

**UNEP 2007
ANNUAL
REPORT**



UNEP

United Nations Environment Programme

UNEP in 2007

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WORLD ENVIRONMENT DAY 5 JUNE 2008



TOWARDS A LOW CARBON ECONOMY



UNEP

UNITED NATIONS ENVIRONMENT PROGRAMME

UNEP Governing Structure

The UNEP Governing Council was established in accordance with UN General Assembly resolution 2997 (XXVII) of 15 December 1975 (Institutional and financial arrangements for international environmental cooperation). The Governing Council reports to the General Assembly through the Economic and Social Council. Its 58 members are elected by the General Assembly for four-year terms, taking into account the principle of equitable regional representation. Full information on the composition, functions and responsibilities of the UNEP Governing Council and the Committee of Permanent Representatives, formally established and strengthened as a subsidiary organ to the Governing Council by decision 19/32 of 4 April 1997, is available at www.unep.org/governingbodies.

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Czech Republic *
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Indonesia *
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Kazakhstan **
Kenya *
Mali **

Mauritius **
Mexico **
Monaco **
Netherlands **
Niger **
Pakistan *
Republic of Korea *
Romania *
Russian Federation *
Saudi Arabia **
Somalia **
South Africa *
Spain **
Thailand *
Tunisia **
Tuvalu **
Uganda *
United States of America *
Uruguay *

* Members whose terms expire on 31 December 2009. ** Members whose terms expire on 31 December 2011.

Message from the United Nations Secretary-General

The sustainable development of human societies depends on viable ecosystems. They keep the climate stable, put food on the table, clothe our backs, provide the medicines we need and protect us from radiation from space.

When we damage ecosystems we harm ourselves. These facts were widely publicized this year in UNEP's GEO-4 state of the environment assessment, and they underpin the work of the UN Environment Programme contained in this annual report.

GEO-4 examines our progress, and our failures, in protecting the global environment since the concept of sustainable development was popularized by the Brundtland Commission in 1987. The report card is not impressive. As a family of nations we have overseen the destruction of many of our planetary life-support systems.

As both GEO-4 and the Millennium Ecosystem Assessment point out, 60 per cent of the world's ecosystem services are being degraded or used unsustainably. The consequences include increased poverty and ill-health for billions of people, and increased potential for conflict among communities and nations.

However, there is also room for optimism. In the past two decades, the international community has cut the production of ozone-depleting chemicals by 95 per cent and created a body of international and national law to address issues ranging from protecting biological diversity to the transport of hazardous waste.

Furthermore, for all its limitations and delays, a climate change treaty is in force and, since the December 2007 climate change meeting in Bali, we are on track for a new greenhouse gas emissions reduction regime by 2012.

Perhaps even more importantly, the words you are reading are comprehensible and meaningful to a growing community of environmentally aware people: presidents, governors, chief executive officers, media chiefs and ordinary citizens from around the world.



Environmental protection is becoming a mainstream concept. To give just one small example: at the United Nations I have instructed that the Capital Master Plan for renovating the UN headquarters in New York follows strict environmental guidelines. I have also asked the chief executives of all UN programmes and specialized agencies to urgently start to move towards carbon neutrality.

The UN Environment Programme is taking a lead in pursuing this agenda. Its climate neutral network, being unveiled at the UNEP Governing Council meeting in February 2008, is just one of a wide range of activities that are inspiring and facilitating a transition to a more climate friendly and resource-efficient society.

UNEP is playing a key role in helping us understand and act on the environmental imperatives that will govern our future social and economic security. I commend the organization's staff and leadership for another year of hard work and considerable achievement, and look forward to continued progress in 2008.

Transition and transformation

By Achim Steiner



Achim Steiner, UNEP Executive Director at the G8 environment ministers and civil society representatives meeting, 15 March 2007, Potsdam, Germany. © Carsten Koall/Getty Images

It would be impossible to begin the annual report without focusing on three new and exciting prospects for transformation that got underway in 2007:

- The transformation of climate change from one among many issues to a challenge that reached the very highest levels of economic and political discourse.
- The transformation of the global economy into a Green Economy, in part as a result of climate change.
- The transformation too of UNEP from an essentially 20th century institution into one able to meet the existing and emerging sustainability challenges of the 21st century.

UNEP hosted its Governing Council in Nairobi in the first week of February under the theme of Globalization and the Environment. It came in the wake of the first of four new reports from the Intergovernmental Panel on Climate Change (IPCC)—the more than 2,000 scientists established and supported by UNEP and the World Meteorological Organisation.

In 2007 these seminal reports agreed that climate change is happening, it is “unequivocal”, and that likely impacts include loss of water supplies as a result of glaciers melting away in as little as 30 years, alongside sea level rise affecting Africa’s infrastructure and millions of people in Bangladesh. But, they also agreed that the costs of combating climate change may nonetheless be as little as a few tenths of one per cent of global GDP annually over 30 years.

In winning the Nobel Peace Prize, along with former US Vice President Al Gore, the IPCC’s work also took the discourse onto a new and elemental level: unchecked, climate change is capable of derailing not only the Millennium Development Goals but also peace and security across the world. UNEP’s post-conflict assessment of the Sudan made the same point. It concluded that climatic changes including dramatic shifts in rainfall have contributed to the crisis in Darfur.

I would like to pay tribute to the way Mr. Ban Ki-Moon, the UN Secretary-General, tirelessly

engaged in providing leadership on the climate change agenda in 2007 and has committed again to make it a top priority in 2008. The Secretary-General's High Level Event in New York in September, in which UNEP played a key part, underlined that global warming is an environmental change phenomenon but one that cuts across all ministries and all sectors of society.

Climate change has also proven to be a gel that can bring people and different interests together in new and also perhaps transformational ways, not least for the UN-system itself. The Chief Executives Board in October, for example agreed to work towards transforming the entire organization and its operations to climate neutrality, supported by another transformation—a revitalized Environmental Management Group. UNEP, for its part, has also established a Sustainable UN (SUN) team to further catalyze this transformation.

TRANSFORMATION AND THE GREEN ECONOMY

In 2007, we saw other signs that a global response to climate change may be emerging and that the theme of the 2007 Governing Council—making the globalized markets more intelligent—may be starting to become manifest on the ground. This is being driven by the science of the IPCC. It is being driven too by the existing policy solutions of the UN Framework Convention on Climate Change and its Kyoto Protocol. And it is driven by the prospects of a deep and decisive climate regime post-2012, the elements of which are encapsulated in the Bali Road Map agreed in Indonesia at the end of the year.

Let me mention a few manifestations of this response. By 2007, 275 financial institutions with assets of \$13 trillion had joined the UNEP and UN Global Compact-facilitated Principles for Responsible Investment. According to UNEP's Sustainable Energy Finance Initiative 2007, capital flowing into the renewable energy sector had reached \$100 billion, up 40 per cent from the year before.

The Renewables Global Status Report 2007 by REN21, whose secretariat is hosted by UNEP, shows that more than 50 countries worldwide have adopted renewable energy targets, including 13 developing countries and many states and

provinces in the US and Canada. A preliminary report by UNEP, the International Labour Organisation and trades unions shows that, at 2.3 million, more people are now employed in renewable energy industries than in oil and gas. Finally, in just one year, presidents, companies, cities and the public planted 1.5 billion trees under the Billion Tree Campaign, a partnership between UNEP and the World Agroforestry Centre under the patronage of Kenyan Nobel laureate Wangari Maathai and His Serene Highness Prince Albert II of Monaco.

UNEP'S TRANSFORMATION

2007 was a year in which UNEP began its evolution towards a more focused, modern and efficient results-based organization. This transformation is being led by the UNEP Senior Management Team, supported by the new Strategic Implementation Team established in March. I am pleased by the results so far, many of which are ahead of the time-table I outlined at the Nairobi Governing Council.

Let me mention just a few:

- A draft Medium-Term Strategy for 2010–2013, focused on six-science based priorities, underpinned by four core elements and drafted through a model, collaborative process with the Committee of Permanent Representatives; the secretariats of the Multilateral Environmental Agreements, business and civil society.
- Concrete action under the Bali Strategic Plan for Technology Support and Capacity Building, including a comprehensive environmental assessment of oil-impacted sites in the Ogoni region of the Niger Delta, launched last November in association with UNDP and the Government of Nigeria.
- A new partnership with the Democratic Republic of Congo which includes capacity building for law and natural resources management at a time of increased international interest in the country's nature-based assets.
- The establishment of a Poverty and Environment Facility to enhance country-level delivery for the UNEP-UNDP Poverty and Environment Initiative, which now has, so far, around \$16 million—or half of the target funding requested from donors for scaling up the initiative.

Introduction by the UNEP Executive Director

- Gender mainstreaming: 35 staff members are now operating at headquarters and in the regional offices to make gender issues a reality. Almost 50 per cent of staff recruited in 2007 to professional posts were women
- The establishment of the first ever UNEP-wide Intranet for in-house information sharing and an increased bandwidth to the outside world.
- An Accountability Framework linked with a set of delegations of authority on programme management, human resources and procurement.
- UNEP has also taken more responsibility and management of its funds and services via the establishment of the Quality Assurance Section and Corporate Services Section.
- A Task Team on Resource Mobilization, with the consequence that the Environment Fund for 2007 reached \$67 million up from around \$59 million in 2006.
- Evolving and action-orientated relationships with other UN bodies, including UNIDO, WTO, the UNWTO, GEF and, last but not least, UNDP.

TRANSFORMING THE WIDER SUSTAINABILITY CHALLENGE

The Medium Term Strategy and the evolution of UNEP are responses to the challenges outlined by the IPCC and also highlighted in the landmark Global Environment Outlook-4. While we may be soon turning the corner on climate change, we are far away from resolving the wider sustainability challenges.

- In 1987, around 15 per cent of global fish stocks were classed as collapsed. GEO-4 says this has roughly doubled to 30 per cent.
- 20 years ago around a fifth of fish stocks were deemed over-exploited. This has now risen to about 40 per cent.
- Globally more than two million people may be dying prematurely as a result of outdoor and indoor air pollution.
- In Latin America and the Caribbean, desertification—caused by deforestation,

over-grazing and inadequate irrigation—affects a quarter of the region.

- Populations of freshwater vertebrates have declined on average by nearly 50 per cent since 1987, compared with an approximate 30 per cent decline for terrestrial and marine species.

Over the coming 12 months, UNEP will accelerate its reforms; its support to the climate change agenda and to the wider sustainability agenda, including biodiversity loss and the loss of ecosystems.

The past year showed that the global multilateral environmental institutions can, in partnership, act on sound science to transform the sustainability landscape and at the pace and scale required. In late September, developed and developing countries meeting in Montreal set aside different interests and evolved UNEP's ozone treaty onto a new level by agreeing to accelerate the freeze and phase-out of hydrochlorofluorocarbons (HCFCs). In doing so they addressed the twin threats of depletion of the ozone layer and global warming—HCFCs are also global warming gases. In doing so they showed that addressing one environmental problem can have multiple economic, health and environmental benefits in respect to other challenges. It is a lesson with wider and deeper resonance. In combating climate change, we now have the opportunity to assist in combating forest loss, air pollution and damage to the world's oceans too.

