the last 30 years is one of advances and reversals. We have made headway in addressing some environmental issues, we have failed conspicuously in dealing with others. But all the time our understanding of our place in nature and our impact on the natural environment has been growing. While we do not yet have the complete picture, we know enough to take responsibility for our actions, and we know enough to begin to reverse some of the negative impacts of our occupancy of this planet.

As we prepare to yet again address the challenges of a sustainable future, we are faced with an amazing opportunity. We can, perhaps for the first time, choose what kind of world we want to live in. We can continue on the road we are on and create a version of hell on Earth, where civil strife and environmental degradation combine in a vicious cycle to make life miserable for an ever greater number of people. Or we can work together to make the world a better place for all. We have the tools to do it. What we have to ask ourselves is: "Do we have the political will?" I hope we do. The choice is ours.

Working for a sustainable future

Over the past four years UNEP has been through a process of organisational strengthening and reorientation. The past year brought a sense of closure to that process as the twenty-first UNEP Governing Council met to consider the organisation's achievements and to guide its programme of work over the next biennium. The consensus was that UNEP has become a cost-effective, focused organisation, and that its seven sub-programmes are working effectively to fulfil the UNEP mandate. As well as endorsing the organisation's work, and approving the 2002–2003 UNEP budget of $119.9 million, the Governing Council adopted over 30 decisions on a variety issues, including international environmental governance and law, desertification, biosafety, climate and atmosphere, and the chemicals agenda.

The twenty-first UNEP Governing Council also marked the second meeting of the Global Ministerial Environment Forum (GMEF). First convened in 2000, the GMEF is primarily concerned with promoting policy coherence in the environmental field. At its first session the GMEF produced the Malmö Declaration, which sent a strong message to the world, via the United Nations General Assembly, that it was time to move from commitments to action. A major theme for the second GMEF was the reform, strengthening and streamlining of international environmental governance *(page 32)*. To that end the Governing Council established an open-ended intergovernmental group of ministers which met four times in 2001 to review institutional weaknesses and future needs and options for international environmental governance. Their report will underpin discussions at the third GMEF and seventh Special Session of the UNEP Governing Council, which meets in Cartagena, Colombia, in February 2002. That meeting will, in turn, provide UNEP input on environmental governance to the World Summit on Sustainable Development (WSSD) in Johannesburg, South Africa, in August 2002.

Preparations for WSSD provided the backdrop to much of UNEP's work in 2001. Across the globe, UNEP supported a series of subregional and regional preparatory meetings to identify accomplishments, shortcomings and emerging issues in relation to Agenda 21 *(page18)*. These meetings have played a key role in crystallising the views of governments, civil society and the private sector in the run-up to WSSD. Over the same period work continued worldwide on the production of a third UNEP Global Environment Outlook, *GEO-3 (page 35)*. *GEO-3's* multi-sectoral regional and global assessment of the state of the environment will be a major resource for all WSSD participants, as will UNEP's revolutionary web-based environmental information database UNEP.net, which was launched during the Governing Council *(page 37)*.

GEO-3 identifies a wide spectrum of existing and emerging issues that need to be addressed if the world is to achieve sustainable development. Many of these issues were the subject of Governing Council decisions in 2001, prominent among them being decisions to undertake a global assessment of the health and environmental impacts of mercury, to promote an initiative to remove lead from gasoline, to approve the Montevideo III programme on

United Nations Environment Programme selected meetings in 2001

January: 1st Continental Conference for Africa on Unwanted Stockpiles of Hazardous Wastes, Rabat, Morocco; 1st Meeting of the Environment Management Group, Geneva, Switzerland; Cariforum Meeting of Ministers of the Environment, Belize.
February: 21st Session of the UNEP Governing Council / 2nd Global Ministerial Environment Forum, Nairobi, Kenya; International Conference on Trade, Environment and Sustainable Development: Latin America and the Caribbean Perspectives, Mexico; 3rd Meeting of the World Commission on Dams Forum; Cape Town, South Africa.
March: Meeting of Ministers of the Environment of the Americas, Montreal, Canada; Bureau Meeting of the Intergovernmental Committee to the Cartagena Protocol on Biosafety, Montreal, Canada; 33rd Meeting of the Executive Committee to the Multilateral Fund, Montreal, Canada.
April: 17th Session of the Intergovernmental Panel on Climate Change, Nairobi, Kenya; UNEP Financial Initiatives Regional Conferences, Manila, Philippines, and New York, USA; Finance, Mining and Sustainability, Washington DC, USA; 1st Open-ended Meeting of the Intergovernmental Group of Ministers on International Environmental Governance, New York, USA.
May: 10th Meeting of the Convention on Migratory Species Scientific Council, Edinburgh, United Kingdom; UNEP Insurance Industry Initiative, Paris, France; 1st CITES Wider Caribbean Hawksbill Turtle Dialogue Meeting, Mexico D.F., Mexico; Diplomatic Conference for an International Legally Binding Instrument for Implementing International Action on Certain Persistent Organic

environmental law, and to support the development of compliance regimes for multilateral environmental agreements. Other decisions covered issues such as trade and environment, chemicals, strengthening the Global Programme of Action for the Protection of the Marine Environment from Land-based Activities (GPA), improving the strategic framework on environmental emergency prevention and preparedness, and the implementation of a wide range of multilateral environmental agreements in areas such as desertification, forests, coral reefs, biosafety and atmosphere *(see pages 18 to 43)*.

High on the UNEP agenda in 2001 was the need to forge a workable agreement on climate change. Two rounds of intensive meetings on the implementation of the Kyoto Protocol—in Bonn, Germany, in July, and Marrakech, Morocco, in November—led to an agreement by the world's industrialised nations (with the exception of the United States) to reduce their greenhouse gas emissions by just over 5 per cent by 2010. The success of the talks offers new hope for the planet, and especially Africa, which will be hardest hit by climate change. The next step is to press for the ratification of the 1997 Kyoto Protocol of the United Nations Framework Convention on Climate Change before WSSD in August 2002.

UNEP was also active at the World Trade Organisation talks, held in Doha, Qatar, in November. Linking international trade and the environment is a UNEP priority *(page 40),* so it was a significant breakthrough when the trade ministers of 140 countries accepted that the globalisation of trade and the reduction of trade barriers must take into account environmental issues and the development needs of the world's poorest countries. Ministers at Doha also took the first steps towards reducing or phasing out so-called perverse subsidies in areas such as fisheries that can destroy fish stocks and the local industries that depend on them.

Another notable achievement in 2001 was the adoption by 127 countries of the Stockholm Convention on Persistent Organic Pollutants in May 2001. The Stockholm Convention seeks to eliminate or restrict the production of an initial list of twelve chemicals that have been shown to adversely affect the environment through their tendency to persist and biomagnify through the food chain to the detriment of human and animal health. The elimination of POPs is part of a larger UNEP initiative on chemicals *(page 23)* that aims to promote the safe production, use and disposal of chemicals for the benefit of both mankind and the environment.

Klaus Töpfer, UNEP Executive Director. Mr. Töpfer was appointed to a second four-year term, from February 2002, by the United Nations General Assembly in 2001.

The launch of the Action Phase of the UNEP-led International Coral Reef Action Network (ICRAN) was another 2001 highlight. The ICRAN project is an umbrella activity developed by UNEP and the World Fish Centre to address the decline of the world's coral reefs. The project received a boost in 2001 when it received a $10 million pledge from the United Nations Foundation (UNF), the largest to date in the UNF environment portfolio. The importance and plight of corals was also the subject of a major UNEP publication, the *World Atlas of Coral Reefs*. Launched in September 2001, the atlas, prepared by the UNEP World Conservation Monitoring Centre, provides the most detailed assessment yet of the world's coral reefs.

Assessing the marine environment *(page 26)*, and its pollution by land-based activities, is a major UNEP concern.

Pollutants, Stockholm, Sweden; *GEO-3* Regional Consultations for the ASEAN Region (Bangkok, Thailand), North America (Ottawa, Canada), Central Asia (Ashgabat, Turkmenistan.
June: World Environment Day hosted by Havana, Cuba, and Torino, Italy; *GEO-3* Regional Consultations for West Asia (Manama, Bahrain), Europe (Geneva, Switzerland), NW Pacific and East Asia (Beijing, China), South Pacific (Apia, Samoa), Africa (Nairobi, Kenya), Australia and New Zealand (Christchurch, New Zealand), South Asia (Colombo, Sri Lanka); Subregional preparatory meetings for WSSD: South Cone region and Caribbean region; Expert Meeting on Handling, Transport, Packaging and Identification of Living Modified Organisms, Paris, France; Roundtable on Government Initiatives to Promote Corporate Sustainability Reporting, Paris, France; 45th Meeting of the CITES Standing Committee, Paris, France; Africa Environment Outlook Regional Consultations, Nairobi, Kenya; Regional Action Programme for the Protection of Coral Reefs, Riyadh, Saudi Arabia.
July: Subregional preparatory meetings for WSSD: Andean region and Mesoamerica region; 4th Governing Council Meeting of the Parties to the Lusaka Agreement, Nairobi, Kenya; 13th Meeting of the Monitoring Committee on the Action Plan for the Caribbean Environment Programme and Special Meeting of the Bureau of Contracting Parties to the Convention for the Protection and Development of the Marine Environment of the Wider Caribbean Region, San Jose, Costa Rica; 34th Meeting of the Executive Committee to the Multilateral Fund, Montreal, Canada; 6th Session (Part 2) of the Conference of Parties to the United Nations Framework

In November, the UNEP-initiated Joint Group of Experts on the Scientific Aspects of Marine Environment Protection published a report identifying sewage as a significant cause of marine environmental degradation. The report was a major input to the first intergovernmental review meeting of the GPA which met in Montreal, Canada, in November. Earlier in the year scientists involved in another UNEP initiative, the Global International Waters Assessment (GIWA), warned of an impending crisis in the Black Sea due to a combination of over-fishing, pollution and alien species, when they met in Kalmar, Sweden, for the first GIWA General Assembly.

GIWA's focus is on both marine and freshwater issues, another UNEP priority area *(page 24)*. In December UNEP participated in the International Freshwater Conference in Bonn, Germany, where it assisted African ministers to draft a new and visionary declaration on water which will feed into Africa's contribution to WSSD. At the centre of the strategy is the issue of sanitation and reducing deaths from sewage-contaminated water. It is estimated that as many as 6,000 Africans, mostly children, die every day as a result of poor sanitation.

These are some, but by no means all, of the highlights of the UNEP year. Details of these, and other aspects of UNEP work in 2001, feature throughout the following pages. The final highlight to be mentioned here was United Nations General Assembly's decision to reappoint the UNEP Executive Director, Klaus Töpfer, for a second four-year term. "I am absolutely delighted that the General Assembly has given me its backing," said Mr. Töpfer, who has presided over the restructuring and rejuvenation of UNEP. "I thank the Secretary-General for his support and belief in me as the right person to take the United Nations' environmental mandate forward."

United Nations Environment Programme selected meetings in 2001

Convention on Climate Change, Bonn, Germany; 2nd Open-ended Meeting of the Intergovernmental Group of Ministers on International Environmental Governance, Bonn, Germany.
August: Working Group of Experts Meeting on Compliance and Enforcement of MEAs, Geneva, Switzerland.
September: Expert Meeting on the Implementation of the Arab Regional Programme to Combat Desertification, Muscat, Oman; 3rd Open-ended Meeting of the Intergovernmental Group of Ministers on International Environmental Governance, Algeria; COMESA / IGAD Regional preparatory Meeting for WSSD, Djibouti; European Preparatory Conference for the International Year of the Mountain and the International Year of Ecotourism, St. Johann, Austria; ECE Regional Meeting for WSSD, Geneva, Switzerland; 1st Meeting of the Contracting Parties to the Protocol Concerning Specially Protected Areas and Wildlife, Havana, Cuba; 18th Session of the Intergovernmental Panel on Climate Change, London, United Kingdom.
October: ECOWAS / CILSS regional Preparatory Meeting for WSSD, Abidjan, Côte d'Ivoire; WSSD Consultative Meeting with Industry Associations, Paris, France; 8th Session of the Intergovernmental Negotiating Committee for the Rotterdam Convention, Rome, Italy; 1st Global International Waters Assessment General Assembly, Kalmar, Sweden; Africa Preparatory Conference for WSSD, Nairobi, Kenya; 13th Meeting of the Parties to the Montreal Protocol on

UNEP and the GEF

The Global Environment Facility (GEF) is a partnership between the United Nations Development Programme (UNDP), UNEP and the World Bank to address global environmental problems. The GEF provides new and additional grant and concessional funding to meet the incremental costs of measures to achieve global environmental benefits in four focal areas:

- Biological diversity.
- Climate change.
- International waters.
- Ozone depletion.

The incremental costs of activities concerning land degradation, primarily desertification and deforestation, as they relate to the four focal areas are also eligible for funding, and it is proposed that land degradation be designated a focal area in its own right at the next GEF Assembly to be held in 2002. The GEF is also the financial mechanism for the Stockholm Convention on POPs *(page 23)* and the Cartagena Protocol on Biosafety *(page 31).* Currently, 171 countries participate in the GEF.

UNEP has a key role within the GEF, catalysing the development of scientific and technical analysis and advancing environmental management in GEF-financed activities. UNEP provides guidance on relating GEF-financed activities to global, regional and national environmental assessments, policy frameworks and plans, and international environmental agreements. As trustee for the environment, UNEP plays a distinctive and strategic role in the GEF, cooperating with UNDP and the World Bank as a full partner. The global environmental assessments implemented by UNEP, like the Millennium Ecosystem Assessment *(page 34)*, Global International Waters Assessment *(page 27)*, Land Degradation Assessment in Drylands *(page 28),* and Regionally-based Assessment of Persistent Toxic Substances *(page 23)* build upon more than 25 years experience in this field. For this reason, UNEP has been selected to provide the scientific underpinning of GEF activities and to provide secretariat support to the Scientific and Technical Advisory Panel of the GEF (STAP). During 2001 the UNEP Executive Director initiated the reconstitution of STAP for the third phase of the GEF, and the new Panel will start its mandate in July 2002.

In 2001, 51 GEF full-size and medium-sized projects were implemented by UNEP, and 31 projects were in preparatory phase. UNEP, through the implementation of 176 GEF enabling activities, is building capacity in more than 120 countries in the areas of biodiversity (27 countries), climate change (24 countries), persistent organic pollutants (17 countries), and biosafety (108 countries). The portfolio of activities ongoing in 2001 was valued at $367 million, including $193 million GEF financing. In addition UNEP is currently co-implementing, with partner agencies, sixteen projects of $129 million whose UNEP component is valued at $24 million. The work programme involves 144 countries directly, though the wider environmental benefits arising from these activities, and the major global assessments, mean that UNEP work within the GEF has truly global impact.

Specific UNEP/GEF projects and initiatives in 2001 are highlighted throughout the following pages. For more information on UNEP/GEF visit: *www.unep.org/GEF*.

Substances that Deplete the Ozone Layer, Colombo, Sri Lanka; Regional Preparatory Process for WSSD, Rio de Janeiro, Brazil; 13th Meeting of the Forum of Ministers of the Environment of Latin America and the Caribbean, Rio de Janeiro, Brazil; 1st Intergovernmental Meeting of Experts to Develop Guidelines on Compliance and Enforcement of MEAs, Nairobi, Kenya.

November: Launch of *GEO for Youth* in Latin America; Annual Meeting of the Directors of UNEP/UNIDO National Cleaner Production Centres, Seoul, South Korea; Africa GIS 2001 Conference, Nairobi, Kenya; Side-event on Maximising Net Development Gains from Trade at the 4th WTO ministerial Conference, Doha, Qatar; 12th Ordinary Meeting of the Contracting Parties to the Barcelona Convention, Monaco; 1st Intergovernmental Review Meeting on the Implementation of the GPA, Montreal, Canada; 4th Open-ended Meeting of the Intergovernmental Group of Ministers on International Environmental Governance, Montreal, Canada.