It is a lesson UNEP will take forward in 2008. Not just in terms of the Bali Road Map, but in respect to the many other road maps that have been drawn up in the past two decades, but along which we may have got a bit lost, taken too many detours and hit some dead ends.

GEO-4's findings underline the achievements and the failures of those past journeys. Its recommendations provide a new road map all of their own—one we must urgently follow if a true Green Economy is to be ultimately realized.

FINANCIAL PERSPECTIVE: CONTRIBUTIONS TO THE ENVIRONMENT FUND

Annual contributions to the Environment Fund increased by more than 13 per cent during 2007. That was the biggest annual growth in financial support to UNEP since 1990. As a result, total annual voluntary payments to the Environment Fund reached their maximum, and delayed contributions continued to arrive at the time of finalizing this report. Total support is expected to increase further by close to 17 per cent, as the Environment Fund is estimated to receive approximately US\$69 million in contributions for 2007 (Fig.2). The total income for 2007, including miscellaneous support, was expected to exceed US\$70 million. This is the highest level achieved in the history of UNEP, although still below the target of US\$72 million for the second year of the biennium 2006-2007.

Governments remained the most important donors. UNEP continued working on broadening and strengthening the donor base by stimulating more adequate and timely voluntary payments by all UN Member States. A majority of the donor countries increased or maintained the same level of contributions in the second year of the biennium following the voluntary indicative scale of contributions (VISC) for 2006-2007. Thirty-eight countries increased their contributions, including 10 countries that resumed payments and two UN Member States that contributed for the first time (Fig.3). Approximately 40 per cent of the increase was achieved through resumed contributions by Italy, which did not pay in 2006, and another 40 per cent through a major increase in contributions by the Netherlands (Fig.1).

In mid-2007 the Executive Director notified 190 UN Member States of a draft VISC proposed for the next biennium 2008-2009. The new VISC reflects the increased budget of US\$152 million approved by the 24th Session of the Governing Council in 2007 for the next biennium of 2008-2009. Countries were invited to consider increasing voluntary payments to the Environment Fund and ensure adequate financing of the work programme approved by the Governing Council.

Following decision GC.24/1, UNEP invited countries to move towards contributions to the Environment Fund in preference to contributions to earmarked trust funds, with a view of enhancing the role of the Governing Council in determining the Programme

Of Work and priorities of UNEP. In 2007, several major donor countries redirected all or part of their earmarked support towards the Environment Fund, making additional contributions well above the level invited by VISC. The Netherlands was one of the main donors that decided to shift its earmarked support within a partnership agreement towards the Environment Fund. As a result, their contribution to the Environment Fund increased by more than 60 per cent and the country topped the list of donors in 2007. Two other major donor countries, the United Kingdom and Italy, decided to move the additional financial support in 2008 towards the Environment Fund. This will increase their contributions well above the VISC level and assist UNEP in efficient implementation of the work programme in 2008. Furthermore, UNEP invited several other major donors that provide substantial earmarked support to particular programme areas to consider options of redirecting part or all earmarked contributions towards the Environment Fund.

During the last five years (2003-2007) of using the VISC, more than 150 countries made their payments to the Environment Fund. As of December 2007, UNEP received contributions from 104 countries in all six regions and payments continue to arrive.

SUPPLEMENTARY FUNDS AND EARMARKED SUPPORT

While mobilizing adequate contributions to the core Environment Fund remains a top fund raising priority for UNEP, supplementary funds, including trust funds, trust fund support and earmarked contributions, are also important to the organization as they allow UNEP to fully implement the work programme approved by the Governing Council.

Partnerships with major donor countries have played a significant role in improving the financial situation in UNEP over the last six years and will be maintained as an important tool in mobilizing additional contributions. In 2007, UNEP continued its work within existing partnership agreements with Belgium, Ireland, Norway, Sweden and Spain, and mobilizing approximately \$27 million in earmarked support to UNEP priority programme areas, excluding payments to MEAs.

CONTRIBUTIONS TO THE ENVIRONMENT FUND 2000-2007

	2000	2001	2002	2003	2004 *	2005 *	2006*	2007**
Contributions and pledges USD	41 mil	44.1 mil	48.3 mil	52.6 mil	59.5 mil	59.6 mil	59.0 mil	69.2mil

* includes pledges ** includes pledges and estimates

REGIONAL CONTRIBUTIONS TO THE ENVIRONMENT FUND IN 2007

	Africa	Asia and Pacific	Europe	Latin America and Caribbean	North America	West Asia
Number of UN Member States in the region	53	43	50	33	2	11
Number of countries that paid/pledged	15	26	42	15	1	5
Contributions and Pledges	167,419	4,328,764	55,792,871	649,859	5,750,000	361,853

ENVIRONMENT FUND CONTRIBUTIONS 2004–2006: TOP 20 DONORS

Country	2004	2005	2006	TOTAL
United Kingdom	7,672,560	7,986,720	7,875,000	23,534,280
Germany	6,945,516	6,641,934	7,005,762	20,593,212
Netherlands	6,020,352	6,003,878	6,269,453	18,293,683
United States	5,910,100	6,571,368	5,750,000	18,231,468
France	4,614,262	4,000,000	4,340,000	12,954,262
Finland	3,364,760	3,601,026	3,648,788	10,614,574
Japan	3,400,000	3,230,000	3,020,198	9,650,198
Switzerland	2,827,216	2,997,548	2,914,219	8,738,983
Sweden	2,800,532	2,883,512	2,677,818	8,361,862
Denmark	2,658,662	2,441,717	2,603,511	7,703,890
Norway	2,134,259	2,370,305	2,221,597	6,726,161
Italy	3,072,800	2,886,960	***	5,959,760
Canada	1,984,890	2,058,894	792,088	4,835,872
Spain	950,902	709,500	1,836,940	3,497,342
Belgium	758,920	730,195	776,741	2,265,856
Ireland	381,795	396,187	1,001,039	1,779,021
Austria	509,543	520,953	497,438	1,527,934
Russian Federation	500,000	500,000	500,000	1,500,000
Australia	424,600	428,450	413,050	1,266,100
Luxembourg	165,718	189,180	416,745	771,643
TOTAL	57,097,387	57,148,327	54,560,387	168,806,101
WORLD TOTAL	59,538,474*	59,639,599*	59,200,000**	178,378,073

*includes pledges

**includes estimates

***pledge not yet made

ENVIRONMENT FUND: COUNTRIES INCREASING CONTRIBUTIONS/PLEDGES 2006 vs 2007

Country	Contributions and Pledges in 2006 (A)	Contributions and Pledges in 2007 (B)	Increase (B-A)
	US\$	US\$	US\$
1 Andorra	31,800	36,493	4,693
2 Australia	413,050	508,080	95,030
3 Austria	497,438	523,040	25,602
4 Belgium	776,741	818,514	41,773
5 Belize	0	700	700
6 Brazil	100,000	192,670	92,670
7 Bulgaria	6,600	7,200	600
8 Czech Rep.	219,116	242,907	23,791
9 Denmark	2,603,511	2,881,189	277,678
10 Ecuador	0	3,000	3,000
11 El Salvador	2,400	3,200	800
12 Finland	3,648,788	3,873,012	224,224
13 Germany	7,005,762	7,526,939	521,177
14 Guinea	0	700	700
15 Haiti	0	2,467	2,467
16 Honduras	0	1,000	1,000
17 Hungary	80,000	82,000	2,000
18 Iceland	25,000	37,500	12,500
19 Italy	0	4,122,900	4,122,900
20 Korea (Rep)	100,000	200,000	100,000
21 Kyrgyzstan	0	1,200	1,200
22 Lithuania	7,200	14,000	6,800
23 Luxembourg	416,745	546,161	129,416
24 Mongolia	1,000	2,000	1,000
25 Montenegro	0	1,000	1,000
26 Namibia	0	1,500	1,500
27 Netherlands	6,269,453	10,280,338	4,010,885
28 Norway	2,221,597	2,381,444	159,847
29 Pakistan	5,000	9,987	4,987
30 Papua N. Guinea	0	1,000	1,000
31 Qatar	0	12,000	12,000
32 Spain	1,836,940	1,984,528	147,588
33 Sri Lanka	1,558	5,100	3,542
34 Switzerland	2,914,219	3,080,175	165,956
35 Thailand	20,000	25,000	5,000
36 Togo	0	657	657
37 UK	7,875,000	8,576,820	701,820
38 Zambia	2,178	2,724	546
	37,081,096	47,989,145	10,908,049

Number of new contributors 12

ENVIRONMENT FUND CONTRIBUTIONS (US\$) 2007

Country*	USD	Country*	USD
Algeria	10,000.0	Lesotho	10,000.0
Andorra	36,493.2	Liechtenstein	3,900.0
Armenia	1,300.0	Lithuania	14,000.0
Australia	508,080.0	Luxembourg	546,161.0
Austria	523,040.0	Malaysia	40,000.0
Bangladesh	2,550.0	Maldives	2,000.0
Barbados	2,500.0	Malta	10,000.0
Belarus	2,200.0	Mauritius	5,000.0
Belgium	818,514.0	Mexico	350,000.0
Belize	700.0	Micronesia	600.0
Bhutan	1,350.0	Monaco	20,000.0
Brazil	192,670.0	Mongolia	2,000.0
BruneiDarussalam	10,000.0	Montenegro	1,000.0
Bulgaria	7,200.0	Namibia	1,500.0
BurkinaFaso	1,000.0	Netherlands	10,280,337.0
Cambodia	2,000.0	NewZealand	160,000.0
Chile	20,000.0	Nigeria	40,000.0
China	250,000.0	Norway	2,381,443.8
Colombia	46,342.4	Oman	10,000.0
Croatia	23,000.0	Pakistan	9,986.9
Cyprus	22,000.0	Panama	10,000.0
CzechRep.	242,907.1	PapuaNewGuinea	1,000.0
Dem.People'sRep.Korea	1,000.0	Poland	150,000.0
Denmark	2,881,188.7	Portugal	20,000.0
Ecuador	3,000.0	Qatar	12,000.0
ElSalvador	3,200.0	RepublicofKorea	200,000.0
Estonia	7,500.0	RepublicofMoldova	700.0
Fiji	4,478.2	Romania	32,000.0
Finland	3,873,012.0	RussianFederation	500,000.0
France	4,340,000.0	SaudiArabia	132,853.5
Germany	7,526,939.0	Senegal	2,000.0
Greece	200,000.0	Serbia	10,000.0
Grenada	600.0	Seychelles	1,200.0
Guatemala	4,300.0	Slovakia	30,000.0
Guinea	700.0	Slovenia	50,000.0
Guinea-Bissau	700.0	SouthAfrica	54,000.0
Haiti	2,467.0	Spain	1984527.8
Honduras	1,000.0	SriLanka	5,100.0
Hungary	82,000.0	Sweden	2,769,000.0
Iceland	37,500.0	Switzerland	3,080,175.0
India	100,000.0	Syria	7,000.0
Indonesia	25,000.0	Tajikistan	1,007.0
Ireland	430,612.8	Thailand	25,000.0
Italy	4,122,900.0	Togo	658.0
Israel	20,000.0	Trinidad&Tobago	10,000.0
Jamaica	3,080.0	Tunisia	7,000.0
Japan	2,963,807	Turkey	125,000.0
Kazakhstan	10,000.0	Tuvalu	600.0
Kenya	30,937.0	UnitedKingdom	8,576,820.0
Kuwait	200,000.0	UnitedStates	5,750,000.0
Kyrgyztan	1,200.0	Zambia	2,724.0
Lao	2,000.0		
Latvia	9,500.0		
		TOTAL	67,050,762.3

Countries that paid/pledged for 2007 as at 31.12.07

CLIMATE CHANGE

For more than two decades UNEP has played a key role in United Nations efforts to address climate change and increase awareness among governments, the scientific and business communities and the general public. Assessments by the Intergovernmental Panel on Climate Change (IPCC)—established by UNEP and the World Meteorological Organization in 1988—underpinned negotiations for the Kyoto Protocol, and continue to provide the foundation for global decision making on climate change. The fourth IPCC assessment was released during 2007, with the three Working Groups of the IPCC each presenting their findings, culminating in a synthesis report and a summary for policy makers, released on 17 November 2007 in Valencia, Spain.

The threat that climate change poses to peace, security and sustainable development led UN Secretary-General Ban Ki-moon to make it one of his top priorities on assuming office in January 2007. In September, Secretary-General Ban called a high level meeting on climate change at UN headquarters, in which UNEP participated. The meeting generated broad agreement among governments on the urgency of the climate challenge and that the principal arena for addressing it is the UN Framework Convention on Climate Change (UNFCCC). UNEP supports the UNFCCC process in a variety of ways, and will continue to support the Parties to the UNFCCC as they work to put in place a structure for reaching a post-2012 agreement that focuses on significantly reducing greenhouse gas (GHG) emissions and supporting for adaptation activities.

TOWARDS A LOW CARBON SOCIETY

There is a growing movement among governments, cities, organizations, the business community and individuals to reduce or offset GHG emissions and pursue what is known as 'carbon neutrality'. At the UN's Chief Executives Board meeting in October, each Executive Head of a UN programme or agency pledged to work towards carbon neutrality

for the UN under the leadership of the Environmental Management Group (EMG), for which UNEP provides the secretariat. They committed to take an inventory of GHG emissions by the end of 2009, to start immediately to reduce emissions to the extent they can, and to assess the cost of offsetting the remainder via the purchase of Kyoto Protocol Clean Development Mechanism (CDM) credits.



Pierre Calleja, manager of French firm Tyca, checks prototype street lamps filled with chlorella seaweed in his laboratory in Libourne, southwestern France, 11 December, 2007. Calleja has filed a patent application for this prototype that captures carbon dioxide (CO₂) and expels oxygen. Businesses around the globe are seizing on the new economic opportunities presented by the push to develop new technologies to mitigate climate change. UNEP is part of the effort, working with some of the world's largest and most influential businesses to facilitate the transition to a low carbon economy. © Regis Duvignau/Reuters

UNEP's EMG secretariat is also guiding the development of a global climate neutral network so governments, organizations, businesses and communities can pledge themselves to carbon neutrality and share the lessons and tools that will be necessary for achieving it. A book, *Climate Action*, published by Sustainable Development International in partnership with UNEP, was distributed widely at the UN climate change meeting in Bali in December, as well as to

key global business leaders. The meeting also provided a platform for UNEP to launch its campaign for World Environment Day 2008: 'Kick the CO₂ Habit: Towards a Low Carbon Economy'.

As highlighted by UNEP's GEO-4 assessment, which was released in October 2007, stabilizing global mean atmospheric temperatures at no more than 2°C above pre-industrial levels—beyond



Michel Jarraud, Secretary-General of the WMO, Rajendra Pachauri, IPCC Chair, UN Secretary-General Ban Ki-moon and Achim Steiner, UNEP Executive Director at the release of the summary for decision makers and synthesis report of the fourth IPCC assessment, 17 November 2007 in Valencia, Spain. The fourth IPCC assessment states unequivocally that climate change is happening, principally due to greenhouse gas (GHG) emissions caused by human activity, and that many of the predicted impacts—from melting glaciers and sea level rise to water scarcity and social upheaval—are already apparent. It also makes a strong link between climate change and wider development challenges, such as poverty, unequal access to resources, conflict and disease. The broad global social, economic and environmental implications of climate change, as well as the important work the United Nations is doing to understand the issue and provide solutions, were further highlighted in October when the Norwegian Nobel Committee announced it was awarding the 2007 Nobel Peace Prize jointly to the IPCC and former United States Vice President Al Gore “for their efforts to build up and disseminate greater knowledge about man-made climate change, and to lay the foundations for the measures that are needed to counteract such change.” © IISD

which climate impacts would become significantly more severe and threaten major irreversible damage—will mean cuts in GHG emissions of at least 50 per cent from 1990 levels by 2050. This implies emissions cuts of between 60 and 80 per cent by 2050 in developed countries, and significant cuts for developing nations, if they accept emissions reduction commitments.

Achieving such cuts, while respecting the individual countries’ development goals, is a central challenge for the Parties to the UNFCCC, alongside addressing the question of supporting adaptation measures for those countries already experiencing or expecting to experience the negative impacts of climate change. In December, the UNFCCC Conference of Parties in Bali, Indonesia, agreed on the ‘Bali roadmap’, which will guide negotiations under the Convention and the Kyoto Protocol on reaching a comprehensive framework for the period after 2012 when the

Kyoto Protocol expires. UNEP is supporting institutional capacity enhancement, especially in least developed countries, so they can fully participate in the negotiations.

CLEAN DEVELOPMENT

UNEP supports global mitigation efforts by promoting more efficient energy generation, energy conservation and using cleaner energy sources, especially renewable energy. As part of its strategy, UNEP is building capacity in 25 developing countries so they can participate in the CDM and global carbon markets. UNEP has worked on capacity building and awareness related to the CDM since it was originally defined in the Kyoto Protocol, and is working with United Nations Development Programme (UNDP) and the World Bank to expand coverage of these activities. The Capacity Development for CDM (CD4CDM) project is helping to develop institutional and

human capacity necessary to formulate, approve and implement actual CDM projects. The first phase, from 2002 to 2006 supported the CDM sector in Mozambique, Uganda, Cote d'Ivoire, Ghana, Bolivia, Ecuador, Guatemala, Egypt, Morocco, Philippines, Cambodia and Vietnam. In the second phase (2007 to 2009), the project is being implemented in Nicaragua, Peru, Suriname, Algeria, Tanzania, Mauritius and Bangladesh with additional funding from the Netherlands Ministry of Foreign Affairs.

Also in Mauritius, UNEP-DTIE, the UNEP Risoe Centre (URC) and a group of European Union (EU) consultants have started a project to help develop an energy policy up to 2025. The policy outline's environmental dimensions include renewable energy options, green taxes, energy efficiency, and environmental impacts of energy use on the local and global environments. With more than \$100,000 funding from the EU and UNDP Mauritius, URC is working on renewable energy, electricity supply (in partnership with consultants Ea Energianalyse, Denmark), and examining carbon finance for various energy supply options, include renewable energy and clean fossil fuel technologies. URC has established a framework for including CDM options in new generating capacity and estimating the possible level of GHG reductions on both the supply and demand side. Over the coming months, URC will suggest new post-Kyoto market mechanisms for utilities to reduce emissions, and possible CDM projects for the transport sector.

A joint UNEP-World Bank initiative, 'Carbon Finance for Sustainable Energy in Africa' (CF-SEA), is working with host government agencies, banks and project sponsors to develop an initial pipeline of CDM investment opportunities in Cameroon, Ghana, Mali, Mozambique and Zambia, with possible inclusion in the World Bank's Community Development Carbon Fund. In each target country, CF-SEA works with project developers to identify, prepare and market specific carbon projects while strengthening the capacity of local carbon experts, co-financiers and governmental authorities to engage in CDM activities.

OPPORTUNITIES AND BARRIERS

Lack of equitable regional distribution is currently a major drawback of the CDM. A few countries

have captured the largest share of the global CDM project portfolio while sub-Saharan Africa has been largely bypassed by the CDM market. Of the total 2,647 projects currently in the global pipeline, only 33 projects are in sub-Saharan Africa, with 21 of these in South Africa. UNEP is working with funding from Sweden, Spain and Finland to overcome barriers to the carbon market in sub-Saharan Africa and enhance the capacity of the private sector to access carbon finance. The Regional CDM Capacity Building Project for sub-Saharan Africa will run until the end of 2008 in the Democratic Republic of Congo, Ethiopia, Kenya, Mauritius, Mozambique, Tanzania and Zambia. The project will review existing institutional frameworks and identify gaps both in the public and private sectors to attract commercial carbon finance under the CDM or voluntary carbon markets.

Also in sub-Saharan Africa, the Carbon Finance for Agriculture, Silviculture, Conservation, and Action against Deforestation (CASCADe) project aims to promote the use of Carbon Finance schemes in the agricultural and forestry sectors. The project is funded by the French Global Environment Facility and will be implemented in partnership with the French Agricultural Research Centre for International Development (CIRAD) and the French National Forestry Office (ONF). Participating countries include Benin, Cameroon, the Democratic Republic of the Congo, Gabon, Madagascar, Mali and Senegal. In-country activities will start in January 2008 and end in December 2010.

UNEP is also leading the development of CDM capacity and project development technical assistance activities and knowledge management tools, including a series of CDM manuals and guidebooks and the design and hosting of web-based CDM knowledge sharing platforms, such as the UNFCCC CDM Bazaar and the CDM Pipeline Database. The UNFCCC CDM Bazaar is a free-of-charge platform for CDM market participants, including emissions reductions buyers and sellers, and technology/service providers. It has more than 600 registered users from 40 different countries, and allows registered users to upload information to the website that can facilitate emission reductions market transactions.