December: 35th Meeting of the Executive Committee to the Multilateral Fund, Montreal, Canada; Preparatory Conference for the International Year of Ecotourism, Seychelles; 23rd Meeting of the Convention on Migratory Species Standing Committee, Bonn, Germany.

For a full list of UNEP meetings in 2001 and forthcoming meetings in 2002 contact UNEP CPI (page 48).

Chapter 38 of Agenda 21 acknowledged UNEP as the principal global environmental body and called for the strengthening of UNEP regional offices. This was completed in 1998 with the establishment of the UNEP Division of Regional Cooperation. By virtue of its enhanced regional structures and the support it gives to regional ministerial forums, UNEP was given a key role in regional preparations for WSSD.

The goal of WSSD is to reinvigorate the global commitment to sustainable development. As part of that process the United Nations General Assembly asked for national and regional reviews of progress towards the goals of Agenda 21 covering achievements and lessons learned, impediments to achieving the goals of Agenda 21, new challenges and opportunities that have emerged since the Earth Summit, and ways of strengthening the institutional framework of sustainable development.

Within guidelines established by the United Nations Department for Economic and Social Affairs, UNEP and its partners established a framework for the regional preparatory process and catalysed action to produce the defined outputs. Assessments of the progress made towards Agenda 21 goals and the constraints on its implementation were prepared as inputs to the regional consultations. UNEP also ensured that the conclusions of other global and regional studies and assessments, for instance *GEO-3 (page 35),* GIWA *(page 27)* and other economic and environment reports and surveys, were considered.

The comprehensive assessment of progress achieved in implementing Agenda 21 allowed specific proposals for future action to be formulated, together with an indication of institutional and financial requirements. This process was conducted by national consultations followed by subregional preparatory meetings. In addition, all regions held multistakeholder consultations and separate private sector, civil society and parliamentarian meetings. UNEP supported private sector input to WSSD with three parallel initiatives:

- Sectoral reports, where international industry organisations took stock of progress towards sustainable development and outlined future challenges.
- Regional consultations, where multi-stakeholder forums put forward key industry and sustainability issues for the consideration of decision-makers.
- A UNEP assessment report on industry's progress towards the implementation of Agenda 21.

The conclusions of all these meetings served as inputs to the regional meetings, which met during 2001 to approve the regional assessment reports and define regional positions for WSSD. These regional consultations agreed on ministerial statements and programmes of action for the Johannesburg Summit.

The regional assessment reports and ministerial statements show considerable similarity in their definitions of the challenges to sustainable development. The issues of greatest common concern are:

Poverty, declinining life expectancy, high population growth, lack of education and unemployment impede development and contribute to environmental degradation.

Financial constraints and the debt burden are a constraint on the past and future implementation of Agenda 21. Regarding past implementation, debt, lack of investment and declining aid flows are particularly singled out.

Globalisation is high on the list of constraints in all regions. Particular aspects that receive attention include economic slowdown and competition from external sources, inadequate access to markets and inefficient domestic production.

Inadequate management of the natural resource base is seen by all regions as a constraint on the effective implementation of Agenda 21, both causing and being caused by poverty.

Governance. Issues include the over-centralised and sectoral nature of governments, limited decentralisation of national financial powers, inadequate institutions, the need for improving the effectiveness of international environmental institutions, the need to strengthen coordination, government transparency and democracy, and the need to increase civil society involvement in sustainable development.

The increasing occurrence of disasters and their links with environmental factors is cited by all regions. The aspects highlighted include natural disasters, mitigation strategies, the effects of climate change, and industrial accidents.

Conflict. The increase, or the continuing intractability, of instances of civil conflict in some regions is a constraint on

development, with the attendant problem of the care and later rehabilitation of refugees and displaced persons.

Technology transfer. Particularly in the less developed regions, sustainable development is hampered by the lack of adequate access to new technologies and the slowness of technology transfer. Aspects that are cited included the digital divide, the lack of resources for research and development, and the inadequate transfer of environmentally sound technologies.

Health. Most regions cite health issues, in particular inadequate healthcare and the HIV/AIDS pandemic, as a constraint on the implementation of Agenda 21 and a major factor contributing to poverty and hampering economic development.

Region-specific issues. Some regions cite very specific concerns. These include consumption patterns (Asia and the Pacific), air pollution (Europe, North America, West Asia), particular cultural and spiritual factors (West Asia, Latin America and the Caribbean, Asia and the Pacific), inadequate environmental education (West Asia), aridity (West Asia and Africa), food security (Africa, Asia and the Pacific) and the need for assessment and criteria for sustainable development (Europe, North America).

UNEP contributions towards the Johannesburg Summit go well beyond the regional preparation process. Each UNEP sub-programme is supporting the implementation of Agenda 21 through the UNEP programme of work. Specific contributions to WSSD—for instance reports, assessments and UNEP-sponsored meetings—are part of longer term strategies to achieve sustainable development which are detailed throughout the following pages.

Youth for sustainable development

Sustainable development means passing on a safe and productive environment to future generations. UNEP therefore places great emphasis on communicating with the youth of today. Communication is a two-way process; while UNEP is helping educate today's youth about the environmental needs of tomorrow, it is also helping the voice of youth be heard. In February 2001 representatives of the UNEP Youth Advisory Council addressed the UNEP Governing Council and Global Ministerial Environment Forum. Their statement called for the implementation of policies, not more meetings and negotiations. They emphasised the link between poverty, over-consumption and the environment and called on governments to cancel debt, fulfil overseas development aid commitments of 0.7 per cent of GNP, impose green taxes on international trade, develop and utilise sustainable development indicators, and create incentives, policies and measures to reduce consumption.

The UNEP Youth Advisory Council is a group of 12 youth leaders (2 per region) elected biennially at the UNEP Global Youth Retreat, one facet of the UNEP Children and Youth Programme begun in 1985, the International Year of Youth. Other activities of the programme include developing global networks and publications for children and youth, and organising the International Children's Conference on the Environment and the Global Youth Forum. The first UNEP Global Youth Forum, organised by UNEP and the Danish organisation Natur og Ungdom (Nature and Youth) will be held in March 2002. It will enable young people from around the world to contribute to sustainable development discussions and to prepare a statement for WSSD. This process, titled Youth for Sustainable Development, was launched at the World Youth Conference on Environment and Sustainable Development, in Borgholm, Sweden, in May 2001.

The importance of engaging youth was illustrated later in 2001 with the publication of *Is the Future Yours?*, a joint UNEP/UNESCO report based on a survey of youth consumption patterns and perceptions of sustainable development. The survey, which reached 10,000 middle-class youths living in major cities in 24 countries around the world, highlighted confusion regarding consumption behaviour. For example, the respondents said that they: (1) do not understand how their shopping behaviour can impact the environment, although they are aware of the environmental consequences of product use and disposal; (2) prefer individual action to collective action to improve the world; and (3) consider as major concerns for the future: environment, human rights and health. To respond to this lack of information and to translate youth values and concerns into day-to-day actions, UNEP and UNESCO have launched *YouthXchange,* a web-based 'train the trainer' tool providing youth and consumer associations, schools and local authorities with material to set up constructive and youth-friendly events, campaigns or training sessions on sustainable living. The survey report can be found at *www.uneptie.org/pc/sustain/youth/youth.htm.*

UNEP work with children includes organising the International Children's Conference on the Environment. The fourth Children's Conference, which will bring together 800 children between 10 and 12 years old from 115 countries, will be held in Victoria, British Columbia, Canada, in May 2002. In December 2001, six children from around the world were selected to join eight Canadian children previously selected to a Junior Board which will help organise the conference. A key outcome of the conference will be recommendations for legislative and policy changes for WSSD.

Atmospheric protection, the subject of Chapter 9 of Agenda 21, has four programme areas: improving the scientific basis for decision-making; promoting sustainable development; preventing ozone depletion; and addressing transboundary atmospheric pollution. UNEP is active in all four areas. UNEP assessments are helping convince scientists and world leaders of the urgency of climate change mitigation. At the same time UNEP is supporting sustainable development and addressing transboundary atmospheric pollution by promoting cleaner production and renewable energy *(page 39)*. UNEP is also working to restore the ozone layer by providing the secretariat for the Montreal Protocol and by spearheading the phase-out of ozone-depleting substances *(opposite)*.

The ozone crisis mobilised unprecedented international action, and it is possible now to predict an end to the problem. Climate change is another story. It is the most urgent issue facing the international community today. Tackling the causes of global warming is essential for sustainable development.

Since Rio there has been some progress. International consciousness has grown, and some international mechanisms have been developed to combat climate change. There have also been advances towards cleaner energy production and more efficient use of fossil fuels. Nonetheless, the world is still heating up, predominantly due to human-induced emissions of greenhouse gases. Those emissions continue to increase as the world's population, and its demand for energy, grows.

Despite some scepticism from a minority of scientists and governments, the compelling evidence of global climate change is now widely accepted. The responsibility for this lies primarily with the authoritative reports of the Intergovernmental Panel on Climate Change (IPCC), established in 1998 by UNEP and the World Meteorological Organisation (WMO). The role of IPCC is to assess the scientific, technical and socio-economic information relevant for understanding human-induced climate change. IPCC does not carry out new research but bases its assessments on published and peer-reviewed information. It has produced three Assessment Reports since 1988. These reports have been essential to establishing an international framework for addressing climate change issues.

The Third IPCC Assessment Report was completed in 2001 and approved at the eighteenth session of the IPCC held in London, UK, in September. The report builds on previous assessments and incorporates new results from the past five years. Among the findings of the report are:

- Observations show a warming world and other changes in the climate system. Most of the warming observed over the last 50 years is attributable to human activities.
- Increases in temperature have already affected hydrological systems and terrestrial and marine ecosystems in many parts of the world.
- Climate change will have beneficial and adverse effects on environmental and socio-economic systems, but adverse effects predominate as change gets greater.
- Overall, climate change is projected to increase threats to human health, particularly in lower income populations, predominantly in tropical and subtropical countries. The impacts of climate change will fall disproportionately upon developing countries and the poor within all countries, and thereby exacerbate inequities in health status and access to adequate food, clean water, and other resources.
- Climate change will exacerbate water shortages in many water-scarce areas of the world.

The Third IPCC Assessment Report is at *www.grida.no/climate/ipcc_tar/index.htm*. The IPCC web site is at: *www.ipcc.ch*

The work of IPCC and other UNEP-supported assessments like the GEO reports *(page 35)* and the UNEP financial services initiative, which released a report in 2001 estimating the cost of global warming *(page 40),* have provided much of the momentum for establishing a consensus on climate change during ongoing negotiations within the UNFCCC. The success of the two rounds of climate talks held in 2001 *(page 6),* have increased optimism that the leaders of the industrialised world may heed the call of the United Nations Secretary-General to ratify the Kyoto Protocol before WSSD. In the run-up to WSSD, IPCC is preparing two technical papers, on biodiversity and climate change, and on climate change and sustainable development.

In recognition of the effectiveness of IPCC, the twenty-first UNEP Governing Council asked UNEP to enhance its support to IPCC and the related Global Climate Observing System. UNEP and WMO have agreed to strengthen their cooperation in managing the IPCC secretariat. UNEP has also prepared a plan for a more strategic engagement in the IPCC process to better coordinate UNEP and IPCC work and to strengthen information and outreach activities for disseminating IPCC findings more widely and in a targeted manner.

Restoring the ozone layer

Although the 1987 Montreal Protocol on Substances that Deplete the Ozone Layer *(page 5)* has been a success, the battle to restore the shield that protects the Earth from harmful ultraviolet radiation continues. UNEP is spearheading efforts worldwide to ensure that current commitments to protect the ozone layer are met and new threats are tackled.

UNEP helps developing countries and countries with economies in transition meet their obligations under the Montreal Protocol. Funded primarily by the Protocol's Multilateral Fund, with additional funds from the Global Environment Facility, UNEP promotes awareness of ozone issues and understanding of the technological aspects of phasing out ozone depleting substances (ODS). Examples from 2001 include a global video competition on ozone layer protection, three issues of the *OzonAction* newsletter, a CD-ROM *Industry Initiatives: the Montreal Protocol at Work*, which provides examples of companies that have successfully made the transition away from ODS-reliant technologies, and a series of publications supporting technological best practices for protecting the ozone layer. UNEP also provides an information clearinghouse, and training and regional networking services to help build capacity in National Ozone Units.

One of the challenges remaining under the Montreal Protocol phasing out methyl bromide, a highly toxic fumigant used in agriculture. It is harmful to humans and a potent ODS, destroying 60 times more ozone than chlorine from chlorofluorocarbons (CFC)s. In 1997, the Parties to the Montreal Protocol agreed to a global methyl bromide phase-out schedule. UNEP has several initiatives to support that schedule. In July 2001, UNEP, in collaboration with the United Nations Industrial Development Organisation, launched a web site *(www.uneptie.org/ozonaction/unido-harvest)* to disseminate the results of 58 projects in 36 developing countries dedicated to phasing out methyl bromide. UNEP also produced a number of publications, including the *Sourcebook of Technologies for Protecting the Ozone Layer: Alternatives to Methyl Bromide,* ran specialised e-mail forums, produced *Regular Updates on Methyl Bromide Activities* (RUMBA) and organised regional workshops.

Halons, man-made brominated hydrocarbons used for extinguishing fires, are another UNEP focus. Developed countries phased out halons in 1994; developing countries must freeze production and consumption in 2002, with a full phase-out by 2010. As part of the overall phase-out strategy, the Montreal Protocol urges countries to recover, recycle and reclaim halons to meet current needs. UNEP launched a business-to-business web portal *(www.halontrader.org)* in 2001 to facilitate the international exchange of banked halons and reduce the use of newly-produced halons. UNEP also published two documents in its *Avoiding Dependency on Halons* Series: *Handbook of Good Practices in the Halon Sector* and *Eliminating Dependency on Halons: Case Studies*.

To help countries curb illegal trading activities in ODS, UNEP provided a number of services in 2001, including:

- Developing and implementing national training programmes for customs officers on the functioning and enforcement of national import/export licensing systems for ODS and how to prevent illegal trade in ODS.
- Initiating discussions on a unified approach to training customs officers under the various Multilateral Environmental Agreements with trade implications.
- Developing a *Training Manual for Customs Officers* to provide guidance on the implementing trade controls on ODS and products containing ODS.
- Producing *Illegal trade in ODS: Is there a hole in the Montreal Protocol?*-a special supplement to the *OzonAction* newsletter to raise awareness about the problem of illegal trade in ODS and stimulate action to combat trafficking.

For more information on UNEP work to restore the ozone layer visit *www.uneptie.org/ozonaction/.* The web site of the Montreal Protocol secretariat is at *www.unep.org/ozone/.*

Chemicals are essential to sustainable development. There are between 70,000 and 100,000 chemicals on the world market;1,500 new chemicals are being introduced each year. Chemicals can be used cost-effectively in ways that do not harm human health and the environment, yet it is clear that many environmental and human health problems stem from the current and past use of certain chemicals and their dispersal to water, land and air. Human exposure and environmental pollution can occur throughout a chemical's lifecycle, from initial production to ultimate disposal. Chemicals must therefore be manufactured, processed, transported, distributed, used, stored and disposed of in ways that protect human health and the environment. UNEP promotes the sound management of chemicals by providing countries with access to information on toxic chemicals, helping build their capacity to produce, use and dispose of chemicals safely, and supporting global agreements and actions that reduce or eliminate chemical risks. To achieve these goals UNEP works with governments, intergovernmental and nongovernmental organisations, academia and the private sector.