In May 2007, the African Bankers Carbon Finance Investment Forum brought together 173

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banking CEOs and other key actors in the African financial community for the first time to discuss opportunities for and barriers to using carbon finance to advance sustainable development in Africa. Carbon entrepreneurs from across Africa had the opportunity to promote more than 30 projects to buyers and financiers, with a number of deals advanced or concluded at the Forum. The event demonstrated the effectiveness of multi-donor cooperation and private-public partnerships to address the low number of carbon finance deals in Africa. The Forum was made possible with co-financing by Germany, Norway, Italy and the World Bank; and strong support from private sector and co-financing by the Development Bank of South Africa and BNP Paribas

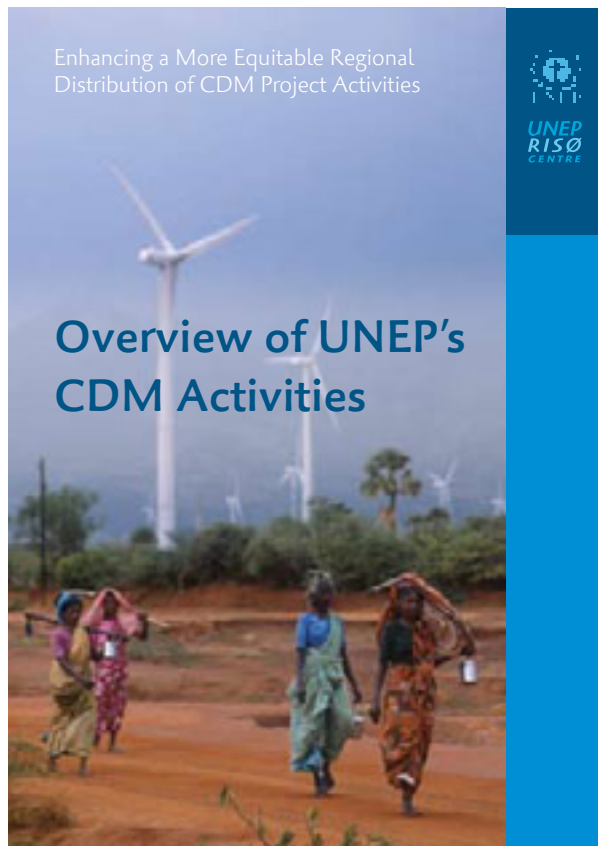
CLEAN ENERGY

The Rural Energy Enterprise Development (REED) initiative is nurturing new clean energy enterprises in developing countries by providing enterprise development services and early stage seed finance. It is helping the private sector to deliver affordable energy services based on clean

and renewable energy technologies in China, Brazil and five countries in Africa (Ghana, Senegal, Mali, Tanzania and Zambia). More than \$10 million has been invested in these programmes, which together have seen more than 50 clean energy enterprises created in areas such as solar crop drying, charcoal production from sawmill wastes, efficient cook stove manufacturing, wind water pumping, solar water heating, liquefied petroleum gas (LPG) distribution and various energy efficiency products and services.

The past year witnessed the largest rate of growth in enterprise investments in six years, especially in Africa. This reflects a transition in the status of REED at the country level from demonstration through proof-of-concept to the threshold of large-scale replication. AREED II is building on the experience of the African REED programme, with a focus on the delivery of clean energy products and services in rural areas of Africa. The Swedish International Development Cooperation Agency (SIDA) supported programme provides financial assistance for the creation of new rural social enterprises and engages micro-finance institutions to provide financing to the customers of the rural enterprise.

UNEP is building capacity in 25 developing countries so they can participate in the CDM and global carbon markets.



Also following up on REED, a Seed Capital Assistance Facility (SCAF) is starting to help early-stage clean energy enterprises and projects to access start-up seed capital from commercial energy investors. This Global Environment Facility (GEF) and UN Foundation-supported facility is being implemented in African and Asian countries through UNEP, the Asian Development Bank and the African Development Bank. Through sharing project development and transaction costs and providing a seed capital return enhancement, the facility will help close the gap between what local renewable energy and energy efficiency entrepreneurs are able to offer in terms of returns on investment, and the requirements of the investment community.

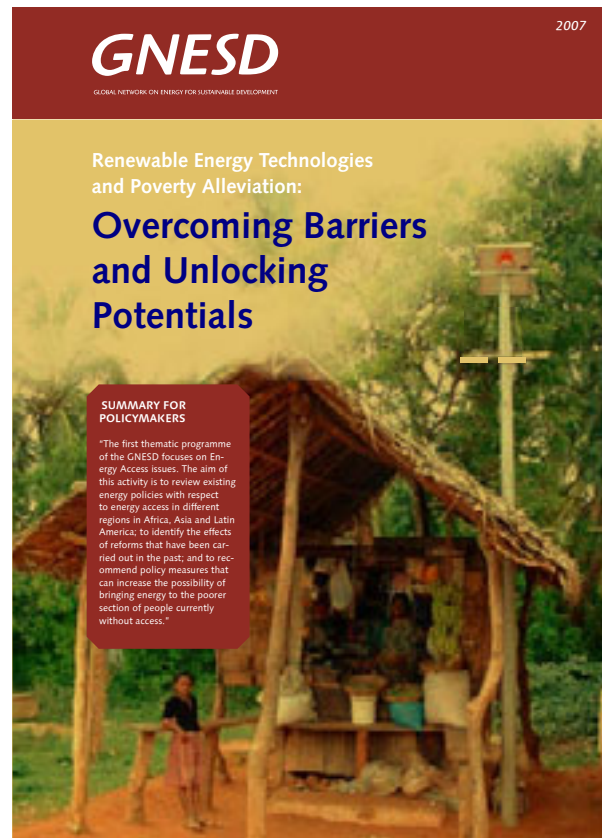
The UNEP-facilitated Global Network on Energy for Sustainable Development (GNESD) engages more than 20 centres of excellence in developing and industrialized countries to provide policy solutions for clean and efficient energy sources for the world's poor. It has produced a series of targeted reports on energy access and conducted regional workshops with UNEP, UNDP and the International Energy Agency (IEA).

Bridging both the 'energy divide' and the 'digital divide', e-Commerce and Renewable Energy (eCARE), is expanding access for clean energy and modern telecommunications services to rural and peri-urban regions of Ghana. eCARE works with small entrepreneurs to establish rural business centres powered by renewable energy, which sell voice telephony, Internet, and clean energy products and services. Currently, about 65 eCARE Centres are benefiting 300,000 people. eCARE is expanding into all regions of Ghana with plans to extend services to more than one million Ghanaians within three years.

ENERGY EFFICIENCY

Energy efficiency is an important cornerstone of any climate change mitigation effort. It is often characterized as the low-hanging fruit. However, there is still a huge gap between potential and realization. At the request of the Finnish Government, the IEA, the International Finance Corporation (IFC) and UNEP co-organized an international workshop on energy efficiency in Paris in April 2007 to help bridge this gap. The workshop provided an opportunity to share experience and learn about factors that have contributed to successful energy efficiency programmes. Workshop recommendations informed the discussions of the 15th session of the Commission on Sustainable Development, where energy efficiency was a prominent topic.

UNEP is also helping National Cleaner Production Centres to integrate energy efficiency into mainstream Cleaner Production programmes. Comprehensive guidelines and tools integrating cleaner production and energy efficiency have been tested in Asia and Central Europe in a range of industrial sectors, including textile, pulp and paper, food processing, and chemical sectors. The Energy Management and Performance Related Energy Savings Scheme (EMPRESS) promotes an industrial energy management tool, Monitoring and Targeting (M&T), in the Czech Republic and Slovakia. This tool is introduced through Energy Service Companies that accept the majority of the capital risk for an energy efficiency investment in exchange for a share in the positive cash flow from the energy savings generated after. National offices in each country conduct workshops for groups of companies, as well as targeting individual companies for additional support.



A 2007 GNESD study, *Renewable Energy Technologies and Poverty Alleviation: Overcoming Barriers and Unlocking Potential*, uses case studies to investigate the links between energy and the Millennium Development Goals.

BIOENERGY

UNEP renewable energy activities include supporting the development of criteria for the sustainable production of biofuels to assure the environmental and social sustainability of bioenergy production, supporting governments in planning and policy frameworks for bioenergy activities, and helping small businesses to produce and benefit from bioenergy. UNEP is a member of the G8's Global Bioenergy Partnership, aimed at supporting wider, cost effective biomass and biofuels deployment, particularly in developing countries where biomass use is prevalent, and has contributed to an overview report on bioenergy development in the G8+5 countries.

UNEP, including the UNEP World Conservation Monitoring Centre (UNEP-WCMC) is also a member of the Steering Board of the Roundtable on Sustainable Biofuels, and on four working groups (environment, social, GHG balance and implementation) aimed at developing a meta-

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standard for biofuel production and use that builds on existing initiatives on a crop basis and on the national level. Draft principles have been developed, and criteria to further refine the principles are under development. To ensure participation of small farmers, NGOs, industry and governments in the different regions, UNEP organized two outreach meetings with the Ecole Polytechnique Federale de Lausanne, one for Latin America in Brazil, with the support of Petrobras, and one for Asia in China, with the support of Michelin. Similar meetings for Africa are planned in the first quarter of 2008.

A Roundtable on *Jatropha* was launched, involving a number of centres of excellence and business players from Africa, Brazil and India, to provide reliable information on the agronomics of the plant and good agricultural practices related its use. Among the topics covered were conversion technologies and business models that could be envisaged, with a special focus on the involvement of local communities and small farmers. The aim of the initiative is to provide sustainability criteria specific to *jatropha*, and hands-on materials that the centres of excellence can use to advise entrepreneurs.

UNEP also contributed to a UN Energy publication on bioenergy that highlights the potential contribution of bioenergy to development, energy security and fighting climate change. It also outlines the environmental and social risks related to the production of feedstocks, conversion, transport and use. It is crucial to ensure good bioenergy planning at regional and national levels, and management at the project level to ensure that the potential benefits materialize without creating new problems.

SUSTAINABLE TRANSPORT

Transport consumes a quarter of the world's energy. It produces local and regional air pollution, congestion in urban areas, and 25 per cent of global GHG emissions. Growing demand for mobility, combined with population growth and the fact that more people now live in cities than in rural areas, along with the urgency to act to combat climate change, indicate that current transport systems need to change.

The UNEP Sustainable Transport Programme is promoting less polluting transport systems and

mobility options based on renewable fuels and the integration of environmental factors into transport-related decisions.

A UNEP partnership with the International Association for Public Transport (UITP) promotes the environmental and life-style benefits of public transport. The Sustainable Mobility and Public Transport partnership is currently working with the International Railway Union (UIC) on joint initiatives to promote sustainable development in the rail sector. NESTLAC is a GEF-funded project, implemented by URC to disseminate, promote and facilitate the implementation of Environmentally Sustainable Transport (EST) options in Latin America and the Caribbean. The network promotes the switch from private cars to public and non-motorized transport, leading to reductions in local and global emissions. In its second phase, NESTLAC is assisting Guatemala City in the implementation of a second corridor for the Bus Rapid Transit system, Panama City in restructuring the public transport sector, and Concepcion, Chile, in promoting the massive use of bicycles.

Another UNEP-GEF project is working to reduce transport sector GHG emissions in Dar es Salaam, Tanzania, and Cartagena, Colombia, by designing and implementing a Bus Rapid Transit (BRT) system and improved cycling facilities, thereby reducing private motor vehicle trips, and by reducing the number of bus kilometres travelled in each city. The project has also produced a BRT planning guide that will allow the rapid dissemination of BRT expertise to other cities. The Dar es Salaam BRT operational plan, business plan and financial models have been completed, and the system is on track for completion by 2010.

In Central and Eastern Europe the EST goes EAST Clearing House (EgE) is a portal to exchange information knowledge, news, and experiences on environmentally sustainable transport. Launched jointly by UNEP, the Austrian Federal Ministry of Agriculture, Forestry, Environment and Water Management (Lebensministerium), Central European Initiatives and the Organisation for Economic Cooperation and Development (OECD), the Clearing House hosts searchable databases for good practices, projects, and investments. The project currently has information on 245 projects.

SUSTAINABLE BUILDING

The UNEP Sustainable Buildings and Construction Initiative (SBCI) is promoting energy efficiency in different building sectors and investigating how market mechanisms can support energy efficiency investments. SBCI is a partnership between the private sector, government, non-government and research organizations formed to promote sustainable building and construction globally. There are currently 33 members. The SBCI Think Tank on Buildings and Climate Change published its first report *Buildings & Climate Change* showing that creating and operating buildings accounts for about 40 per cent of global annual energy consumption and up to one-third of GHG emissions. A draft report into the effectiveness of the CDM in supporting energy efficiency projects in the building sector was tabled at SBCI annual workshops in Kuala Lumpur in November. The final report will be published in early 2008.

In the Asia-Pacific region, rapid urbanization has put significant burdens on the environment, including urban land expansion, deteriorating water quality, air pollution and increasing traffic congestion, as well as growing solid waste disposal and sanitation problems. With urban infrastructure deficiencies acute both in peri-urban and inner city sites, there is an urgent need to focus on prevention, rather than 'end of pipe solutions', in the broader context of sustainability. The 'Prevention Approach—Urban Environment' project is promoting sustainable transport and eco-friendly building in the Asia-Pacific region. The project will disseminate information about sustainable transport and eco-friendly buildings and demonstrate their suitability and technological feasibility. An expert network on eco-housing has been established and demonstrations of good practices have been initiated. Generic guidelines for the construction of eco-housing and an eco-housing demonstration project in Sri Lanka have been completed, and a feasibility study on the use of off-peak hours electricity to generate hydrogen has been completed for Nepal.

In addition, a partnership was established with the Bangkok Metropolitan Authority (BMA) on climate change in July 2007. Bangkok signed the Bangkok Declaration aimed at reducing carbon emissions by 15 per cent in five years in May 2007 with 36 organizations. UNEP will provide technical assistance to BMA in three areas:

awareness; pilot demonstrations focusing on eco-housing and clean vehicles; and Bangkok as an environment capital. Support will also be provided to the BMA to produce a Bangkok Assessment Report on Climate Change.

CLIMATE PROOFING ECONOMIES

UNEP is assisting countries to adapt to change and climate proof their economies by helping to develop new ways of thinking and planning for development using improved science, ecosystem management and development policies. The Assessments of Impacts and Adaptations to Climate Change (AIACC) project has enhanced the scientific underpinnings of adaptation planning in developing countries. Implemented over the past six years, the AIACC has contributed to increased capacity in developing countries to identify and in some cases test adaptation options against the impacts of climate change. Case studies were carried out across the world, involving over 150 institutions in 60 countries, and more than 100 articles have been published in peer reviewed journals. The project has been

Buildings & Climate Change shows that creating and operating buildings accounts for about 40 per cent of global annual energy consumption and up to one-third of GHG emissions.





Mountain glaciers around the world continue to melt. Data released in January 2007 confirm the trend in accelerated ice loss during the past two and a half decades. The results come from glacier mass balance measurements collected by scientists around the world and published by the World Glacier Monitoring Service (WGMS) in Zurich, Switzerland. Such long-term monitoring provides one of the most essential variables required for global climate monitoring. As such, the data are an important contribution to UNEP's GEO-4 report and are one of the headline indicators presented in the GEO Year Book series. A joint publication on worldwide glacier change, published by WGMS and the Global Land Ice Measurements from Space project (GLIMS) is in preparation under the guidance of UNEP-DEWA, and will be released in April 2008.

The WGMS findings also underlined the importance of the 2007 World Environment Day theme "Melting Ice- A Hot Topic?". The main international celebrations, which also coincided with International Polar Year, were held in Norway, and saw the publication of *Global Outlook for Ice and Snow*, which provides the most up-to-date and comprehensive overview of the state of the cryosphere. The graphic from *Global Outlook for Ice and Snow* shows the glacier-fed rivers originating from the mountain ranges surrounding the Tibetan Plateau, which comprise the largest river run-off from any single location in the world. The rivers that drain these mountains influence the lives of about 40 per cent of the world's population. The retreat of glaciers not threatens those people's water security. It also increases the risk of natural disasters. The Hindu Kush-Himalayan region and the Central Asian Mountains have been severely affected by regular glacial lake outburst floods in recent years. The UNEP Glacial Lake Outburst Flood project aims to ensure that inhabitants in the region enjoy safe and sustainable livelihoods through enhanced capacity to deal with environmental hazards associated with mountain glaciers and glacial lakes, by integrating sound environmental policy, planning and adaptation measures into development planning. The project will prepare an inventory of glaciers and glacial lakes, develop early warning systems and identify adaptation and mitigation measures for each dangerous glacial lake. © Hugo Ahlenius/UNEP/GRID-Arendal

credited with increasing the contribution of experts from developing countries, notably of women scientists and their perspectives, to the IPCC's fourth assessment report.

UNEP is also working to mainstream climate change into the UN Development Assistance Framework and other national planning processes. UNEP and UNDP are piloting adaptation measures in eight developing countries under the One UN strategy, and are assisting the world's poorest countries to reduce vulnerability and 'climate proof' economies in areas ranging from

infrastructure development to agriculture and health. UNEP/GRID-Arendal is also leading the Many Strong Voices programme, which links people in the Arctic and Small Island Developing States in assessing climate change vulnerability, developing adaptation strategies, and communicating the need for deep cuts in GHG emissions.

In the Amazon and La Plata river basins in South America, science-based ecosystem management is reducing vulnerability, and in the Himalayas, sensitive mountain ecosystems and the rate of

glacier retreat are being monitored. UNEP is also working to encourage scientists, communities and policy makers to integrate climate proofing into energy, disaster management and forest policies.

FINANCING A LOW CARBON WORLD

UNEP works with a variety of government and private sector partners to promote climate-friendly investment and affordable energy solutions, and removing barriers to a low carbon economy, such as harmful subsidies and the high cost of finance. Energy subsidies are a major hurdle to achieving low-carbon societies. Reforming energy subsidies that are economically costly, ineffective in meeting social goals and harmful to the environment must play a central role in international and national efforts to achieve a long-term transition to a truly sustainable and secure energy system. There is therefore a need for more reliable and up-to-date information on the scale and pervasiveness of such subsidies for a better understanding about the harm they cause and for practical advice to policy makers about effective and equitable approaches to reforming them.

UNEP has initiated a multi-stakeholder process to address these challenges. Together with the United Nations Economic Commission for Europe (UNECE), it convened a meeting in Geneva in November 2007. Over thirty experts from intergovernmental and non-governmental organizations took stock of the work done in this area, shared perspectives, and proposed collective efforts to move the issue of energy subsidies onto the policy agenda. Future efforts are planned on two different work streams. The initial focus will be on reporting and potential mechanisms available to ensure consistent data collection, such as best practices.

The second work stream will make use of this data to achieve policy reform. To coordinate these activities and ensure consistency, the participants of the expert meeting will form an interim network and work collectively on aspects of the energy subsidy issue that are of shared interest and concern. UNEP will facilitate this network, coordinate with other UN agencies and non-governmental organizations, and help generate donor support.

The Sustainable Energy Finance Initiative (SEFI) provides financiers with the tools, support,

and global network to conceive and manage investments in the complex and rapidly changing marketplace for clean energy technologies. The SEFI strategy is to convene financiers and engage them to do jointly what they may have been reluctant to do individually, and to catalyze public-private alliances that will share the costs and lower the barriers to sustainable energy investment.

In 2007 SEFI released its first *Global Trends in Sustainable Energy Investment* report, which provides insight into the current dynamic of clean energy finance markets and what this tells us about broader changes that might be coming in the energy and overall climate mitigation sectors. Other activities include banker training programmes and a wide range of banker network activities. Another study, *Financial Risk Management for Renewable Energy*, is assessing financial risk management instruments for renewable energy projects. Together with the World Bank, UNDP, GEF and representatives from the finance, insurance and renewable energy sectors, the study aims to generate new thinking about financial risk management for renewable energy in developing countries.

INVESTING IN A LOW CARBON TRANSITION

UNEP is also assisting financial institutions in developing countries to establish lending programmes for renewable energy. By making loans more affordable, the Indian Solar Loan Programme has helped 100,000 people acquire solar electricity in southern India. Working through the Indian banking groups Canara Bank and Syndicate Bank, the initiative established two consumer loan programmes for solar photovoltaic (PV) systems that used a form of credit enhancement to bring down the initial financing costs of lending to this sector.

Today Indian banks are looking to expand their credit offering, particularly to rural customers, and partnering with UNEP allows them to do so in a rapidly growing clean energy sector. Interest rate softening helps them build solar financing portfolios without distorting the credit risk or the existing cash market for solar home systems. Five solar vendors met the qualification criteria, allowing their customers to access PV system financing from any one of the 2,076 participating

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Canara or Syndicate bank branches. With nearly 20,000 customers financed, the loan subsidy has been phased out and new banks have started lending for solar. The solar PV credit market, which didn't exist in 2002, now seems on its way to commercial scale and sustainability.

Another UNEP-GEF project is working to establish a sustainable supply chain of solar PV systems in targeted districts in Tanzania, Uganda, Ethiopia and Eritrea. The project was designed to replicate the positive experience of a commercial dissemination network developed in Kenya over the past decade. The project has demonstrated its capacity to establish a network of PV actors (suppliers, dealers, technicians, agents) between capitals and targeted districts and to create a PV-aware market.

In the southern Mediterranean, a solar loan facility has helped thousands of Tunisian households acquire solar water heaters. A similar programme is being expanded to Morocco and other countries. Under the Mediterranean Renewable Energy Programme (MEDREP), supported by the Italian Ministry of Environment, Land and Sea, a series of targeted market support measures are being developed in Tunisia, Morocco and Egypt, with possibility for further expansion in the region. These include loan and leasing programmes supported by some financial incentives such as capital cost or interest rate softening in order to stimulate the development of a long-term, self-sustaining market for renewables (mainly solar thermal). The initiatives developed so far have been targeting individual customers, hotels and the industry sector. In addition, a series of collateral activities are being put in place, including capacity building, awareness raising campaigns and carbon finance.