Some of the most hazardous chemicals are those known as persistent organic pollutants (POPs). Once released, these industrial chemicals and pesticides bioaccumulate through the food chain, posing extreme risks to human health and the environment. Among the most significant UNEP achievements in 2001 was the adoption by 127 countries of the legally binding Stockholm Convention on POPs. The Convention seeks to eliminate or restrict the production of an initial list of 12 POPs. As well as guiding the safe disposal and phase-out of these POPs, the convention provides for adding other POPs as necessary. To assist developing countries and countries with economies in transition comply with their obligations under the treaty, governments have established an interim financial mechanism, with the Global Environment Facility (GEF) as its main entity. A UNEP/GEF pilot project, Development of National Implementation Plans for the Management of POPs, will work with 12 countries to strengthen their capacity and help them to meet their obligations under the Convention. The project will develop widely applicable guidelines and facilitate the sharing of experience. Already, UNEP is helping over 25 additional countries to prepare proposals for building their national capacity. At the same time UNEP/GEF is promoting awareness of the Convention's objectives, and the financial assistance available for its early implementation, through a series of subregional workshops.

Global mercury assessment

At its Governing Council meeting in February 2001, UNEP was asked to undertake a global assessment of mercury and its compounds, in cooperation with other members of the Inter-Organisation Programme for the Sound Management of Chemicals. The findings will be presented to the next full meeting of the Governing Council in 2003.

The human nervous system is very sensitive to all forms of mercury. High exposure to mercury can harm unborn children and cause permanent brain and kidney damage. Mercury is widespread and persistent in the environment, coming from both man-made and natural sources. It can be released into the environment through natural weathering of rocks containing mercury ore or through human activities like mining and waste incineration. A number of common products contain mercury, including dental amalgam, fluorescent lamps, clinical thermometers, batteries, antiseptic and antibacterial ointments, and skin-lightening creams. One of the most important non-occupational sources of exposure to mercury is dietary intake through food and water; it is a major problem in some populations, especially those who consume large amounts of fish.

While many governments have implemented national measures to reduce the risks of mercury emissions to air, water and soil, some governments are now calling for global action to reduce and control mercury releases because studies have shown that mercury cycles globally. The UNEP assessment will provide a better understanding of the adverse effects of mercury and its compounds on people and the environment, and give governments a better basis for deciding if international action is called for.

Information on all aspects of mercury was assembled during 2001. UNEP will draft an initial assessment report for dissemination and review by an open-ended working group in early 2002. The final assessment will be distributed in late 2002, in time for consideration by the twenty-second UNEP Governing Council in February 2003. For more information on the Global Mercury Assessment visit the UNEP Chemicals web site: *www.chem.unep.ch/mercury.*

In order to focus on the most pressing chemical issues, UNEP is implementing a global assessment of persistent toxic substances. This will provide a comprehensive, regionally based assessment of the damage and threats posed by persistent toxic substances, and provide a basis upon which to evaluate and agree priorities on chemical-related environmental issues at the regional level. In addition to developing capacity, strategy and awareness, UNEP/GEF is developing a series of action-oriented regional projects, initially in Central America and Africa, to reduce the use of organic pesticides in agriculture and malaria vector control. The projects will demonstrate, at country level, alternative pest and land management strategies, and strengthen existing malaria vector control programmes.

As well as providing the secretariat for the Stockholm Convention on POPs, UNEP also hosts the Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal and, jointly with the United Nations Food and Agriculture Organisation, the Rotterdam Convention on the Prior Informed Consent Procedure for Certain Hazardous Chemicals and Pesticides in International Trade. In June, experts met in Geneva under the auspices of the Basel Convention to finalise guidelines for the environmentally safe dismantling of obsolete ships. Although ships played a role in inspiring the international community to adopt the Basel Convention in 1989—as the vehicles for highly publicised cargoes of hazardous wastes sent from industrialised countries for dumping in developing and East European countries—it is only in the last several years that the toxic materials they themselves are made of have become a priority issue. The decommissioning of a large vessel may involve the removal of many tons of hazardous wastes, including POPs, heavy metals, asbestos and oil. Dismantling can also result in the release of dioxin and sulphur fumes. Workers, local communities, coastal and ocean biodiversity, groundwater and air are all at risk. The guidelines, being developed by the Basel Convention's Technical Working Group for approval in 2002, seek to minimise or eliminate these risks by introducing universally applicable principles for the environmentally sound management of ship dismantling.

During 2001 UNEP organised over 30 regional and subregional workshops to build capacity for the sound management of chemicals *(www.chem.unep.ch/)*. Complementary to that process UNEP also expanded its programme of chemicals assessment, including developing a Global Mercury Assessment. To further assist countries to soundly manage chemicals and meet their obligations under the various chemical-related conventions, UNEP provided access in 2001 to a wide variety of publications, databases and other information and information management tools, including maintaining a global network of 430 government-designated focal points and operating a clearinghouse for information on UNEP chemical projects and conventions.

The availability and quality of fresh water is rapidly becoming one of the most critical environmental issues of the twenty-first century. By 2025 countries considered water stressed will host two-thirds of the world's population. Across the globe, groundwater is being depleted by the demands of megacities and agriculture, while fertiliser run-off and chemical pollution are threatening water quality and public health. In the developing world over 80 per cent of all diseases are attributable to unsafe water and poor sanitation; often rivers downstream from large cities are little more than open sewers.

Helping the world address its water needs is a UNEP priority. There is no doubt that fresh water is a sensitive subject. Watershed boundaries do not reflect socio-political boundaries. Nearly two-thirds of the world's major rivers are shared by several countries. While the transboundary nature of freshwater resources, including rivers, lakes and underground aquifers, provides potential for conflict, it also presents an opportunity for nations to work together to manage those resources for the benefit of all. This concept is central to the UNEP Water Policy and Strategy which was adopted by the twenty-first UNEP Governing Council.

The Governing Council also decided that UNEP should prioritise the identification of expertise and knowledge worldwide relating to the environmental aspects of water quality and facilitate the transfer of that knowledge. It also asked UNEP to enhance the transfer of environmentally sound technologies for water management. The lead for this was given to the UNEP International Environmental Technology Centre *(www.unep.or.jp/),* which focuses on freshwater and urban issues.

W Ehrhart / UNEP

The confluence of freshwater and urban issues is also reflected in a UNEP partnership with the United Nations Centre for Human Settlements (Habitat). The UNEP-Habitat Managing Water for African Cities programme is working to tackle the urban water crisis in African cities through efficient water demand management, capacity-building and information exchange on best practices. The United Nations Foundation-supported programme *(www.un-urbanwater.net/)* is a product of the United Nations System-wide Initiative on Africa (UNSIA).

As co-chair of the UNSIA Water Cluster, UNEP supported the establishment of the African Water Forum (AWF), which was launched in October 2001. AWF aims to establish sustainable water management in Africa and enable policy-makers to define a long-term view of the sustainable use of Africa's water resources. UNEP also supported African governmental preparations for the International Conference on Freshwater, in Bonn, Germany, in December 2001, where African ministers called for sufficient and safe water to be put at the centre of the debate at WSSD. The African ministers' statement calls for a renewed effort by the developed world to meet development assistance targets to help Africa tackle its water problems.

Africa has over 50 major international water basins, yet procedures for avoiding or resolving disputes over water are largely lacking. UNEP is developing several projects within the Global Environment Facility (GEF) that promote an integrated catchment approach to managing shared water resources in the Volta River Basin, the shared catchments of Niger and Nigeria, and in Guinea's Fouta Djallon Highlands, the source area for 70 per cent of the waters of the major shared rivers in West Africa, including the Niger, Senegal, Gambia, Kaba, Kolenté, and Koliba. The foundation of the UNEP/GEF International Waters Portfolio lies in linking environmental issues and problems with their societal and economic causes, and in developing action-oriented programmes that address these. UNEP/GEF is supporting the development and implementation of integrated approaches to catchment and coastal zone management including Strategic Action Programmes for river basins shared by Argentina and Bolivia and Costa Rica and Nicaragua. In Brazil, UNEP/GEF is supporting Integrated Management of Land Based Activities in the Sao Francisco Basin and an Integrated Watershed Management programme for the Pantanal and Upper Paraguay River Basin.

The issue of transboundary water resources is a problem the world over. Poor watershed management, ill-conceived dam projects and urban and industrial pollution have profound effects on everybody and everything downstream. UNEP is recommending a water catchment approach to freshwater management. To facilitate that approach UNEP is involved in a number of assessments, including the Global International Waters Assessment *(page 27).* Another UNEP water-related assessment is its 2001 publication *The Mesopotamian Marshlands: Demise of an Ecosystem.* One of a series of technical assessment reports, the publication details how 90 per cent of the Mesopotamian marshlands have been lost, mainly due to drainage and damming. Using satellite images provided by NASA, UNEP has exposed a previously unreported

ecological disaster comparable to the drying up of the Aral Sea and the deforestation of the Amazon. In collaboration with local organisations, UNEP is conducting an assessment of the Tigris-Euphrates river basin to help demonstrate how improvements can be made, and is urging Iraq, Syria and Turkey, the countries responsible for the rivers that feed the marshlands, to agree to a recovery plan.

UNEP is also working with the Chinese government to help reduce the risk of devastating floods on the Yangtze River. In 1998, floods on the Yangtze swept away or damaged over 12 million homes, killed 3,656 people and caused the relocation of 14 million more. A new scheme, the brainchild of UNEP and Chinese scientists, plans to restore thousands of lost lakes, drainage systems, forests and grasslands to help reduce siltation which has been identified as a major cause of the flooding. In cooperation with the China State Environmental Protection Agency, UNEP has established a Joint Centre for an Environmental Information Network to help raise environmental awareness throughout China and contribute to environmental assessments like GEO and the United Nations Millennium Ecosystem Assessment. The centre will support the development of Internet databases like UNEP.net and act as the data centre for the UNEP Northwest Pacific Regional Seas Programme.

The Yangtze River has also come under the environmental spotlight in recent years because of the proposed Three Gorges dam project. World opinion on major dam projects is mixed, and often polarised. To resolve some of the issues surrounding dams the World Commission on Dams (WCD) was established in 1998. In 2000, the WCD produced its final report *Dams and Development: A New Framework for Decision-making*, after which it disbanded. To facilitate the follow-up of the WCD recommendations, UNEP was requested by WCD stakeholders to host a successor institution. In 2001, UNEP initiated negotiations with the government of South Africa for a UNEP Dams and Development Unit to be based in Cape Town.

The Nairobi River Basin Project

UNEP is based in Kenya's capital city, Nairobi. In line with the maxim 'think globally, act locally' UNEP is involved in a number of initiatives to improve the local environment. Recently UNEP assisted the Kenyan government and local NGOs to survey the country's forests, including supporting the production of a survey of Mount Kenya's forests. UNEP, through its Regional Office for Africa, is also spearheading a project to clean up Nairobi's rivers.

February 2001 saw the launch of the second phase of the UNEP Nairobi River Basin Project. The project aims to restore Nairobi's river system as a source of clean water and to ensure a healthy environment for Nairobi residents. As a result of rapid population growth, urbanisation and industrialisation, enormous pressure has been put on Nairobi's rivers. Industrial effluents, raw sewage and waste from human settlements alongside the rivers have polluted the waters, causing health hazards to communities and stress on the aquatic ecosystem.

An initial pollution assessment has been completed. Phase II of the project focuses on a section of river leading into the Nairobi Dam, which borders Kibera, an inner city slum, and on the dam itself which is choked with water hyacinth. The aim is to address the pollution problem and educate the community. Six project components are being implemented to show the value of proper sanitation and waste management practices, demonstrate the utility of wetlands in improving the quality of water systems, and promote community involvement in safeguarding and monitoring the river basin.

Funding for Phase II has been secured from donors including the GEF Small Grants Programme and the Belgian and French governments. The third and final phase of the Nairobi River Basin Project will begin in 2003. Replicating successful strategies identified through the demonstration and pilot projects of Phase II on a larger scale, this phase will cover the entire river basin area. It is hoped that it will inspire similar projects throughout Africa and elsewhere.

More information on the UNEP Nairobi River Basin Project is available at *www.unep.org/nairobi_river/* or from the UNEP Regional Office for Africa *(page 48)*.

Protecting oceans, seas and coastal areas is a complex problem demanding a multi-sectoral integrated approach. UNEP work on protecting the marine environment reflects that approach, specifically with its support to regional seas conventions and action plans and its implementation of the Global Programme of Action for the Protection of the Marine Environment from Land-based Activities (GPA). Over the past three years, UNEP has revitalised its Regional Seas Programme. Launched in 1974, the UNEP Regional Seas Programme has helped establish over 13 regional seas conventions and action plans. The fourth Global Meeting of Regional Seas Conventions and Action Plans took place in Montreal, Canada, in November 2001. It focused on initiating dialogue between regional seas programmes and the private sector, specifically the shipping, oil and chemicals industries. The meeting agreed to revise the UNEP publication *Regional Seas: a Survival Strategy for our Oceans and Coasts* as an input to WSSD, focusing on the role of regional seas programmes in the protection and sustainable use of marine and coastal resources and on identifying concrete global and regional priorities.

One of the motivations for strengthening the UNEP Regional Seas Programme is to support the implementation of the GPA. Launched in 1995, the GPA is forging new forms of collaboration among governments, organisations and institutions, major groups and the business community for the protection of the marine environment from land-based activities *(see www.gpa.unep.org/)*. As part of preparations for WSSD, UNEP convened the first intergovernmental review of the GPA in Montreal in November 2001. The meeting adopted the Montreal Declaration, which provides a strategic direction for the further implementation of the GPA.

UNEP is supporting practical action to protect the marine environment through the Global Environment Facility (GEF). A project for the South China Sea and Gulf of Thailand that commences in 2002 will focus on identifying the root causes of environmental degradation and enhancing the capacity of participating governments to integrate environmental considerations into national development planning. In Africa, a UNEP/GEF project, Development and Protection of the Coastal and Marine Environment in sub-Saharan Africa, is designing a prioritised programme of regional interventions by identifying degraded and threatened sites of regional and global significance and determining the causes, or threats, of degradation, and the scale of impact.

The impact of land-based activities is transmitted to the marine environment through rivers. UNEP has established a number of Integrated Coastal Area and River Basin Management (ICARM) demonstration projects in Senegal, Croatia, Bosnia and Herzegovina, Vietnam, the Philippines, Indonesia and Thailand. These projects have provided practical knowledge of ICARM and what technical assistance is available. In 2001 an initial study on interlinkages in the Senegal Delta was conducted.

Among the coastal habitats most vulnerable to harm from land-based activities are coral reefs. To help protect the worlds' reefs, UNEP and the World Fish Centre, supported by the United Nations Foundation, have developed the International Coral Reef Action Network (ICRAN). The project addresses the state of declining coral reefs by facilitating the implementation of the priorities identified by the International Coral Reef Initiative. ICRAN has three major components—assessment, management and communications—and supports coral reef management in four regional seas programmes: the wider Caribbean, East Africa, East Asia and the South Pacific. After successful start-up and bridging phases, the four-year ICRAN Action Phase was launched in June 2001 *(see www.icran.org/)*.

The importance of coral reefs is also highlighted in a new UNEP publication *The World Atlas of Coral Reefs*. The 428-page atlas contains information on the distribution, diversity and status of coral reefs worldwide. Although widely distributed, coral reefs occupy just 0.1 per cent of the oceans, and they are in serious peril. The atlas warns that global warming, irresponsible tourism, over-fishing—including using poisons and explosives—sedimentation, and pollution by sewage and agricultural fertilisers are proving a

deadly cocktail for the world's corals. *The World Atlas of Coral Reefs* was prepared by the UNEP World Conservation Monitoring Centre *(www.unep-wcmc.org/),* and is the most detailed assessment of the world's coral reefs to date.

October 2001 saw the first General Assembly of the Global International Waters Assessment (GIWA). GIWA is producing a comprehensive and integrated global assessment of the ecological status of, and causes of environmental problems in, 66 marine and freshwater international water areas. Led by UNEP, GIWA is funded by GEF and other donors, including the National Oceanic and Atmospheric Administration and the governments of Finland and Sweden. The first GIWA General Assembly focused on the work in the GIWA subregions and on how to further improve GIWA methodology.