MITIGATING RISK

The UNEP Finance Initiative (FI) Climate Change Working Group is mainstreaming awareness and facilitating cooperation on climate change among financial institutions. It played a pivotal role in developing an e-learning course on climate change for financial executives, which was launched in June 2007. The course had a good response, with over 200 participants from around the globe. It provided an introduction to climate change and the science behind it, as well as emphasizing how it will affect the financial

services sector. Participants were exposed to policies and regulations in place, specifically the Kyoto Protocol and other regional policies. The course educated participants on the effect of climate change on energy financing and energy alternatives. Another important aspect of the course was a module on carbon finance. UNEP plans to update and re-launch the course in early 2008.

On World Environment Day, 5 June 2007, which was observed under the slogan 'Melting Ice: A Hot Topic' and just prior to the G8 meeting in Germany, UNEP FI, in cooperation with a number of members of the Climate Change Working Group launched the *Declaration on Climate Change by the Financial Services Sector*—the first global statement on climate change by the finance sector, with the signatures of more than 20 CEOs from UNEP FI member companies. The essence of the declaration is a recognition by financial institutions from around the globe that anthropogenic climate change is real; the cost of inaction will be extremely high; financial institutions must take greater action and integrate climate change into their everyday decision making; and governments need to do more, namely set ambitious, long-term targets for emissions reduction.

UNEP FI also has an Insurance Working Group whose members seek to address current and emerging sustainability issues concerning the global insurance industry. FI members believe this work will help redefine the conventional perception of insurance: from an instrument to transfer risk to a vital tool for sustainable development. The inaugural IWG report *Insuring for Sustainability: Why and How the Leaders are Doing It*, launched in May 2007, shows why sustainability matters in the insurance business and why the insurance industry is uniquely positioned to tackle some of the most serious challenges the world is facing. It establishes the integral role of the insurance industry in the economy and its tremendous scope to encourage sustainable behaviour. The report identifies global sustainability issues vital for this generation of insurers, highlights case studies of best practice, and uncovers the opportunities of sustainable insurance. The IWG calls on the insurance industry to adapt to a changing risk landscape unceasingly, to innovate, and to find solutions to the most pressing sustainability issues collectively.

THE REGIONAL PERSPECTIVE: WEST ASIA

The West Asia region is geographically relatively small. From the Arab States bordering the eastern Mediterranean in the west to Oman and Yemen in the east, it includes 12 countries represented by two distinct sub-regions. The Gulf Cooperation Council Countries economies are predominantly driven and supported by oil and gas reserves, which represent 40 per cent of their GDP, while the Mashreq countries and Yemen are predominantly agricultural.

Rapidly expanding populations and a move to more diversified industrial bases are exerting considerable pressures on the environmental resources and services of the region. Increased economic development has also led to rapid urbanization, but with little urban planning, leading to a number of environmental challenges. The region is one of the most water-challenged regions of the world, with water availability falling from 1,700 cubic metres per annum in 1985 to 907 cubic metres per annum in 2005. The region is also predominantly desert, with 64 per cent of its 4 million square kilometres classified as drylands.

The Regional Office for West Asia (ROWA) is located in Manama, Bahrain, and comprises core staff recruited from across the region (and beyond) who work alongside specialist officers from various UNEP Divisions. ROWA's priority objective is to ensure that decisions of the UNEP Governing Council are effectively implemented in the region, and that regional concerns, priorities and perspectives are taken fully into account when developing UNEP policies.

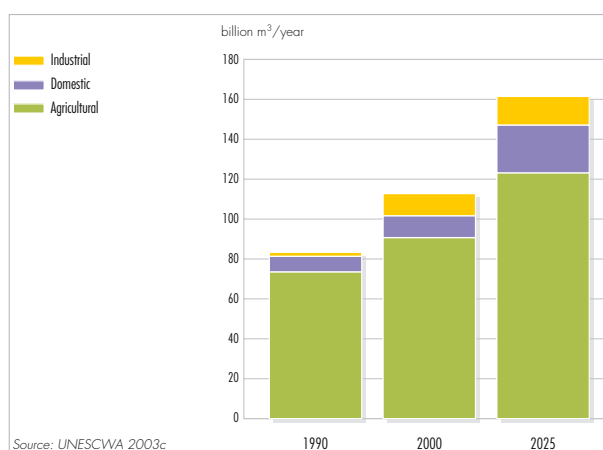
At the regional level, UNEP-ROWA works closely with the Council of Arab Ministers Responsible for the Environment (CAMRE) at the League of Arab States, which represents all 22 Arab States, including the 10 North African Arab States (which are covered by the UNEP Regional Office for Africa). ROWA tries where possible to include these states in its activities, with the support of other Arab regional organizations. As part of its regional cooperation, UNEP-ROWA is a member of the Joint Secretariat of the Joint Committee on the Environment and Development in the Arab Region (JCEDAR) and participates in all meetings of JCEDAR, and the Executive and full Council Sessions of CAMRE. UNEP-ROWA also provides technical and policy guidance to the Arab Technical Team on MEAs related to Chemicals and Waste Management, the Arab Technical Team on MEAs related to Desertification and Biodiversity; and the Arab Permanent Committee on Meteorology and Climate Change, through which regional programmes and projects are identified. Cooperation with CAMRE is also centred around the Sustainable Development Initiative for the Arab Region.

At the sub-regional level, UNEP-ROWA works with the Gulf Cooperation Council, participating in its annual Environmental Focal Points and Ministerial Sessions and presenting UNEP's work within the sub-region. There is a current Greening the Gulf Initiative, being developed by UNEP-ROWA and the Supreme Council for the Environment and Natural Reserves of Qatar, to develop an environmental strategy for the sub-region as a whole and building capacity in line with the UNEP Bali Strategic Plan for Technology Support and Capacity Building. At the national level, while environment agencies are established in all countries in the region, many are in their infancy compared with other, more established agencies, and lack both financial and well-trained human resources, as well as often being marginalized in terms of major developmental decisions. UNEP-ROWA therefore works to try and build the capacity of the environmental agencies to better equip them to carry out their mandates. Where appropriate, UNEP-ROWA is working with UNDP and UN Country Teams, as well as directly with the environmental agencies themselves.

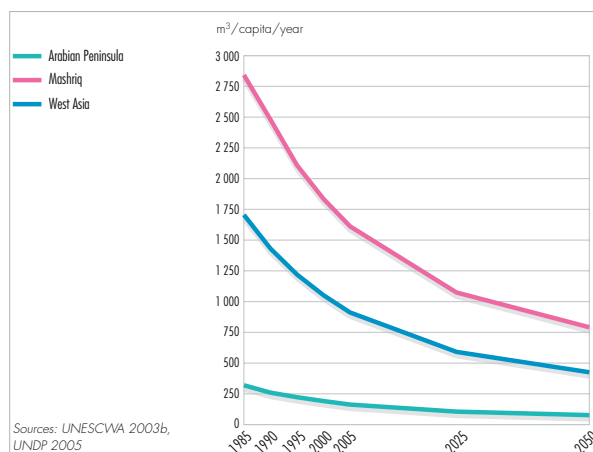
In a region characterized by predominantly arid and semi-arid environments, awareness raising activities on climate change are regularly conducted through provision of technical printed, audio-visual material, presentations at major events and conferences in the region, and through interaction with the media. UNEP-ROWA also undertakes capacity building on the synergetic implementation of UNCCD, CBD and UNFCCC and also looks towards synergetic implementation of its natural resources programme in terms of the relevant MEAs. Biannual meetings of the Climate Change Focal Points of the Arab Permanent Committee on Climate Change elaborate programmes and activities related to the impacts of climate change on the Arab region and provision of technical and policy guidance.

UNEP-ROWA has commissioned a study of renewable energy potential and current activities in the region (in partnership with the German Federal Ministry for the Environment, Nature Conservation and Nuclear Safety) entitled *Current Status of Renewable Energies in the Middle East—North African Region*. As part of support to Lebanon in the aftermath of the 2006 conflict, a feasibility study was undertaken with the American University of Beirut and the German Federal Ministry for the Environment, Nature Conservation and Nuclear Safety on 'Renewable Energy Systems to Meet Domestic Energy Needs in the Reconstruction Plans of South Lebanon Villages'.

GEO-4: Current and projected water demand in West Asia



GEO-4: Trends and projections in per capita freshwater availability

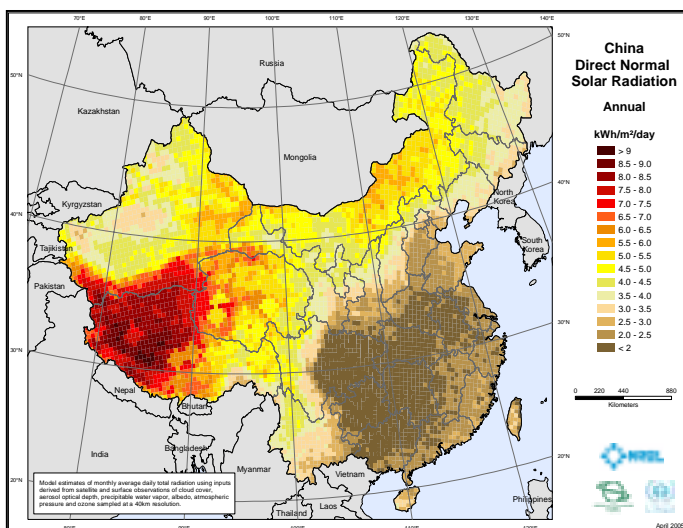
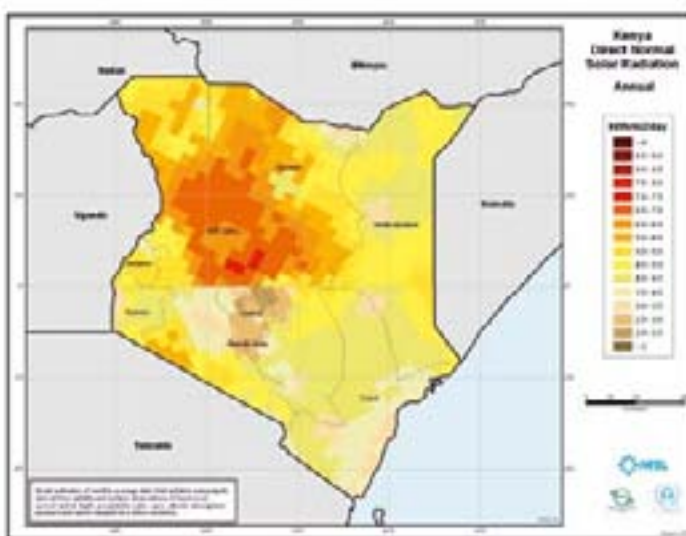
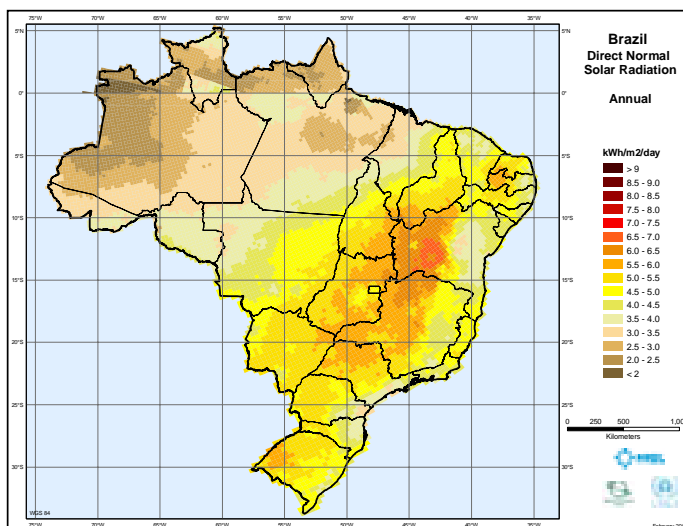