One of the presentations to the GIWA General Assembly highlighted the decline of the Black Sea due to over-fishing, pollution and alien species. Alerted by the GIWA assessment, the three GEF partners—UNEP, the World Bank and the United Nations Development Programme—have joined with the European Union in the Black Sea Strategic Partnership. One of the scheme's objectives will be to develop a nutrient protocol to the Black Sea Convention to reduce the levels of phosphorus and nitrogen entering the sea. The GIWA web site *www.giwa.net/* contains comprehensive links to regional action plans and programmes related to water issues, as well as links to all the players in the field.

Over-fishing is an issue that repeatedly crops up in discussions of marine resources. Despite regulatory agreements, ocean fisheries remain in decline, with almost 70 per cent either fully exploited or over-fished. UNEP is contributing to the sustainable development of fisheries by helping build consensus on subsidy reform in the fishing sector. UNEP, with the World Trade Organisation, organised a technical workshop in January 2001 for governments, international organisations and NGOs to create a better understanding, quantification and classification of the economic, environmental and social effects of subsidies in the fishing sector*(see also page 40)*.

CITES and Caspian Sea caviar

UNEP acted in 2001 to protect the supply of one of the world's best-known foods. Sturgeon from the Caspian Sea produce 90 per cent of the world's caviar, but supply is falling due to a combination of factors including reduced river flow, the destruction of sturgeon spawning sites and illegal trade. Official catch levels are below one-tenth of late-1970s figures, which peaked at around 30,000 tons a year. In recognition of the impending crisis, Parties to the Convention on International Trade in Endangered Species (CITES) placed all species of sturgeon on the Appendix II list in 1997. All caviar exports are under CITES regulations. To obtain the necessary permits countires must show that trade is not detrimental to the species' long-term survival.

However, largely as a result of illegal trade in caviar, which is estimated to be 10 times higher than the official catch, Caspian Sea states were facing further restrictions to the caviar trade. To head off a worldwide ban on caviar trade, UNEP convened an inter-agency meeting in February 2001 to advise and assist the governments of the Caspian Sea states (Azerbaijan, Iran, Kazakhstan, Russia and Turkmenistan) to protect sturgeon resources and meet their obligations under CITES. The meeting drew up a proposal for transmission to the five littoral states, and asked UNEP to take the lead in organising a high-level meeting. That meeting—between UNEP, CITES, the Caspian Environment Programme, the European Union, and Caspian Littoral states—took place in June. Agreement was reached on a 12-month action plan which included halting sturgeon fishing in the Caspian Sea for the rest of the year. Iran was not made subject to the new CITES controls as it has a functioning sturgeon management system in place.

According to the agreement, only caviar in storage from the spring 2001 harvest could be exported. The agreement gave the Caspian states until the end of 2001 to survey their sturgeon stocks, ask Interpol to analyse the illegal sturgeon trade, call on CITES to study the enforcement needs for combating illegal harvest and trade and permit on-site inspections by CITES of their sturgeon management activities. To prevent zero-quotas for 2002 the states also had to agree on a coordinated management plan for their sturgeon resources and set joint export quotas for 2002.

Caviar-producing sturgeon are one of the world's most valuable wildlife resources. It is vital to the people of the Caspian Sea region that they are managed sustainably for the benefit of future generations. UNEP, which hosts the CITES secretariat, is helping the Caspian Sea states build a science-based management system for the long-term conservation and sustainable use of sturgeon. For more information see the eighth edition of the CITES newsletter (December 2001) at *www.cites.org*.

The chapters of Agenda 21 that deal with land issues—integrated management of land resources, deforestation, desertification and sustainable agriculture, plus the sustainable development of human settlements and mountain areas—are interconnected and overlapping. At the same time they embody distinct objectives requiring diverse approaches and implementation strategies. UNEP takes an integrated approach to the planning and management of land resources, incorprating social and economic considerations. In 2001 UNEP worked to harmonise and strengthen its work on land issues. The UNEP review and analysis of sustainable land use, including soil management, pays particular attention to the interlinkages among the various UNEP policy elements that concern land, water, climate, biodiversity, industry, chemicals, technology and legal, economic and other instruments.

The issue of land degradation is global. Drylands occupy one-third of the world's land area. Over 100 countries, 80 of them in the developing world, are affected by land degradation. In 1994, the international community adopted the United Nations Convention to Combat Desertification (UNCCD). UNEP, which is the United Nations task manager on desertification, promotes and supports research on dryland resource systems and on best practices for their sustainable development and management. UNEP support to the UNCCD includes helping develop national, subregional and regional action programmes, improving policy-relevant assessments of dryland degradation, increasing global awareness of dryland and desertification control issues, promoting people-oriented approaches to sustainable land use and natural resource management, and helping prepare projects for Global Environment Facility (GEF) financing. UNEP also helps raise awareness and promote community participation and information exchange on replicable best practices in sustainable land-use and management.

Sustainable cities

Most of today's environmental problems can be traced, directly or indirectly, to urban areas and urban lifestyles. Sustainable urban development is therefore a priority. Over half the world's population lives and works in urban areas, and the numbers are growing. As land degradation increases, it contributes to the flow of environmental refugees to the cities. And as climate change increases, more and more city dwellers are threatened—40 per cent of cities with populations over 500,000 are located on the coast. As cities grow, so do the public health challenges.

The lead United Nations entity in the field of human settlements is the United Nations Centre for Human Settlements (UNCHS/Habitat). Headquartered with UNEP in Kenya's capital, UNCHS works to reduce poverty and promote sustainable development in this rapidly urbanising world. UNCHS shares more than its location with UNEP. The two organisations share a common responsibility for helping address the environmental challenges of urbanisation. Together they are members of the Urban Environment Forum, a global coalition of cities and international support programmes working in the urban environment. UNEP and UNCHS also collaborate on the Sustainable Cities Programme to build capacities in urban environmental planning and management. Currently it operates in 20 main demonstration and 25 replicating cities around the world, including cities in China, Chile, Egypt, Ghana, India, Kenya, Korea, Malawi, Nigeria, the Philippines, Poland, Russia, Senegal, Sri Lanka, Tanzania, Tunisia and Zambia *(www.unchs.org)*. UNEP and UNCHS, within the United Nations System-Wide Initiative on Africa, also share the Managing Water for African Cities programme *(page 24)*.

UNEP is also providing high-quality information for decision-makers to develop sound urban environmental policy. In 2001 the UNEP International Environmental Technology Centre launched a new web site—the Environmental Management Exchange and Resource Alliance for Local Development (EMERALD). EMERALD is an umbrella initiative that brings together existing initiatives and web sites related to urban and local environmental issues. The aim of EMERALD *(www.urban-emerald.net)* is to:

- Develop awareness and educate on issues related to urban environments.
- Assist in policy and programme development.
- Facilitate monitoring and evaluation.

To assess dryland degradation globally, and support mitigation, UNEP is developing a Land Degradation Assessment in Drylands (LADA), for which a project preparation and development facility grant was awarded by the GEF in August 2001. LADA will be executed by the United Nations Food and Agriculture Organisation (FAO). LADA has two aims. First, it will develop and implement strategies, tools and methods to assess and quantify the nature, extent, severity and impacts of land degradation on ecosystems, watersheds and river basins, and carbon storage in drylands at a range of spatial and temporal scales. Second, the project will build national, regional and global assessment capacities to mitigate land degradation and establish sustainable land use and management practices.

While land degradation is a global issue, it is in Africa that it is most critical. Subsistence agriculture and pastoralism form the backbone of Africa's economy. The consequences of land degradation and desertification are food insecurity, famine and widespread mortality. UNEP, together with the World Bank and the United Nations Development Programme (UNDP), has a Special Initiative for Africa on Land and Water, implemented within the framework of the GEF. Involving 48 African countries, the UNEP/GEF portfolio in Africa includes 63 activities, to which the GEF Trust Fund is contributing $42 million. With co-financing from the countries involved and other donors, the total value of these activities is $68 million. UNEP is also co-implementing, with UNDP, GEF projects involving an additional $18 million GEF funding.

Included among UNEP initiatives in Africa, is the Desert Margins Programme (DMP), approved by the GEF Council in December 2001. The DMP involves nine Sahelian, southern and eastern African countries, and financing of $50 million, including $15 million from the GEF. The DMP will be executed by the International Crops Research Institute for the Semi-Arid Tropics (ICRISAT) and national partners. It seeks to arrest land degradation in Africa's desert margins through demonstration and capacity-building activities. The GEF financing will enable the project to address issues of global environmental importance—biodiversity loss, reduced sequestration of carbon, and increased soil erosion and sedimentation—as well as issues of national economic and environmental importance. UNEP is also co-implementing two major projects with UNDP: Biodiversity Conservation through Participatory Rehabilitation of Degraded Lands of Arid and Semi-arid Transboundary Areas of Mauritania and Senegal, and Management Of Indigenous Vegetation for the Rehabilitation of Degraded Rangelands in the Arid and Semi-arid Zones of Botswana, Kenya and Mali.

UNEP work on land degradation also emphasises deforestation. UNEP is the lead agency within the United Nations Inter-agency Task Force on Forests. UNEP is also part of a collaborative partnership within the context of the United Nations Forum on Forests (UNFF) working towards the implementation of the relevant chapters of Agenda 21. In preparation for the second session of the UNFF, which will be held in San Jose, Costa Rica, in March 2002, UNEP has coordinated the preparation of the United Nations Secretary-General's reports on forest issues. These reports will be an important contribution to WSSD.

In 2001 UNEP published *An Assessment of the Status of the World's Remaining Closed Forests (www.na.unep.net/reports)*. The satellite-based survey found that over 80 per cent of the planet's remaining closed forests are in just 15 countries, and that the majority of these forests are relatively free from human pressure. The UNEP assessment suggests that scarce conservation funds should be focused on these countries. UNEP is finalising a Strategy on Forest Assessment and Monitoring that will outline UNEP actions in support of forest conservation, including working with governments, FAO, space agencies and NGOs to develop a permanent forest monitoring system.

Forests are important for biodiversity and as carbon sinks to mitigate climate change. They are also essential for soil preservation. Worldwide, the storage capacity of

The diversity of life on this planet is extraordinary, and largely undiscovered. Yet it is disappearing at an unprecedented rate. Human activities are destroying it, and as the human population grows, the threats increase. With globalisation, even more species of plants and animals are endangered by trade and the damaging introduction of alien species into vulnerable habitats.

At the twenty-first UNEP Governing Council, the UNEP Executive Director highlighted another aspect of globalisation that is largely overlooked but which has potentially immense significance for our future: across the globe indigenous cultures and traditions are disappearing, along with their languages and their knowledge. Generally the cultures most at risk are those of people who live in close harmony with their environment. Their knowledge about medicinal plants could be invaluable in the fight against existing and emerging diseases. Likewise, the food plants and farming methods used by these cultures are an essential buffer against the increasing threat of crop failures as a result of the growing genetic uniformity of the world's major food crops.

As well as promoting and publishing research on these issues, UNEP is working, within the framework of the Global Environment Facility (GEF), to support agriculture-related conservation. An example is the UNEP/GEF global project People, Land Management, and Environmental Change (PLEC). Approaching its conclusion in 2002, PLEC has been working since 1998 with farmers and local communities in West Africa, East Africa, China, Papua New Guinea and Brazil to understand, utilise and disseminate the diversity of traditional small-holder agricultural systems. It aims to harness traditional knowledge to conserve biological diversity and systems of land use, control land degradation and maintain food security and rural livelihoods. A full-size project proposal—Conservation and Sustainable Management of Below-Ground Biodiversity—involving Brazil, Côte d'Ivoire, India, Indonesia, Kenya, Mexico and Uganda was approved by the GEF Council in December 2001. Preparation of a project to support conservation of wild relatives of important crop species involving countries in Eastern and Central Europe, South America, Africa and Asia, was completed in 2001 for submission to the GEF Council in 2002. Another project will support on-farm conservation of agro-biodiversity in Central Asia. UNEP is also working within the framework of the Convention on Biodiversity (CBD) for the detection, control and eradication of invasive alien species. UNEP provides the secretariat for the CBD *(www.biodiv.org)*.

A recent achievement under the CBD was the adoption of the Cartagena Protocol on Biosafety in early 2000. The Cartagena Protocol is intended to provide an international regulatory framework to reconcile the respective needs of trade and environmental protection with respect to the rapidly growing biotechnology industry. Pending its ratification, the Extraordinary Conference of Parties that adopted the protocol established an intergovernmental committee to prepare for COP-6 of the CBD, which will take place in the Netherlands in April 2002. The meeting invited UNEP, along with GEF and other donors, to convene an open-ended expert meeting on capacity-building for the Cartagena Protocol and a workshop on financial support for the implementation of national biosafety frameworks, both of which were held in Cuba, in July 2001. UNEP is facilitating capacity-building to assist the effective implementation of the Cartagena Protocol through a UNEP/GEF global project launched in 2001 for the Development of National Biosafety Frameworks in up to 100 countries. At the same time, countries that participated in an earlier UNEP/GEF project that piloted this work have been developing proposals to implement their National Biosafety Frameworks. Already, such projects have been approved for eight countries and will commence early in 2002.

The CBD is one of several international biodiversity-related agreements. UNEP is working to rationalise how the various biologically-related conventions, agreements and protocols work together. In 2001, UNEP developed a project to look at harmonising the reporting processes of five biological conventions—the Convention on Migratory Species (CMS), CBD, the Convention on International Trade in Endangered Species (CITES), Ramsar (wetlands) and World Heritage. For many countries, the national reporting process for these conventions is an excessive burden, funnelling funds away from conservation work. Often countries have to prepare several reports for different conventions using the same information. UNEP believes that if the 30-plus wildlife-related conventions can be streamlined it would be a blueprint for improving the efficiency of other environmental conventions, such as those covering climate and chemicals. The project's findings will be reported at WSSD. Another approach to streamlining agreements is to relocate them. For instance, the governments of the UK and the Netherlands have moved Eurobats, a European agreement on bats, ASCOBANS, which covers cetaceans in the Baltic and North seas, and the

African and Eurasian Water Birds Agreement to the CMS secretariat in Bonn, Germany.

One CMS achievement in 2001 was an agreement by Southeast Asian and Indian Ocean nations on a comprehensive plan for conserving six key turtle species. Once plentiful throughout the region, many of the six species have become seriously depleted due to over-harvesting, destruction of nests and accidental bycatch in fishing nets. Eight countries signed the turtle memorandum of understanding which came into effect in September 2001. An example of turtle conservation that may be emulated by the countries that signed up to the MOU is the work of a Malaysian husband and wife team who have rescued over 25,000 turtle eggs, and returned tens of thousands of hatchlings to the wild. The pair were awarded with a UNEP Global 500 award on World Environment Day *(page 42)*.

Conservation of a critically endangered terrestrial species also received a boost in 2001 with the first meeting of the CITES Tiger Enforcement Task Force in New Delhi, India, in April. In 1999 a CITES Tiger Missions Technical Team of law enforcement and wildlife experts visited 14 tiger range and consumer states. One of the team's primary recommendations was a task force to help countries tackle the illegal trade in tiger parts and derivatives. The world's tiger population has plummeted from an estimated 100,000 in the late nineteenth century to under 7,000 individuals today, due to hunting and habitat loss. Tiger hunting is now illegal everywhere and all trade in tigers and tiger parts is banned under CITES.

On the other side of the Indian Ocean, UNEP continues to support African nations who are party to the Lusaka Agreement on Cooperative Enforcement Operations Directed at Illegal Trade in Wild Fauna and Flora. At the Agreement's Fourth Governing Council, UNEP was asked to assist with the development and harmonisation of wildlife management laws and regulations, capacity-building and institutional strengthening. UNEP supported two Experts Meetings on compliance and enforcement of MEAs and a stakeholders workshop for law enforcement agencies.

Saving our closest relatives

In May 2001, UNEP launched an initiative to seek political support for great ape conservation. The Great Apes Survival Project (GRASP) will target key areas in the 23 countries in Africa and Southeast Asia where humankind's closest relatives—orang-utans, gorillas, chimpanzees and bonobos—are on the brink of extinction. Ape populations are falling as their habitats shrink. War, human expansion, mining, agriculture, logging, forest fires, hunting for bushmeat and the capture of live specimens for sale threaten the remaining scattered populations.