POWERING A LOW CARBON WORLD

UNEP's strategy emphasizes the identification of new technologies and policies to provide the foundation for a low carbon economy, and working with the private sector to ensure they are made as widely available and affordable as possible. In eastern Africa, a \$17 million GEF grant means UNEP and the World Bank can help countries overcome some of the basic technical and financial hurdles to exploit the region's vast potential for geothermal power. Ongoing geothermal well drilling in Olkaria-Domes, Naivasha, Kenya, represents the final part of the joint 'Geophysical Imaging for the Assessment of Geothermal Potential' project to confirm that the new combination of Magneto-Telluric (MT) and Micro-Seismic surveys and analyses result in wells that may yield over three times more output (6–10 megawatts (MW) instead of the 2 MW per well for the first wells in Olkaria) thus substantially lowering drilling risk and ultimately the cost per kilowatt-hour of geothermal energy.

The Renewable Energy Policy Network for the 21st Century (REN21) is a global policy network and forum for international leadership to promote the rapid expansion of renewable energy in developing and industrialized countries. UNEP co-hosts the REN21 Secretariat with the German technical cooperation enterprise, GTZ. UNEP is represented on REN21's multi-stakeholder Steering Committee. Renewable sources of energy are set to play a central role in the transition towards a more sustainable energy system. Reliable information on renewable energy resources, solar and wind energy in particular, can accelerate this transition by allowing developers to plan informed, long-term investments.

In a new development, the Government of Abu Dhabi sought UNEP's expertise to map solar and wind energy potential in the United Arab Emirates. A follow-up project covering the Middle East and



The Solar and Wind Energy Resource Assessment (SWERA), an international collaboration of more than 25 institutions, has mapped the solar and wind energy resources of 13 developing countries in South and Central America, Africa and Asia, and is expanding the programme to other countries. SWERA's mapping and analysis services, including a *Geospatial Toolkit*, allow wind and solar maps to be combined with electrical distribution grids and other data to provide high quality information that supports energy planning and policy development while lowering risk and project lead times for renewable energy project developers.

North Africa is currently under discussion. This work will break new ground, both in terms of the accuracy of the outputs and because it is probably the first such initiative supported by an oil-rich country seeking to diversify its energy source.

NATURAL ADVANTAGE

A new UNEP-led GEF-funded initiative is helping tea plantations across East Africa to utilize small-scale hydro electric power and to supply their national grids. The Greening the Tea Industry in East Africa project involves Burundi, Kenya, Malawi, Mozambique, Rwanda, Tanzania, Uganda and Zambia. The object is to increase investment in small hydropower to reduce energy costs to the tea industry in countries covered by the East African Tea Trade Association (EATTA), improve reliability of power supply, increase power supply for rural electrification and reduce GHG emissions.

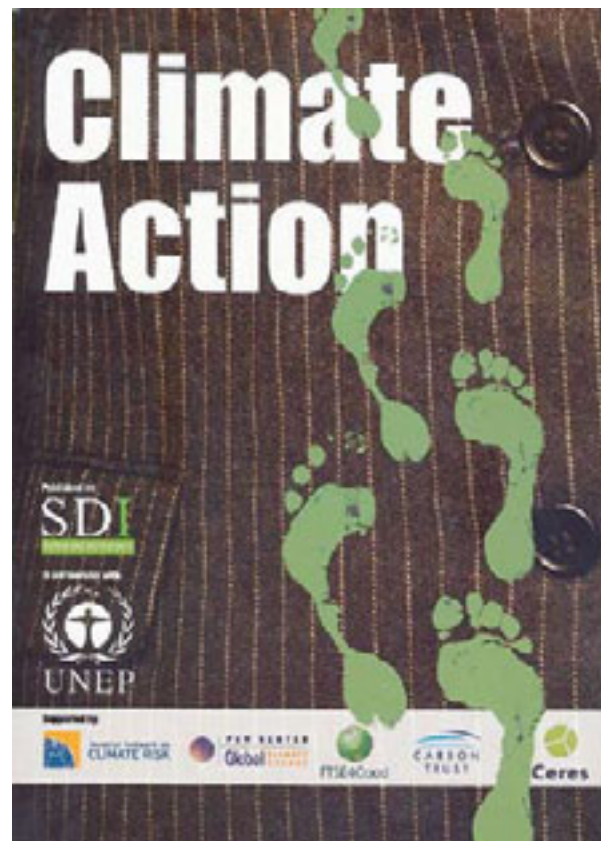
The project will establish six small hydro demonstration projects in at least four of the EATTA member countries with at least one of the investments having a rural electrification component and at least one of the investments being a public-private partnership. Both the studies and the actual installations will serve as training grounds for the entire tea sector in the region. The project is funded by the GEF and will be jointly co-implemented by UNEP and the Africa Development Bank (ADB).

A separate but related initiative is using waste from the sugar industry to generate electricity, fuelling economic and rural growth in an environmentally safer manner. The Cogen

for Africa programme, aims to install at least 60 MW of cogeneration in eastern & southern Africa. This UNEP-GEF regional project involves Ethiopia, Kenya, Malawi, Swaziland, Tanzania, Uganda and Sudan. The project aims to promote biomass-based cogeneration of energy generating power out of agricultural waste. Cogeneration is the simultaneous production of two different forms of energy, heat and power, from a single energy system and source. The key activities of the project include identifying opportunities, appropriate technologies and suppliers; providing technical advice to developers, financiers and investors; and policy guidance.

The project is expected to create a conducive business environment for scaling-up cogeneration investments in eastern and southern Africa, which will in turn provide the market demand for a regional Cogen centre, with associated satellite national Cogen units/focal points. The project was launched in Nairobi at UNEP headquarters in November 2007, and will be jointly co-implemented by UNEP and the ADB.

Climate Action, is an international communication platform established by Sustainable Development International in partnership with UNEP to educate businesses, governments and NGOs about what they can do to reduce their carbon footprint and adapt to the impacts of climate change.



Focus on the GLOBAL ENVIRONMENT FACILITY

UNEP is one of three implementing agencies of the Global Environment Facility (GEF), along with the World Bank and UNDP. The GEF helps developing countries and those with economies in transition to meet the agreed incremental costs of measures designed to achieve global environmental benefits in six focal areas: biological diversity, climate change, international waters, ozone layer depletion, land degradation and persistent organic pollutants. UNEP provides support and the secretariat to the Scientific and Technical Advisory Panel (STAP) of the GEF, corporate support to the GEF—for example in the development of policy—and supports development and implementation of GEF-funded projects.

GEF projects arise from the initiative of, and are carried out by, a variety of organizations, including government agencies, NGOs, universities and research institutes. As a GEF implementing agency, UNEP works with these organizations to develop their project ideas and to oversee the implementation of the work once it gets going, providing managerial, administrative and technical support to the project management staff on the ground.

An important component of almost all UNEP-GEF projects is building capacity to manage the environment in a sound manner. To this end, UNEP also supports implementation of national enabling activities—projects that strengthen the capacity of countries to meet their obligations to the global environmental conventions. UNEP is supporting the implementation of over 500 projects in 152 countries spanning all regions of the world.

Since the GEF was first established in 1991, the UNEP project portfolio has grown from \$50 million in the pilot phase of GEF to \$300 million in the third phase. For the fourth phase of the GEF (GEF-4), which covers the period 2006 to 2010, UNEP is focusing its GEF work on areas in which it has clear comparative strengths. As the only UN organization whose mandate and core business is the environment, UNEP brings unique institutional and professional capacity to the GEF's work.

UNEP-GEF AND CLIMATE CHANGE

Examples of UNEP-GEF projects and activities are featured throughout this report. GEF climate change projects are organized into four areas: (i) removing barriers to energy efficiency and energy conservation; (ii) promoting the adoption of renewable energy by removing barriers and reducing implementation costs; (iii) reducing the long-term costs of low greenhouse gas emitting energy technologies; and (iv) supporting the development of sustainable transport. Two examples of climate change-related UNEP-GEF projects include Integrated Management of Peatlands for Biodiversity and Climate Change and the proposed Global Market Transformation for Efficient Lighting project.

The objective of the proposed UNEP-GEF Global Market Transformation for Efficient Lighting project is to transform the global market toward efficient lighting technologies and accelerate the phase-out of inefficient lighting, thereby reducing global GHG emissions. Currently grid-based lighting consumes 19 per cent of total global electricity production. The GHG emissions associated with lighting are estimated at 1,900 metric tonnes of CO₂ per year, equivalent to 70 per cent of the world's light passenger vehicles. If all incandescent lamps worldwide were to be replaced by energy saving compact fluorescent lamps (CFL), more than 700 Terawatt hours of electricity would be saved per annum, representing an associated reduction of 400 metric tonnes of CO₂. The project, which will work in close partnership with the private sector, is articulated around three main components. The first one focuses on the creation of an adequate institutional and policy framework, comprising a Center of Excellence as well as a stakeholder forum provisionally called the Global Alliance for Efficient Lighting. The second component will address the technical dimension associated with the desired market transformation. Quality and energy efficiency performance norms and standards will be tackled jointly. The third component will support the large-scale diffusion of energy efficient lighting solutions at local, national and regional levels. The project will be implemented in partnership with UNDP.

OTHER UNEP-GEF PRIORITIES

Persistent organic pollutants and sound chemicals management. UNEP sets standards in the chemicals field through its secretariat functions with various international conventions, its technical expertise and its work on environmental analysis, global risk reduction, capacity building and monitoring and evaluation.