A major GRASP priority is fund-raising for relevant conservation projects. GRASP has initially identified five potential programmes to support. In some cases projects will include giving rangers and wardens communications equipment and vehicles. In others, wildlife corridors linking fragmented habitats and isolated populations are needed. Educating local people on the value of great apes for ecotourism and for forest protection will also play a key role.

To attract funds and political support, the UNEP Executive Director appointed a team of Special Envoys: Dr. Russ Mittermeier, President of Conservation International and Chair of the IUCN Species Survival Committee; Dr. Jane Goodall, world renowned chimpanzee expert; and Nishida Toshisada, past President of the International Primatological Society. The Envoys will be supported by a small team of experts who will visit each range state to obtain political endorsements for improved protection, strengthened support for conservation and the preparation and adoption of National Great Ape Survival Plans.

GRASP aims to raise a $25 million by 2005. It received a boost in September 2001 when the British government pledged substantial support. The project also received its first corporate sponsor, educational publisher Dorling Kindersley. UNEP partners in GRASP include UNESCO, the wildlife conventions, and several NGOs including Born Free Foundation, Conservation International, Fauna and Flora International and the Worldwide Fund for Nature. In 2002 UNEP will produce two *Earth Report* TV programmes on great ape conservation *(see also www.unep.org/grasp)*.

In the run-up to WSSD, perhaps the most important issue is environmental governance. Turning commitment into action and ensuring adherence to environmental agreements will be the test of whether sustainable development becomes a reality or remains a dream. As the United Nations Secretary-General pointed out in his *Millennium Report*: "The ecological crises we confront have many causes. They include poverty, negligence and greed—and above all, failures of governance."

The first Global Ministerial Environment Forum (GMEF) agreed in its Malmö Declaration that WSSD in 2002 should review the requirements for a greatly strengthened institutional structure for international environmental governance (IEG) based on an assessment of future needs for an institutional architecture that can effectively address wide-ranging environmental threats in a globalising world. To that end, the twenty-first UNEP Governing Council/second GMEF established an Open-ended Intergovernmental Group of Ministers which met four times on 2001. Their final report and recommendations will be discussed at the seventh Special Session of the UNEP Governing Council/third GMEF in Cartagena, in February 2002, before being fed into the final preparations for WSSD.

A number of issues have emerged, including:

- The importance of addressing IEG in the context of sustainable development, and ensuring it takes into account social and economic dimensions and is responsive to the needs and concerns of developing countries.
- The possibility of enhancing the authority and role of the GMEF so it is the cornerstone of a coherent IEG system and can make environmental considerations central to other policy fields. It was mooted that membership of the UNEP GC/GMEF should be universal and that mechanisms should be developed for meaningful civil society participation in the GMEF.
- The view that a new system of IEG should be built on existing architecture and that UNEP—which was confirmed by Agenda 21 as the principal United Nations body in the field of environment—should be strengthened and provided with a stable and predictable financial base.
- The importance of increasing coherence among environmental conventions, perhaps by clustering them at sectoral, functional and regional levels.
- The need to improve compliance and the implementation of multilateral environmental agreements (MEAs), including promoting capacity-building and technology transfer.

International environmental policy can only realise its goals if it is implemented at the national level. UNEP therefore places great emphasis on developing national, as well as regional and global, environmental policy and law and building implementation capacity. UNEP work in this area is guided by the Montevideo Programme for the Development and Periodic Review of Environmental Law, which has just entered its third decade of implementation *(page 12)*. In response to overwhelming training needs expressed by countries at Governing Council sessions, UNEP has been organising biannual global training programmes in environmental law and policy since 1993. The fifth Global Training Programme in Environmental Law and Policy was held over three weeks in November and December, 2001, at UNEP headquarters. Fifty government lawyers and policy makers from developing countries and countries with economies in transition were familiarised with legal and institutional developments in the field of environmental law at the national, regional and global level. The training seeks to promote greater interest in and commitment to using environmental law as an instrument for translating sustainable development policies into actions.

UNEP also continued to work in 2001 to strengthen interlinkages among conventions and other MEAs to promote increased coherence. The ninth Meeting on Coordination of the Secretariats of Environmental Conventions met in Nairobi in February 2001 to promote collaboration and to discuss progress in, and new areas for, UNEP support to those conventions. The representatives of 16 MEAs discussed issues such as compliance and enforcement and the harmonisation of national reporting, customs codes and clearinghouse mechanisms. UNEP also participates in the development of MEAs, and works with individual nations and organisations to help draft legislation and policy. Examples from 2001 include:

- Providing broad-ranging support, including secretariat services, to the African Ministerial Conference on the Environment (AMCEN), and supporting various African nations to implement global environmental conventions.

- Continuing to assist the Association of Southeast Asian Nations (ASEAN) to develop a legal framework for the prevention of transboundary haze pollution.
- Providing technical legal advice at regional forums on the legal and institutional aspects of various MEAs.
- Helping prepare a Draft Framework Convention on Protection of the Environment of the Caspian Sea.
- Helping Chad, Liberia, Mauritania, Niger, Rwanda and Togo in needs assessment, reviewing existing environmental legislation and institutions, and developing framework environmental laws.
- Capacity-building for Asian countries on the environmental dimension of the Global Compact.

Enhancing public participation in decision-making and access to information and justice (Principle 10 of the Rio Declaration) is also central to UNEP work in the legal arena. In 2001, UNEP undertook a study on Public Participation in Decision Making and Access to Justice in different regions of the world. It also published a number of reference works including volume II of the *Compendium of Judicial Decisions on Matters Related to Environment (National Decisions*). Substantial progress has also been made to further develop the Environmental Law Information Service (ECOLEX), a joint project between UNEP, the World Conservation Union (IUCN) and the United Nations Food and Agriculture Organisation. ECOLEX comprises a comprehensive global database on environmental law information. It can be accessed at *www.ecolex.org*.

More detailed information on IEG and UNEP work in the field of international environmental law is available from the UNEP Division of Policy Development and Law and the Division of Environmental Policy Implementation *(page 48),* or from the UNEP web site *www.unep.org*.

Engaging civil society

While government commitment and action is necessary for sustainable development it is clear that for any initiative to work, civil society needs to be involved at all stages. Civil society has already played a huge role in putting the environment onto the international political agenda. NGOs and business organisations are increasingly at the forefront of sustainable development initiatives.

UNEP is committed to enhancing the participation of civil society in setting and implementing the sustainable development agenda. In February 2001, UNEP invited over 100 civil society representatives to a workshop entitled *UNEP Today and Tomorrow.* Their recommendations were noted by the twenty-first UNEP Governing Council, which asked UNEP to further the consultative process between governments and civil society, the private sector and other major groups at national and regional levels to enhance the participation of civil society in the work of UNEP. The Governing Council also requested that a draft strategy on civil society engagement be prepared before the third Global Ministerial Forum in Cartagena, in February 2002, and that strengthening the role of civil society in UNEP work should be on the agenda for the Governing Council's seventh special session.

In May 2001, UNEP organised a meeting on international environmental governance and enhancing the interactions between UNEP and civil society, the recommendations of which will be presented to the UNEP Governing Council in February 2002. The meeting was attended by 56 civil society organisations from around the world, plus representatives of the business community, faith-based organisations, research institutes and several other sectors. UNEP also supported NGO contributions to the preparatory process for WSSD in 2001 through a number regional NGO Forums to review progress on the implementation of Agenda 21.

While it has been accepted that UNEP needs to strengthen its collaboration with civil society, one area where UNEP has developed strong partnerships is with the private sector. In February 2001, UNEP hosted a high-level event in Nairobi, Kenya, on The Global Compact in Practice where 58 participants from 23 countries reviewed a range of international voluntary initiatives, with a particular focus on the mining sector. UNEP also worked throughout 2001 to advance Global Compact principles by facilitating the operation and development of voluntary initiatives in the banking, insurance, tourism, telecommunications, advertising, automotive manufacturing and mining sectors *(pages 38 to 41).* More information on the Global Compact is available at *www.unglobalcompact.org*.

Understanding the environment and the impact human society has on it is central to making wise development decisions. UNEP therefore places priority on providing the world community with improved access to meaningful data and information, and helping increase the capacity of governments to use environmental information for decision-making and planning for sustainable human development. The UNEP flagship assessment project is the GEO programme *(page 35)*. GEO, however, is just part of a complex equation whereby UNEP works with an array of partners in a comprehensive global assessment and information network.

Another major assessment in which UNEP is involved was launched on World Environment Day, June 5, 2001. At the New York launch of the Millennium Ecosystems Assessment (it was also launched simultaneously in Beijing, Havana, London, Tokyo and Turin), the United Nations Secretary-General noted that: "It is designed to bring the world's best science to bear on the pressing choices we face in managing the global environment. It will examine the influence of human activities on the environment, and how, in turn, those changes are affecting our future prospects for health and well-being."

The Millennium Ecosystem Assessment involves United Nations institutions, the private sector and NGOs. This is important because while the trends being identified are global, almost all the decisions that determine the health of ecosystems are local. Implementation of the Millennium Ecosystem Assessment *(www.millenniumassessment.org)* commenced in November 2001; the target date for completion is 2004. So far it has attracted $17 million in funding, including $4 million from the United Nations Foundation and $7 million from the Global Environment Facility (GEF).

UNEP is also implementing five other major assessments co-financed by GEF:

- The Global International Water Assessment (GIWA) *(page 27)*.
- The Assessment of Impact and Adaptation to Climate Change
- The Solar and Wind Energy Resource Assessment (SWERA) *(page 39)*.
- The Regionally Based Assessment of Persistent Toxic Substances.
- The Land Degradation Assessment in Drylands (LADA) *(page 28)*.

A major contribution to the Millennium Ecosystems Assessment was the donation to UNEP by the United States National Aeronautics and Space Administration (NASA) of 16,000 Landsat images of the Earth valued at $20 million. The Landsat satellite was launched in 1972, the year UNEP was established; it has been gathering invaluable data ever since. The images, most of which have never been seen or analysed by the scientific community, give a full picture of Earth in 1990 and 2000. UNEP was able to put these images to immediate and telling use with the production of a report on the degradation of the wetlands of the Tigris/Euphrates delta *(page 25)*. UNEP is also using the Landsat images to produce, in collaboration with the National Geographic Society, an *Atlas of Global Change*, which breaks new ground by publishing a time-series environmental atlas of the planet, tracing the changes that have occurred between 1992 and 2002. The idea is to use satellite data to make global change more visible to world leaders and citizens. The atlas will be published in time for WSSD.

The Landsat images will also be used to produce a Global Land Cover Database. This is one of a number of assessment activities that UNEP is embarking on with collaborators to support sustainable development. Another is a system to address the need for a set of environmental indicators compatible with economic indicators. UNEP is also developing a methodology to assess human vulnerability due to global climate change. The imperative to reduce vulnerability to climate change has increased dramatically over the past decade. In response UNEP is developing a vulnerability index, which will be ready in August 2002, to help policy makers compare and assess the magnitude and nature of their vulnerability. UNEP also published *Policy Series 3: Vulnerability Indices: Climate Change Impacts and Adaptation* in 2001.

GEO-3: assessing the global environment

Early in 2002, UNEP will publish its third GEO report *GEO-3*. This comprehensive, integrated, policy-relevant assessment of the state of the global environment will provide focused and timely information to world leaders and environment ministers at WSSD.

GEO-3 takes a 30-year retrospective, from the 1972 Stockholm Conference to WSSD in 2002, and a 30-year forward-looking perspective on global environmental trends and prospects. It places major emphasis on providing an integrated explanation of trends since 1972 by identifying their root causes and drivers. It also analyses the relationships between policy and environment to show how policy can impact on environment and how the environment can drive policy, and it contains an evaluation of whether the policy responses of the past 30 years will be appropriate for the next 30 years.

For structural and presentational clarity, *GEO-3* uses sectoral areas as the entry points for assessment. However, the cross-cutting, integrative nature of environmental issues is emphasised along with geographical and sectoral interlinkages, and integrated analyses of themes and policy impacts are provided. Description and analysis, while primarily targeted at the global and regional level, also includes subregional differentiation where appropriate.

The analysis focuses on priority issues, and includes assessment of vulnerability, hot spots and emerging issues. The analysis of environmental trends takes into consideration the widest possible range of social, economic, political and cultural drivers and root causes—including demographics, production and consumption, poverty, urbanisation, industrialisation, governance, conflict, globalisation of trade, finance and information. Special focus is placed on the impacts of national, regional and global policies, including multilateral environmental agreements. The assessment takes into consideration not only environmental policy but also the impacts of general and sectoral policies on environmental issues.

GEO-3 has five main chapters:

1. Integrating environment and development: 1972–2002.
2. State of the environment and policy retrospective: 1972–2002.
3. Human vulnerability to environmental change.
4. Outlook 2002–2032.
5. Analysis and action.

The outlook chapter is based on four scenarios using a 2002–2032 timeframe. It contains a forward-looking and integrated analysis linked to the major issues identified in the retrospective section and contrasts conventional and sustainable paths. The initial global-level analysis is extended to regions and subregions, identifying potential areas of vulnerability and hot spots of the future. Forecasted trends in the environment are developed for the next 30 years.

The final chapter of *GEO-3* includes positive policy and action items, linked to the conclusions of the earlier sections and targeted at different categories and levels of decision-makers and actors. It elaborates the conditions and capacities required for successful application of policies and actions.

GEO-3, which will be published in hard copy as well as on the Internet, will be distributed worldwide to policy-makers and world leaders. Hard copies will be available on a commercial basis to other stakeholders, but will be accessible to all citizens free of charge on the Internet.

GEO-3 is one of several critical policy products of the Global Environment Outlook (GEO) Project, which was launched by UNEP in 1995. The project has two components:

1. A global environmental assessment process that is cross-sectoral, participatory and consultative. It incorporates regional views and builds consensus on priority issues and actions through dialogue among policy-makers and scientists at regional and global levels. It also aims to strengthen environmental assessment capacity in the regions through training and 'learning-by-doing'.
2. GEO outputs, in printed and electronic formats, including the GEO Report series. This series makes periodic reviews of the state of the world's environment, and provides guidance for decision-making processes such as the formulation of environmental policies, action planning and resource allocation. Other outputs include technical reports, a web site and *GEO for Youth*. The project also publishes regional and national GEO reports, for example GEO for Latin America and the Caribbean and GEO reports for Peru and Cuba.

UNEP has gathered and synthesised global and regional data and information through its global network of 35 GEO collaborating centres. These centres are playing an increasingly important role in preparing GEO reports. They are now responsible for almost all the regional inputs, combining top-down integrated assessment with bottom-up environmental reporting. A number of associated centres also participate, providing specialised expertise. Working groups provide advice and support to the GEO process, helping to coordinate the work of the collaborating centres to make their outputs as comparable as possible.

Other United Nations entities contribute to the GEO Process through the United Nations system-wide Earthwatch, coordinated by UNEP. In particular, they provide substantive data and information on the many environmentally-related issues that fall under their individual mandates; they also help to review drafts. Regional consultations and other mechanisms to promote dialogue between scientists and policy-makers are an essential element of the GEO process.

The second GEO report—*GEO-2000*—was published in the six United Nations languages: Arabic, Chinese, English, French, Russian and Spanish. About 15,000 copies have been printed in these languages; it is expected that this figure will be surpassed for *GEO-3*.

For further information on GEO, contact the UNEP Division of Early Warning and Assessment (DEWA) at: e-mail: *geo@unep.org,* or web site: *www.unep.org.*

The publication reviews existing and emerging concepts of vulnerability and adaptability in order to refine them into a dependable tool for policy makers to prioritise preventive actions. It differentiates between three different aspects of vulnerability: present criticality; adaptive capacity and climate change hazard. The aim is to facilitate cost-effective policy decisions in a variety of countries and regions likely to experience the adverse effects of climate change.

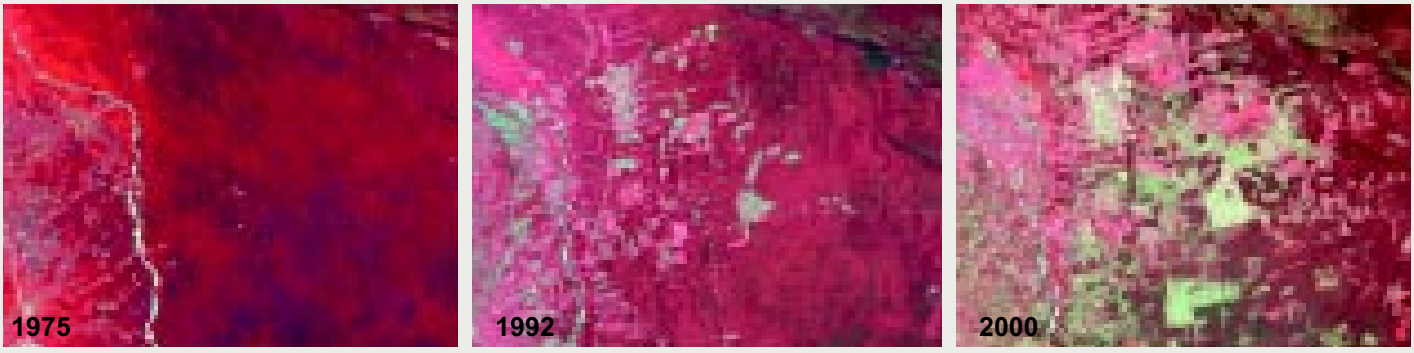
The region most likely to be hardest hit by climate change is Africa. As part of its overall support for Africa's sustainable development, UNEP is implementing an AMCEN-initiated project on the environmental outlook for Africa. Among the many outputs of this project, which covers capacity-building at national and regional levels in integrated environmental assessment reporting, policy analysis and scenario development, is a report, to be published in 2002. The *Africa Environment Outlook* will be the first comprehensive integrated report on the state of the environment for the region. The report analyses environmental status and trends in Africa, human vulnerability due to environmental change, and the links to policy. It will also provide a forward-looking scenario-based analysis for Africa, and alternative policy options for the future.

Another new UNEP assessment is the GLOBIO project *(www.globio.info)*. The Global Methodology for Mapping Human Impacts on the Biosphere is in its infancy, but the first result of the project, a report on human impacts in the Arctic, was sobering. Released in June 2001, the GLOBIO pilot study revealed that resource extraction in the Arctic threatens to affect up to 80 per cent of the region by 2050, with potentially catastrophic consequences for indigenous wildlife and cultures. UNEP plans to extend GLOBIO to cover human impacts across the planet. Preliminary assessments have already been made of the Himalayas and the Amazon.

As assessments and analyses become multi-sectoral there is a growing need for integrated information. This, in turn, requires organisational infrastructures for the acquisition, integration, analysis and dissemination of data and information. Over the last decades a number of environmental assessments have been implemented that have provided useful information for decision-making. However, these comprehensive global assessments have been time consuming and expensive, and were not part of an integrated global environment assessment strategy. UNEP is working with partners to promote harmonisation in the global assessment process. The first meeting of representatives of major global assessments met in Cambridge, UK, in November 2001, to plan a global workshop for 2002 where scientists and users of the assessments can produce a harmonisation strategy.

The UNEP assessment and information strategy depends heavily on partnerships. UNEP regional offices, GEO collaborating centres, United Nations entities and other collaborating institutions work together to weave a web of assessment and information services. Integral to UNEP work is the 15-centre network that comprises the Global Resource Information Database (GRID). One long-standing UNEP partner, Norway's GRID-Arendal *(www.grida.no)*, became a full UNEP centre in 2001. Its importance to UNEP work, especially its Arctic assessments which elucidate such issues as climate change and the threat

UNEP places priority on improving world access to meaningful data and information, and helping increase the capacity of governments to use environmental information for decision-making and planning for sustainable human development. This time-series satellite imagery shows the expnasion of the city of Santa Cruz, Bolivia, over 25 years.



from persistent organic pollutants, has long been recognised. Since 1995, GRID-Arendal has been responsible for the part of the global UNEP Environment and Natural Resources Information Network (ENRIN) that deals with Central and Eastern European nations and the newly independent states of the former Soviet Union. In 2001, GRID-Arendal was given overall management responsibility for the new UNEP global information web portal UNEP.net *(page 37)*.

One of the functions of assessment is to anticipate and mitigate the effects of natural and man-made environmental disasters. Outputs in this field in 2001 include the *Strategic Framework on Emergency Prevention, Preparedness, Assessment, Mitigation and Response*, which provides the basis for UNEP work on the environmental aspects of disaster management. In 2001 UNEP helped the Kenyan government to analyse the impacts of and responses to that country's devastating drought, and it consulted with Chinese officials on a vulnerability assessment for the Yangtze river basin *(page 25)*. Over the past three years, UNEP has also been working to assess the environmental damage of the wars in the Balkans. Recent emphasis has been on the environmental impact of the military use of depleted uranium. The UNEP report *Depleted Uranium in Kosovo: Post-Conflict Environmental Assessment* was published in 2001. Building on the success of its environmental assessments in the Balkans, UNEP launched a Post-Conflict Assessment Unit, to be based in Geneva, Switzerland. The new unit will have a similar but broader mandate to the UNEP Balkans Unit. An area of immediate concern for the new unit is Afghanistan, which has experienced over 20 years of conflict, and is now trying to rebuild.

UNEP.net

A major part of the assessment process is the preparation of user-friendly information. There are numerous specialised environmental institutions worldwide with a wealth of scientific information that they currently distribute through the World Wide Web and other channels. In recognition of this, UNEP initiated a partnership to bring these specific environmental communities together under one umbrella. The result is UNEP.net, a ground-breaking interactive environmental web portal, launched in February 2001. UNEP.net *(www.unep.net)* is a gateway to a global network of environmental information providers. It offers insights on environmental issues to the global community and the means to exchange ideas, information and data. UNEP.net delivers authoritative environmental information from a broad range of information and data providers committed to making their information freely available to the whole spectrum of users of environmental information.

The UNEP.net portal has impressive capabilities, previously limited to military intelligence agencies. Anyone with access to a computer linked to the Internet can now travel round the Earth and select a country or environmental topic by pointing to a map, choosing from lists or typing in a search word. With UNEP.net anyone can create a map of anywhere in the world and add facts and figures from the vast statistical records associated with each map.

By making scientific facts and data about the Earth's environment easily accessible, UNEP is enhancing the ability of decision-makers to use accurate and up-to-date information for better management of the world's resources. UNEP is also fulfilling part of its mandate as well as supporting Principle 10 of Agenda 21 and the Aarhus Convention on Access to Information, Public Participation in Decision-making and Access to Justice in Environmental Matters, which came into force in November 2001.

A key partner in the development of UNEP.net is the Environmental Systems Research Institute (ESRI), a globally recognised leader in the development of spatial or geographic information system technologies. ESRI *(www.esri.com)* has been instrumental in starting the UNEP.net initiative by contributing technical expertise and global data sets.

UNEP.net is already making an impact. The UNEP.net GRID-Arendal interactive map of greenhouse gas emissions won third prize in the international Geography Network Challenge, in July 2001. Recent UNEP.net developments include the opening of two new portals. The UNEP.net Climate Change Portal provides access to the climate change information used by UNEP and its partners for integrated environment assessments as part of the GEO process, while the Freshwater Portal responds to the fact that the declining state of the world's freshwater resources, in terms of quantity and quality, may prove to be the dominant issue on the environment and development agenda in the coming century.

The profligate consumption of the affluent minority and the poverty of the majority are the two driving forces of environmental degradation. UNEP is working to change consumption and production patterns and promote a more balanced global distribution of resources. UNEP work in this field includes promoting the Life-Cycle Initiative, developing an action plan for environmentally and socially responsible procurement, and working with youth *(page 19)*. To enhance its sustainable consumption programme UNEP has launched an on-line monthly newsletter and discussion platform SC.net *(www.uneptie.org/pc/sustain/home.htm)*.

The most important sustainable consumption issue facing the global community is energy. UNEP has a wide range of activities that promote clean and renewable energy production and sustainable energy consumption, especially in the transport sector *(below)*. A new UNEP report *Natural Selection: Evolving Choices for Renewable Energy Technology and Policy*, estimates that up to $15 trillion will be invested in new power projects over the next two decades. If the majority of this is invested in clean energy technologies the global economy will be more sustainable than under current practices (Members of the UNEP financial services initiative *(page 40)* estimate that climate change alone is costing the global economy over $300 billion a year).

UNEP is working with the Global Environment Facility-funded Investment Advisory Facility (IAF) to help banks in developing countries evaluate loans for renewable energy and energy efficiency projects. To date the IAF has issued 12 grants totalling $450,000 to financial institutions considering clean energy investments. IAF is also linking financing organisations to evolving markets for carbon trading under the Clean Development Mechanism of the Kyoto Protocol. UNEP has also launched the Sustainable Energy Advising Facility to help developing countries reconcile their energy policies with their sustainable development needs, and is working with the International Energy Agency on energy subsidy reform. Workshops were held in 2001 in Bangkok, Thailand, and Santiago, Chile, to improve the understanding of governments, industry and NGOs of the social, economic and environmental effects of energy subsidies.

Sustainable transport strategies

A quarter of the world's energy is used for transport. Motor vehicle transport represents 80 per cent of this energy use and accounts for about 30 per cent of total carbon dioxide emissions. Moreover, local and regional air pollution, congestion in urban areas and land use for road-building are key problems. With growing demand for mobility in developed and developing countries, these problems will get more and more pressing unless immediate action is taken. In response, UNEP is expanding its transport-related activities.

UNEP is setting up a voluntary initiative with the automotive industry. The Mobility Forum will give automotive industry members a platform to share experience of environmental best practices and develop new strategies for sustainable mobility. Over the past decade, the auto industry has recognised its responsibility to include environmental protection in its business activities and has greatly reduced the environmental impacts of its production processes and products. Nevertheless, despite these steady improvements, environmental impacts from transport are still increasing due to more vehicles on the road and more kilometres driven per capita. The challenges of reducing the still-increasing environmental impacts of transport while preserving individual mobility in developed countries and providing access to mobility in developing countries are such that further collaborative efforts are needed.

Against this backdrop, UNEP hosted a First Auto Manufacturers Roundtable in May in Paris, where automotive manufacturers discussed the development of a global auto manufacturer's forum for the environment. There was a consensus that a Mobility Forum could bring added value in specific areas like reliable and comparable sustainability reporting, dialogue with stakeholders, getting ready for the Kyoto Protocol and its mechanisms (emissions trading, joint implementation and the Clean Development Mechanism), and addressing the transport-related environmental problems of mega-cities and developing countries. In the meantime, working groups have been built to:

- Develop sector-specific indicators for sustainability reporting.
- Develop an environmentally-friendly driving behaviour awareness-raising campaign.
- Share and promulgate best practices for sustainable mobility.
- Produce a report for WSSD on the implementation of Agenda 21 by the automotive sector.

UNEP has compiled information on environmental action already undertaken by auto manufacturers *(see www.uneptie.org/energy/act/tp/)*. The information comprises policy and reporting, environmental management, technical development, collaborative initiatives, public relations, non-auto related environmental support and strategies for sustainable mobility.

Further information on sustainable transport, and other energy and cleaner production issues, is available from UNEP DTIE *(page 48) www.uneptie.org.*

UNEP also has several initiatives to promote clean energy *(www.uneptie/energy)*. The African Rural Energy Enterprise Development (AREED) initiative is designed to help entrepreneurs offer affordable energy services to rural customers based on clean, renewable energy from solar, wind, biomass, hydro and geothermal technologies. For instance, fuelwood burning is destroying forests and hastening land degradation across Africa. In Mali, AREED is working with a local entrepreneur to manufacture biomass briquettes from crop wastes such as rice husks and peanut shells. In 2001, the United Nations Foundation pledged $4.2 million for AREED. UNEP has begun a similar programme in northeast Brazil.

UNEP is also pioneering a project to map the solar and wind resources of 13 developing countries. The Solar and Wind Energy Survey Assessment (SWERA) was launched in December 2001 to create a global archive of information and a technical review service that will help investors in renewable energy identify where they can expect a good rate of return.

Clean energy production is just one aspect of the larger cleaner production equation. Highlights of the UNEP cleaner production programme *(www.uneptie.org/pc/cp/home.htm)* in 2001 include the establishment of two new national cleaner production centres (NCPC) in Sri Lanka and the Republic of Korea, bringing the total to 21. Also in South Korea was the sixth annual NCPC Meeting, co-organised with the United Nations Industrial Development Organisation (UNIDO). The meeting provided the basis for developing a web-based Global Alliance of Cleaner Production Centres. In addition, the Carl Duisberg Gesellschaft, UNEP and UNIDO initiated a one-year project to improve NCPC capacity to prepare and deliver training modules on environmental technology assessment and establishing and running a cleaner production centre. Also in 2001, the number of senior signatories to the International Declaration on Cleaner Production rose to over 250.

UNEP places great emphasis on encouraging environmentally responsible financing for industry *(page 40)*. The project Strategies and Mechanisms for Promoting Cleaner Production Investments in Developing Countries, funded by Norway, is building capacity in financial and industrial communities in Guatemala, Nicaragua, Tanzania, Vietnam and Zimbabwe. Several cleaner production investment proposals have been generated in each country. These are now being processed by national funding institutions. Substantial inputs were also made to global conferences and workshops to raise further awareness of the need to link finance and the environment, and a special issue of the *Journal of Cleaner Production* on financing is being produced. Other cleaner production publications include: *Cleaner Production: a Guide to Sources of Information, Fourth Edition* (with CD-ROM insert), status reports on cleaner production in the Asia-Pacific and Latin America and the Caribbean regions, *Cleaner Production* newsletters, and an update of the *International Cleaner Production Information Clearinghouse*.

Cleaner production also means safer production. Man-made disasters have dominated the international headlines too often in recent years. The UNEP Awareness and Preparedness for Emergencies at Local Level (APELL) process helps people prevent, prepare and respond appropriately to accidents and emergencies. In 2001 APELL expanded its networks with institutions and industry. The Second Informal Consultative Group Meeting on APELL met in Paris to review past activities and discuss the future work programme. New partnerships were made with the Asian Disaster Preparedness Centre, the International Strategy for Disaster Reduction and the Economic Commission for Europe, and links with agencies dealing with chemical accident prevention were strengthened. The first Regional APELL Network Meeting for Latin America was held in Mexico, and assistance was given to the National Safety Council in India to establish an APELL Centre in Mumbai.

Work on accident prevention and risk reduction in the mining sector included the preparation of an international industry code for cyanide management, a technical report *APELL for Mining*, and a review of mine accidents *Tailings Dams: Lessons Learned from Practical Experience* was co-published with the International Commission on Large Dams. The International Fertiliser Industry Association also agreed to work with UNEP to develop *APELL in the Fertiliser Industry*. Full details of UNEP work on the APELL process are at *www.uneptie.org/pc/apell/*.

A major thrust of UNEP work is to integrate environmental considerations into trade and economic decision-making and to educate governments, civil society and the private sector about the relationship between sustainable development and the globalisation of trade and finance. Significant progress was made in this area in November 2001 with the acceptance by trade ministers from 140 countries at the World Trade Organisation (WTO) talks in Doha that the globalisation of trade and the reduction of trade barriers must take into account environmental issues and the development needs of the world's least developed countries (LDCs). The meeting also recognised the importance of helping LDCs to access world markets to finance their development. Countries overwhelmed by poverty and debt usually cannot afford to invest in environmentally friendly activities and technologies.

UNEP has a number of initiatives to help developing countries with trade and environment issues. Together with the United Nations Conference on Trade and Development, UNEP has created the Capacity Building Task Force on Trade, Environment and Development (CBTF) to help developing countries achieve national trade, environment and development objectives through research, empirical studies, training and policy dialogue. A first round of seven CBTF projects was launched in 2001. These follow the success of a series of Country Level Projects on trade-related issues. UNEP Country Projects on Environmental Impacts of Trade Liberalisation helped national teams in six developing countries to evaluate the impacts of trade liberalisation on specific sectors. Country Projects on the Design and Implementation of Economic Instruments for Environmental Protection helped another three developing countries design economic instruments to address emerging environmental problems. Based on the findings of these Country Projects UNEP established an International Working Group on Economic Instruments to devise guidelines to help countries develop market-based policies and remove market distortions caused by environmentally damaging subsidies to promote more sustainable resource extraction, production and consumption.

So-called 'perverse subsidies' can cause enormous environmental damage by encouraging wasteful consumption and over-exploitation of resources. Examples abound the world over: water subsidies allow farmers to grow water-intensive crops in arid regions; crop supports promote the over-use of fertilisers and pesticides; road transport subsidies boost traffic congestion, urban air pollution and carbon dioxide emissions. Another example: two UNEP reports from 2001 highlight the damage being done to fish stocks and local fishing industries when developing countries (in this case Senegal and Argentina) sell fishing concessions to developed countries who have depleted their own fisheries. The reports will feed into an international technical workshop on fisheries subsidies scheduled for March 2002, just prior to the next WTO Committee on Trade and Environment. UNEP organised several similar workshops in 2001 on specific themes related to environment and trade including:

- Mutual supportiveness between multilateral environmental agreements and the WTO.
- Reform of fishing and energy subsidies.
- Intellectual property rights and the environment.
- Sustainable development and the financial services sector.

The financial services sector can make a huge impact—positive or negative—on sustainable development through its insurance, lending and investment policies. The UNEP Finance Initiative (FI) released a report in 2001 estimating that the cost of climate change could exceed $300 billion a year. As the most important provider of private sector credit, insurance and asset management services, financial institutions can significantly help promote sustainable development through the signals they send to their clients. UNEP FI outreach events in Manila, for the Asia-Pacific region, and New York, for North America, helped broadcast that message, as did the launch of a new FI monthly e-mail bulletin and quarterly newsletter. In preparation for WSSD, UNEP FI has the lead role in preparing the Finance and Insurance Industry Sector report, and it is also working with the World Bank on a report for WSSD on Innovative Financing for Sustainable Development. UNEP also collaborated with the Basel Agency for Sustainable Energy to produce a user-friendly inventory of funding sources of sustainable energy projects.

Another example of UNEP work with the private sector is the Global e-Sustainability Initiative (G*e*SI). G*e*SI was launched on World Environment Day to improve the global environment and support sustainable development by promoting business practices and technologies that save energy, minimise waste and help bridge the 'digital divide'. The initiative was created by information and

communications technology suppliers and operators with the support of UNEP and the International Telecommunications Union.

Demand is growing from within and outside the private sector for companies to demonstrate that they support environmentally and socially responsible business practices. In 1997, UNEP and the Coalition for Environmentally Responsible Economies (CERES) established the Global Reporting Initiative (GRI) to develop globally applicable guidelines for economic, environmental and social performance reporting. The GRI *Sustainability Reporting Guidelines* were published in draft form in 1999 and revised in 2000. During 2001 the GRI's success in establishing a global presence continued to gain momentum. Hundreds of stakeholders and companies reviewed the revised guidelines in preparation for a final version due to be launched in 2002. Meanwhile, work to establish the GRI as a permanent multi-stakeholder, independent international institution is unfolding. It is planned to launch the GRI as a UNEP Collaborating Centre in March 2002. The work of the GRI web site is at *www.globalreporting.org*.

Sustainable tourism

Tourism is one of the world's largest industries, and for many developing countries it is one of the largest income generators. But, the infrastructural demands of tourism—the amount of water consumed, waste generated and energy used—can have severe impacts on the local environment if not properly managed. Responsible tourism is the job of everyone involved—governments, local authorities, the tourist industry and tourists themselves. UNEP is working in a number of ways to promote sustainable tourism *(www.uneptie.org/pc/tourism)*. The UNEP/World Tourism Organisation/UNESCO Tour Operators' Initiative for Sustainable Development, which was launched in 2000, has grown to 25 members, including some of the biggest names in tourism. Through the initiative UNEP is able to influence key decision-makers in tourism development. The Tour Operators Initiative has also signed a Memorandum of Understanding with the Global Reporting Initiative (GRI) to develop Sustainability Reporting Guidelines for tour operators. In accordance with GRI recommendations, a Multi Stakeholder Working Group met twice in 2001.

UNEP has developed policy guidelines, such as *Principles for the Implementation of Sustainable Tourism* which have been widely distributed to governments and local authorities and used as inputs to various multilateral environmental agreements such as the Convention on Biodiversity. Partnerships with the hotel industry have been built, and *Sowing the Seeds of Change*, an environmental training pack with good practice examples for hotels, has been published with the International Hotel and Restaurant Association and the International Association of Hotel Schools. For tourists UNEP has developed, in cooperation with the advertising agency McCann International and the French government, *It's My Choice—Coral or no Coral?,* a package of communication tools in five languages available for free to any organisation or company ready to distribute them.

Visiting fragile ecosystems and cultures without causing harm is central to the concept of ecotourism. The United Nations has declared 2002 the International Year of Ecotourism. In preparation UNEP has facilitated preparatory conferences in Austria (linking ecotourism and mountains), India (for NGOs) and the Seychelles (for Small Island Developing States), leading to the World Ecotourism Summit in Quebec City, Canada, in May 2002. UNEP and the Ecotourism Society have also prepared a new guide *Ecotourism: Principles, Practices and Policies for Sustainability,* highlighting ecotourism's successes and difficulties. UNEP with the UNESCO World Heritage Centre and support from the United Nations Foundation, is also implementing sustainable tourism components in six World Heritage Sites in Mexico, Guatemala, Honduras and Indonesia. A series of publications will be based on the experience gained.

The environmental achievements of the past three decades are ultimately due to one thing: communication. People who are unaware of environmental issues have no incentive to act. UNEP has a responsibility to inspire action by informing the decision-makers of today and tomorrow about the state of the environment. UNEP achieves this in a variety of ways ranging from producing scientific assessments and analyses and facilitating environmental forums, to educating civil society through books, magazines and other media. UNEP also works with its United Nations partners to ensure that the communications needs of the United Nations system are addressed in an integrated and holistic manner. In 2001 UNEP chaired the Joint United Nations Information Committee.

The initial impetus towards local and international environmental action is often provided by the mass media—newspapers and magazines, television and, increasingly, the Internet. During 2001 UNEP revitalised its media work, making its releases more news-oriented and accessible to newspapers, radio and television. The releases, 126 of which were issued in 2001, have also been given greater depth and background to make them useful to science specialists as well as general correspondents. The strategy has led to a marked increase in the breadth of UNEP work covered by the world's media. UNEP media releases, information backgrounders and speeches also feature on the front page of the ever-expanding UNEP web site *www.unep.org*. The site was overhauled in 2001 to harmonise the diverse inputs and make access to the various UNEP programme elements quicker and easier.

Despite the growth of the Internet, television remains the most effective medium of mass communication. In a recent poll in the European Union, four out of five people cited television news and current affairs as their first source of information about the world. Through its longstanding partnership with the independent Television Trust for the Environment (TVE), UNEP reaches millions throughout the world with its flagship *Earth Report* series *(www.oneworld.org/tve/earthreport),* of which 26 30-minute programmes were produced in 2001. The collaboration also produced six video news releases linked to major issues including climate change, coral reefs and fresh water.

In the Latin America and Caribbean region UNEP is creating a strong presence through its *Tierramerica* multimedia project. *Tierramerica* produces a regular newspaper supplement, which is published in Spanish and Portuguese in 16 newspapers in 8 countries in the region, plus a weekly radio programme broadcast by 500 commercial and community radio stations, and a web site. UNEP also publishes an international magazine on the environment, whose contributors regularly include world scientific and political leaders. The four issues of *Our Planet* published in 2001 covered Disasters; Transport and Communications; Poverty, Health and the Environment; and Energy. *Our Planet* is also available online at *www.ourplanet.com* where it receives over a million visits a year.

UNEP has thousands of publications available through its online bookshop *www.earthprint.com*. Recent publications include the *World Atlas of Coral Reefs (page 26)* and *Sustainable Sport Management*. UNEP has been working with the International Olympic Committee (IOC) since 1994 to highlight the synergies between sport, youth and the environment. In October 2001, UNEP in collaboration with the Global Sports Alliance, organised the Global Forum for Sport and Environment in Japan. This was immediately followed by the IOC World Conference on Sport and the Environment which reviewed the contribution of the Olympic movement to WSSD.

One of the major media events of each year is World Environment Day (WED), on June 5. WED in 2001 saw over 100 countries organising activities in support of the environment under the umbrella theme *Connect with the World Wide Web of Life*. The principal WED hosts in 2001 were Havana, Cuba, and Torino, Italy. One of the events in Torino was the launch of a Biennial International Eco-efficiency Fair. In Havana, one of the highlights was an international workshop on Living Modified Organisms under the Cartagena Protocol on Biosafety *(page 30)*. WED also saw the worldwide launch of the United Nations Millennium Ecosystems Assessment *(page 34)*.

One of the highlights of WED each year is the presentation of the UNEP Global 500 awards. The annual Global 500 Roll of Honour recognises individuals and organisations for their outstanding contributions to the protection of the environment. Past winners include French marine explorer Jacques Cousteau; Nigerian environmental and human rights activist Ken Saro Wiwa, who was executed for leading the resistance of the Ogoni people to the

pollution of the Niger Delta; Chico Mendes, the Brazilian rubber tapper who died to protect the Amazon rainforest; and Jane Goodall, the renowned primatologist who has devoted her life to the study and conservation of chimpanzees.

The eighteen Global 500 winners in 2001 were:

- Cubasolar, Cuba.
- Dalian Municipal Government, China.
- Environmental Investigation Agency, United Kingdom.
- Dr. Fredrick Gikandi, Kenya.
- Dr. Chan Eng Heng and Liew Hock Chark, Malaysia.
- Dr. Jiro Kondo, Japan.
- Loren Legarda-Leviste, Philippines.
- Sven Olof Lindblad, USA.
- Jung Hee Park, Republic of Korea.
- Prof. Oscar Ravera, Italy.
- Sydney Olympic Organising Committee and Olympic Coordination Committee, Australia.
- Triciclo, Italy.
- Arunee Dejdamrongsukkul, Thailand.
- Evergreen Club, Ghana.
- Jose Marti Pioneer Organisation, Cuba.
- Khohlooa, Matholoana and Likobo Herdboys, Lesotho.
- Jean-Dominic Levesque-Rene, Canada.
- Yayasan Anak Warisan Alam, Malaysia.

Information about these and past winners of the Global 500 Award is available at *www.global500.org* or from the UNEP Division of Communications and Public Information *(page 48)*.

The UNEP Sasakawa Environment Prize

The 2001 UNEP Sasakawa Environment Prize was awarded to Huey D. Johnson, for his pioneering environmental work. He has spearheaded green management plans work in the United States and internationally to save water, reduce energy use and cut pollution. Mr. Johnson, who has worked in the corporate, non-governmental and governmental sectors, was pivotal in the creation of the Trust for Public Land (TPL), a non-profit land acquisition programme founded in 1972 to save open spaces in urban centres. To date, TPL has conserved over 1.3 million acres of land in the United States. Johnson is also the founder of Green Belt Movement International, whose aim is to promote citizen-based tree planting worldwide to encourage people to restore the environment and break the cycle of poverty and environmental degradation.

As Secretary of Natural Resources for California in the early 1980s, Johnson crafted state-wide programmes and polices for the preservation of natural resources such as water, forestry and soil. He also instituted the Investing for Prosperity programme (IFP), a 100-year initiative which channels funds into investments to enhance the long-term productivity of California's natural resources. One of the successes of the IFP programme was the development of cost-effective renewable energy technologies that have since been emulated around the world. A report by the Rand Corporation showed that energy conservation efforts have saved California some $34 billion since the late 1970s.

In 1985, Johnson founded the Resource Renewal Institute (RRI) to promote sustainable development and the better management of natural resources in the United States and internationally. RRI developed the Campaign for a Sustainable Future, which targets policy-makers and opinion leaders, and is designed to mobilise diverse constituencies strong enough to secure momentum for a national green plan. RRI also works with nations outside the United States to catalyse green planning.

The UNEP Sasakawa Prize, which is worth $200,000, was awarded to Mr. Johnson in New York at the United Nations headquarters, in November 2001. At the award ceremony Her Majesty Queen Noor of Jordan delivered the annual Pastrana Borrero Lecture, which was established by UNEP in 1999 in honour of the environmental commitment of the late chairman of the UNEP Sasakawa Prize Selection Committee, and former President of the Republic of Colombia, Misael Pastrana Borrero. Queen Noor's speech emphasised one of Mr. Borrero's main concerns, namely that we never lose sight of our humanity. "Conservation is crucial if our world is to have a future," she said. "But people are our world's most important resource. Ecological preservation must be part of a larger effort to preserve the human species, not just collectively, but each precious individual. Preserving the environment and protecting people need not be conflicting goals, however. Just the opposite—each without the other is impossible…. As President Pastrana believed, peace is living in harmony with each other, and with nature. That is more than a dream—it is a goal we have no choice but to achieve."

The full text of Queen Noor's speech and a biography of Huey Johnson and past winners is available from the UNEP Division of Communication and Public Information *(page 48)* or at *www.unep.org/sasakawa2/.* The UNEP Sasakawa Prize is sponsored by the Nippon Foundation. It is named after Ryoichi Sasakawa, who died in July 1995. Mr. Sasakawa was the founding Chairman of the Nippon Foundation (formerly the Sasakawa Foundation). Mr. Sasakawa contributed to social and public initiatives over three decades both within and outside Japan, one of which was the establishment of the UNEP Sasakawa Environment Prize in 1982.

Environment Fund: contributions (US$) 1999–2001

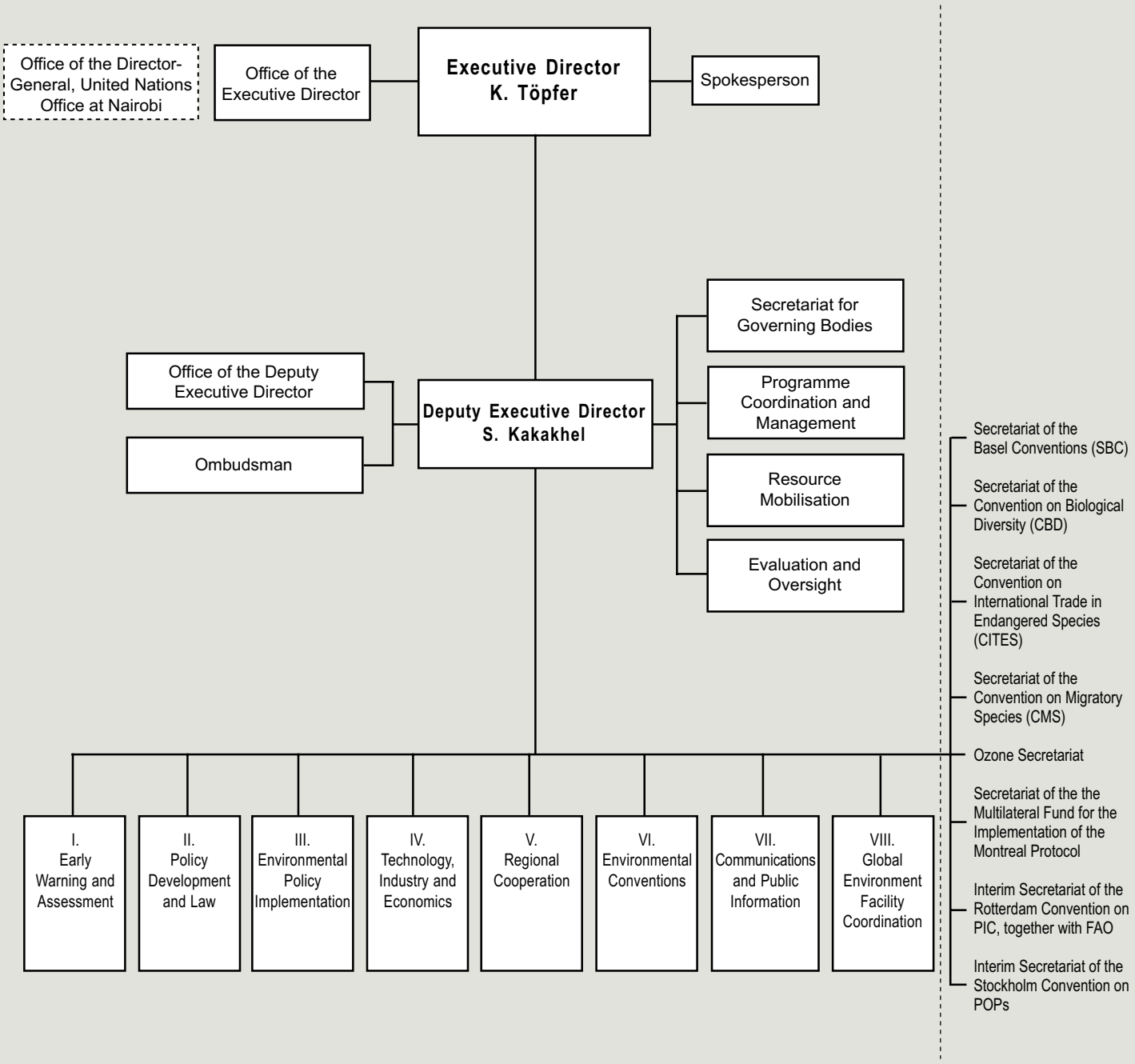
		1999	2000	2001	TOTAL
1	United States	7,235,000	7,235,000	6,500,000	**20,970,000**
2	United Kingdom	6,738,900	6,304,200	5,955,600	**18,998,700**
3	Germany	5,244,652	4,900,752	4,828,884	**14,974,288**
4	Japan	4,845,000	4,545,867	4,545,867	**13,936,734**
5	Netherlands	2,004,694	2,528,065	4,485,436	**9,018,195**
6	Finland	2,965,866	2,547,112	2,520,385	**8,033,363**
7	Switzerland	2,387,811	2,088,236	2,259,866	**6,735,913**
8	Sweden	2,551,345	1,477,054	2,093,079	**6,121,478**
9	Norway	1,923,890	1,777,567	1,712,720	**5,414,177**
10	Denmark	1,963,295	1,617,744	1,758,666	**5,339,705**
11	Italy	547,465	483,922	1,737,170	**2,768,557**
12	France	705,564	822,584	885,000	**2,413,148**
13	Canada	741,139	754,532	711,514	**2,207,185**
14	Spain	620,230	563,013	535,021	**1,718,264**
15	Russia	599,983	350,000	500,000	**1,449,983**
16	Belgium	329,946	504,980	505,000	**1,339,926**
17	Austria	465,033	370,065	298,576	**1,133,674**
18	Australia	320,500	299,400	309,300	**929,200**
19	Kuwait	200,000	220,900	200,000	**620,900**
20	China	180,000	180,000	180,000	**540,000**
	Total	**42,570,313**	**39,570,993**	**42,522,084**	**124,663,390**
	World total	**44,264,502**	**40,866,900**	**44,780,000**	**129,911,402**

All figures are US$. Ranking based on cumulative total

Environment Fund: countries increasing contributions (US$) 2000–2001

	Country	2001	2000	increase
1	Algeria	10,000	-	10,000
2	Andorra	7,100	6,700	400
3	Australia	309,300	299,400	9,900
4	Bahrain	2,750	-	2,750
5	Belarus	11,300	2,900	8,400
6	Bhutan	1,000	-	1,000
7	Brunei	9,980	-	9,980
8	Cambodia	1,500	-	1,500
9	Chile	11,800	-	11,800
10	Croatia	2,000	-	2,000
11	Cyprus	5,851	-	5,851
12	Denmark	1,758,666	1,617,744	140,922
13	Ethiopia	8,322	6,000	2,322
14	Fiji	3,500	-	3,500
15	France	885,000	822,584	62,416
16	Iceland	16,000	-	16,000
17	Iran	30,000	-	30,000
18	Ireland	231,000	107,750	123,250
19	Israel	20,000	10,000	10,000
20	Italy	798,160	483,922	314,238
21	Luxembourg	41,785	23,327	18,458
22	Mauritius	4,616	-	4,616
23	Moldova	1,000	-	1,000
24	Namibia	4,100	-	4,100
25	Netherlands	4,485,436	2,528,065	1,957,371
26	New Zealand	56,265	54,305	1,960
27	Niger	5,000	-	5,000
28	Republic of Korea	180,000	150,000	30,000
29	Republic of Moldova	1,000	-	1,000
30	Russian Federation	500,000	350,000	150,000
31	Sierra Leone	2,500	-	2,500
32	Sweden	2,093,079	1,477,054	616,025
33	Switzerland	2,259,866	2,088,236	171,630
34	Tajikistan	25,625	-	25,625
35	Trinidad & Tobago	10,387	-	10,387
36	Uganda	2,100	2,000	100
37	Vietnam	5,000	3,000	2,000
	Total		**3,732,75**	

UNEP functional structure



Professional posts in UNEP by source of financing

Number of posts

	As at 31.12.00			As at 31.12.01		
	Approved	Occupied	Vacancy %	Approved	Occupied	Vacancy %
Environment Fund						
(a) MASC	15	14	6.6	15	12	20
(b) Projects	170	133	21.7	171	146	14.6
Sub-total - Environment Fund	185	147	20.5	186	158	15
Regular Budget	22	20	9	22	20	9
Trust Fund Projects						
- Conventions	94	68	27.6	95	90	5.2
- GEF Trust Fund	26	22	15.3	36	36	-
- Others	34	34	-	43	39	9.3
Sub-total - Trust Fund Projects	154	124	17.3	174	165	5.2
JPO Agreements (Trust Funds)	32	29	9.3	28	28	-
Professional Officers financed by Governments	10	10	-	7	7	-
Special Account For Support to Trust Funds (SASTF)	14	13	7.1	15	14	6.6
Activities financed from counterpart contributions	3	3	-	7	7	-
TOTAL	**420**	**346**	**17.6**	**439**	**399**	**9.1**

General service posts in UNEP by source of financing

Number of posts

	As at 31.12.00			As at 31.12.01		
	Approved	Occupied	Vacancy %	Approved	Occupied	Vacancy %
Environment Fund						
(a) MASC	23	23	-	23	23	-
(b) Projects	188	178	5.3	188	182	3.2
Sub-total - Environment Fund	211	201	4.7	211	205	2.8
Regular Budget	17	16	5.8	17	16	5.8
Trust Fund Projects						
- Conventions	86	70	18.6	86	77	10.4
- GEF Trust Fund	17	15	11.7	19	19	-
- Others	23	19	17.3	24	22	8.3
Sub-total - Trust Fund Projects	126	104	17.4	129	118	8.5
Special Account For Support to Trust Funds (SASTF)	25	21	16	27	26	3.7
Activities financed from counterpart contributions	0	0	-	7	7	-
TOTAL	**379**	**342**	**9.7**	**391**	**372**	**4.8**

United Nations Environment Programme (UNEP) Headquarters
P.O. Box 30552
Nairobi, Kenya
Telephone: (254 2) 621 234
Telex: 22068, 22173
Telefax: (254 2) 226 886/622 615
E-mail: cpiinfo@unep.org
Web site: www.unep.org

UNEP Office, New York
2 UN Plaza, Room DC2-803
United Nations, New York, NY 10017
United States of America
Telephone: (1 212) 963 8210
Telefax: (1 212) 963 7341
E-mail: info@nyo.unep.org
Web site: www.nyo.unep.org

Division of Regional Cooperation
UNEP Headquarters
P.O. Box 30552
Nairobi, Kenya
Telephone: (254 2) 623 519
Telefax: (254 2) 624 270/623 695
E-mail: cristina.boelcke@unep.org
Web site: www.unep.org

Regional Office for Africa (ROA)
P.O. Box 30552
Nairobi, Kenya
Telephone: (254 2) 624 065
Telefax: (254 2) 624 324
E-mail: sekou.toure@unep.org
Web site: www.unep.org/unep/regoffs/roa

Regional Office for Asia and the Pacific (ROAP)
United Nations Building
Rajdamnern Nok Avenue
Bangkok 10200, Thailand
Telephone: (66 2) 288 1870, 288 1893
Telefax: (66 2) 280 3829
E-mail: andrewsni@un.org
Web site: www.roap.unep.org

Regional Office for Europe (ROE)
15, Chemin des Anémones
1219 Châtelaine, Geneva, Switzerland
Telephone: (41 22) 917 8291/82/76
Telefax: (41 22) 797 3420
E-mail: frits.schlingemann@unep.ch
Web site: www.unep.ch

Regional Office for Latin America and the Caribbean (ROLAC)
Boulevard de los Virreyes No. 155
Col. Lomas Virreyes, AP 10793
11000 Mexico, D.F. Mexico
Telephone: (52 55) 5202 4841/6394
Telefax: (52 55) 5202 0950/5520 7768
E-mail: rsanchez@unep.mx
Web site: www.rolac.unep.mx

Regional Office for North America (RONA)
UNEP, 1707 H St. NW
Washington D.C. 20006
United States of America
Telephone: (1 202) 785 0465
Telefax: (1 202) 785 2096/4871
E-mail: brennan.vandyke@rona.unep.org

Regional Office for West Asia (ROWA)
P.O. Box 10880
Manama, State of Bahrain
Telephone: (973) 826 600
Telefax: (973) 825 110/825 111
E-mail: myunrowa@unep.org.bh
Web site: www.unep.org.bh

Division of Technology, Industry and Economics
Division Office
39-43 Quai André Citroën
75739 Paris Cedex 15, France
Telephone: (33 1) 4437 1450
Telefax: (33 1) 4437 1474
E-mail: unep.tie@unep.fr
Web site: www.uneptie.org

International Environmental Technology Centre (IETC)
2-110 Ryokuchi Koen
Tsurumi-ku
Osaka 538-0036 ,Japan
Telephone: (81) 6-6915-4581
Telefax: (81) 6-6915-0304
E-mail: ietc@unep.or.jp
Web site: www.unep.or.jp

Production and Consumption Branch
39-43 Quai André Citroën
75739 Paris Cedex 15, France
Telephone: (33 1) 4437 1450
Telefax: (33 1) 4437 1474
E-mail: unep.tie@unep.fr, fritz.balkau@unep.fr
Web site: www.uneptie.org/pc/home.htm

Chemicals Branch
International Environment House
11-13, Chemin des Anémones
1219 Châtelaine
Geneva 10, Switzerland
Telephone: (41 22) 917 8111
Telefax: (41 22) 797 3460
E-mail: chemicals@unep.ch
Web site: www.chem.unep.ch/irptc

Energy and OzonAction Branch
39-43 Quai André Citroën
75739 Paris Cedex 15, France
Telephone: (33 1) 4437 1450
Telefax: (33 1) 4437 1474
E-mail: unep.tie@unep.fr
Web site: www.uneptie.org/hp_oa.htm

Economics and Trade Branch
International Environment House
11-13, Chemin des Anémones
1219 Châtelaine
Geneva 10, Switzerland
Telephone: (41 22) 917 8298
Telefax: (41 22) 917 8076
E-mail: etu@unep.ch
Web site: www.unep.ch/etu

UNEP/GRID-Arendal
Longum Park, Service Box 706
N-4808 Arendal, Norway
Telephone: (47) 3703 5650
Telefax: (47) 3703 5050
E-mail: grid@grida.no
Web site: www.grida.no

UNEP World Conservation Monitoring Centre (WCMC)
219 Huntingdon Road
Cambridge CB3 ODL
United Kingdom
Telephone: (44) 1223 277314
Telefax: (44) 1223 277136
E-mail:info@unep-wcmc.org
Web site: www.unep.org/unep/partners/global/wcmc

Global Programme of Action (GPA) Coordination Office
P.O. Box 16227, 2500 BE
The Hague, The Netherlands
Telephone: (31) 70 311 4460/1
Telefax: (31) 70 345 6648
E-mail: v.vanderweerd@unep.nl, gpa@unep.org
Web site: www.gpa.unep.org

Global International Waters Assessment (GIWA)
SE - 391 82 Kalmar, Sweden
Telephone: (46 480) 44 73 53
Telefax: (46 480) 44 73 55
E-mail: info@giwa.net
Web site: www.giwa.net

Secretariat of the Convention on Biological Diversity (CBD)
393 St Jacques Street, Office 300
Montréal, Québec
Canada H2Y 1N9
Telephone: (1 514) 288 2220
Telefax: (1 514) 288 6588
E-mail: secretariat@biodiv.org
Web site: www.biodiv.org

International Coral Reef Initiative (ICRI) Secretariat
Ministère de l'aménagement du territoire et de l'environnement
20, avenue de Ségur
75302 Paris, France
Telephone: (33 1) 421 91775
Telefax: (33 1) 421 91772
E-mail: genevieve.verbrugge@environnement.gouv.fr

Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) Secretariat
International Environment House, 11-13, chemin des Anémones
CH-1219 Châtelaine
Geneva
Switzerland
Telephone: (41 22) 917 8139/40
Telefax: (41 22) 797 3417
E-mail: cites@unep.ch
Web site: www.wcmc.org.uk/cites

The Secretariat of the Multilateral Fund for the Implementation of the Montreal Protocol
1800 McGill College Avenue
27th Floor Montreal
Quebec, Canada H3A 3J6
Telephone: (1 514) 282 1122
Telefax: (1 514) 282 0068
E-mail: secretariat@unmfs.org

The Secretariat of the Vienna Convention and the Montreal Protocol (The Ozone Secretariat)
United Nations Environment Programme
P.O. Box 30552
Nairobi, Kenya
Telephone: (254 2) 623 851
Telefax: (254 2) 623 601/623 913
E-mail: ozoneinfo@unep.org
Web site: www.unep.org/ozone

Secretariat to the Convention on the Conservation of Migratory Species of Wild Animals (CMS)
United Nations Premises in Bonn
Martin-Luther-King-Str. 8
53175 Bonn, Germany
Telephone: (49 228) 815 2401/2
Telefax: (49 228) 815 2449
E-mail: cms@unep.de
Web site: www.wcmc.org.uk/cms

Secretariat of the Rotterdam Convention on the Prior Informed Consent Procedure for Certain Hazardous Chemicals and Pesticides in InternationalTrade
International Environment House
11-13 Chemin des Anémones
CH-1219 Châtelaine
Geneva 10, Switzerland
Telephone: (41 22) 917 8111
Telefax: (41 22) 797 3460
E-mail: pic@unep.ch

Interim Secretariat of the Rotterdam Convention on the Prior Informed Consent Procedure for Certain Hazardous Chemicals and Pesticides in International Trade
Plant Protection Service, Plant Production and Protection Division
Food and Agriculture Organisation of the United Nations (FAO)
Viale delle erme di Caracalla
00100 Rome, Italy
Telephone: (39 06) 5705 3440
Telefax: (39 06) 5705 6347
Email: pic@fao.org

Secretariat of the Stockholm Convention on Persistent Organic Pollutants
International Environment House
11-13, Chemin des Anémones
1219 Châtelaine
Geneva 10, Switzerland
Telephone: (41 22) 917 8111
Telefax: (41 22) 797 3460
E-mail: pops@unep.ch
Web site: www.pops.int

Secretariat of the Basel Convention
International Environment House
11-13 Chemin des Anémones
Building D, 1219 Châtelaine
Geneva, Switzerland
Telephone: (41 22) 917 8218
Telefax: (41 22) 797 3454
E-mail: sbc@unep.ch