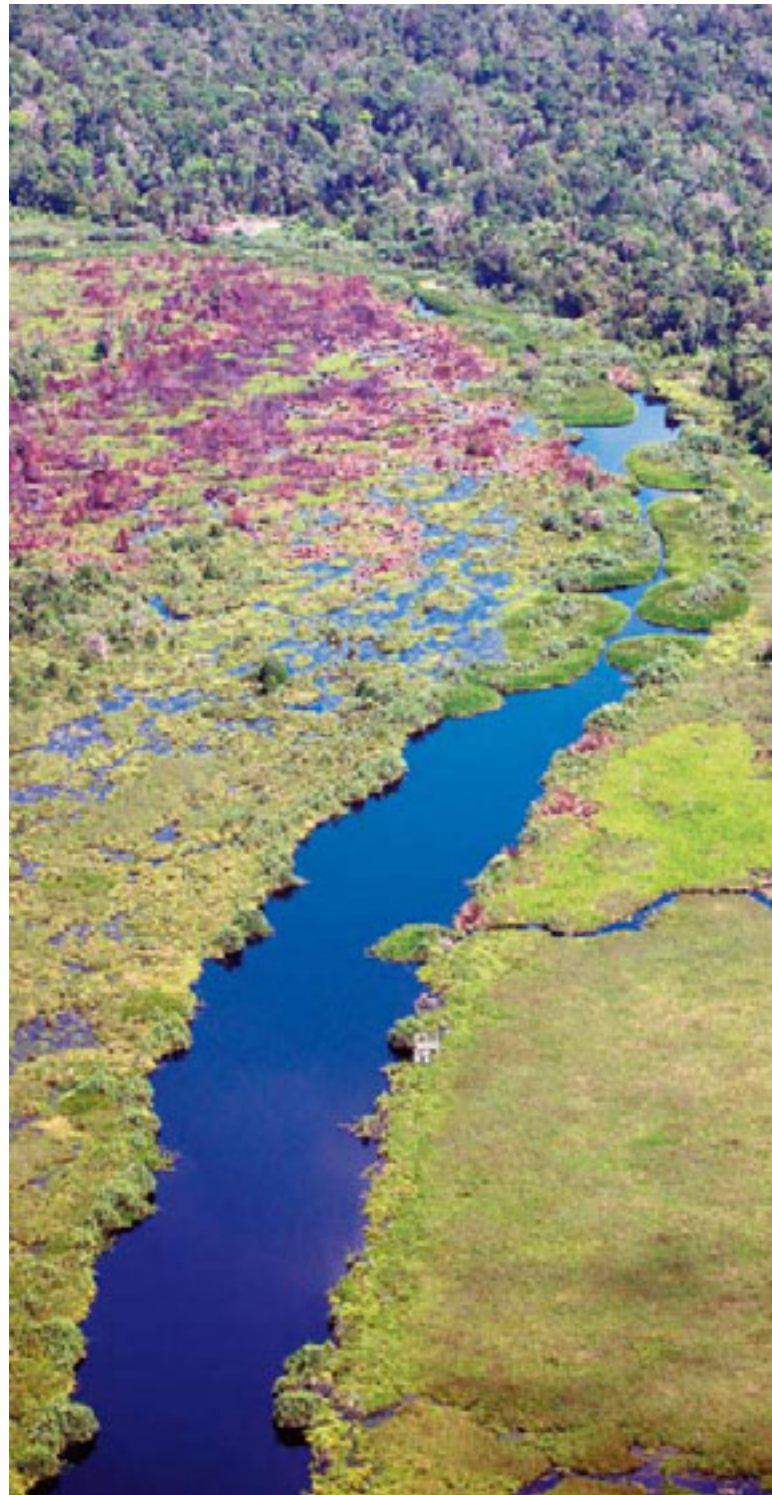
International waters. Examples of UNEP's work on this issue include the Regional Seas Programme, the Global Programme of Action for the Protection of the Marine Environment, and the UNEP freshwater programme.

Biodiversity. UNEP has pioneered innovative approaches and tools, such as the flyway approach to protecting the habitats of migratory species, which has been successful in managing transboundary networks of habitats on which migratory species are dependent, and it has addressed emerging issues such as biosafety and access and benefit sharing. UNEP has expertise in the synthesis, analysis and dissemination of global biodiversity data and knowledge and in technical assistance on ecosystem services work, marine protected areas and invasive species. The Millennium Ecosystem Assessment has developed tools for mainstreaming the ecosystem services approach at national level and addressed knowledge gaps related to valuation of ecosystem services.

Biosafety. UNEP led international efforts in creating technical guidelines, the Cartagena Protocol on Biosafety, the development of the GEF biosafety strategy, the creation of the global Biosafety Clearinghouse, and the GEF project to develop National Biosafety Frameworks for 124 countries.

Land degradation. UNEP contributed significantly to the action plan and UN Convention to Combat Desertification (UNCCD), as well as UNCCD's implementation. It contributed to the World Soil Charter, aids developing countries in formulating national soil policies, and has been instrumental in key assessments of soil degradation.

Ozone. UNEP's OzonAction Information Clearinghouse and networks help to increase awareness and provide information on best practices in dealing with ozone-depleting substances. UNEP provides ongoing assistance to developing countries with support from the Multilateral Fund and to countries with economies in transition (CEITs), with GEF support, to help them to phase out ozone-depleting substances.



A natural peatland in Kampar, Riau, Indonesia, 2 November 2007. The Integrated Management of Peatlands for Biodiversity and Climate Change project investigates techniques for conserving peatland areas to facilitate carbon accumulation while at the same time maintaining or enhancing their biodiversity. The release of large amounts of CO₂ as a result of the peat swamp forest fires of Indonesia is an indication of the tremendous reserve stored by these carbon rich areas. Widely publicized at the UN Climate Change Conference in Bali in December 2007, the project has documented and communicated the role of peatlands as significant carbon stores as well as their importance for biodiversity, and has identified and tested options for their management and restoration to maintain or enhance carbon storage and protect biodiversity. As such the project has had a significant influence on national plans and strategies related to peatlands, biodiversity and climate change. The project is being executed by the Wetlands International and the Global Environment Centre (GEC). © Gallo Images/AFP

ECOSYSTEM MANAGEMENT

Scientific evidence shows that ecosystems are under unprecedented pressure, threatening prospects for sustainable development. While the challenges are daunting, they also provide opportunities for local communities, businesses and government to innovate for the benefit of communities, economies and the global environment. However, in order to secure the environmental conditions for prosperity, stability and equity, timely responses that are proportionate to the scale of the environmental challenges will be required. In creating such responses, governments, the international community, the private sector, civil society and the general public all have an important role to play. As the environmental programme of the United Nations, UNEP is working to articulate, facilitate and support appropriate responses.

UNEP is working to promote a cross-sectoral, integrated approach to ecosystem management to reverse the decline in ecosystem services and improve ecosystem resilience to impacts such as habitat degradation, invasive species, climate change, pollution and overexploitation. In facilitating more effective management of natural systems, UNEP conducts integrated environmental assessments of freshwater, terrestrial, and coastal and marine systems. Perhaps the most comprehensive and important assessment yet was the 2005 Millennium Ecosystem Assessment (MA), which demonstrated more comprehensively than ever before the important links between ecosystems, ecosystem services and human well-being. However, two independent evaluations of the MA—one by the Global Environmental Facility (GEF) and the other by the Environmental Audit Committee of the United Kingdom House of Commons—came to the conclusion that the necessary tools and methodologies for responding to the MA's main findings are still lacking, and urged a follow-up strategy to address this weakness.

In 2007, a UNEP inter-divisional task force developed a strategy to respond to the recommendations of the evaluations. Endorsed



by MA partners including UNDP, the Food and Agriculture Organization (FAO) of the UN, the International Council for Science (ICSU), the UN University (UNU), the Packard Foundation, the UK Department for International Development (DFID), the Swedish International Development Co-operation Agency (SIDA) and the Convention on Biological Diversity (CBD) among others, the strategy focuses on three areas of action. The first involves building and strengthening knowledge on the links between biodiversity,



ecosystem functioning, ecosystem services and human well-being, and developing the tools and methodologies needed to respond to ecosystem services decline and improve human well-being. The second component concentrates on mainstreaming ecosystem services within broader development processes and poverty reduction strategies. The third element concentrates on building awareness and educating stakeholders about ecosystem services and human well-being and how to create synergies from this nexus.

Potatoes and sweet potatoes cultivated at the International Potato Centre, Lima, Peru. Seeds of these tubercules will be sent to the Svalbard Global Seed Vault (SISV) in Norway. The SISV, built in Norway's permafrost, is the world's largest seed bank. It was designed with the intention of guaranteeing the survival of crop seeds from natural disasters, wars or even climate change. The decline in genetic diversity of crop plants has significant implications for sustainable development. UNEP has a number of projects related to assessing, preserving and using crop genetic diversity for sustainable agriculture. © Ernesto Benavides/AFP/Getty Images

The Swedish government, through its SwedBio programme has given UNEP \$1.7 million for the global MA strategy, which was initiated at the first post-MA partners meeting in Stockholm in October 2007. A secretariat hosted by UNEP in Nairobi will oversee the implementation of the global MA follow-up strategy under the supervision of an international advisory group. As part of the UNEP response, the UNEP World Conservation Monitoring Centre (UNEP-WCMC) is developing an *Ecosystem Assessment Manual* incorporating best practices in ecosystem assessment identified through the MA to support assessment practitioners, particularly at sub-global level.

PAYMENTS FOR ECOSYSTEM SERVICES

As UNEP's GEO-4 assessment and the MA point out, approximately 60 per cent of the world's ecosystem services are currently being degraded or used unsustainably. These statistics reflect a number of interrelated issues: insufficient value is being placed at the policy level on ecosystems and services they can provide; institutions to protect ecosystems are often inadequate; and people who live in poverty—and who depend greatly on ecosystem services and are most at risk from ecosystem decline—are often constrained by the exigencies of day-to-day existence from being able to protect or sustainably use their natural resources. Such is the case, for example, of many of the world's subsistence farmers.

One solution that is being pursued to address these linked issues is the concept of payment for ecosystem services; for example, options are being discussed for mechanisms to protect tropical forests as part of a post-Kyoto Protocol accord. However, it is important to recognize that economic instruments such as payments for ecosystem services (PES) are not designed to address issues relating to equity and fairness. The objective of PES is to get the most cost effective solution to an environmental problem. It is therefore necessary to ensure that such payments do not cause social disruptions by creating inequitable outcomes. UNEP has started work on developing some common principles of equity that can be used to evaluate PES across stakeholder groups that use or access ecosystem services. Equity guidelines developed by UNEP are presented in the UN Economic Commission for Europe (UNECE) code of conduct for water-related ecosystem services as well as in a forthcoming manual on how to design a PES strategy.

UNEP and the World Conservation Union (IUCN), in collaboration with the CBD Secretariat, have also been working on scaling-up PES to the international level, with a focus on biodiversity conservation. This UNEP-IUCN work programme aims to address the most salient technical and policy challenges facing this emerging mechanism, through meetings for experts and policy makers, joint publications and capacity building activities. The goal is to take a first step towards an international payments system, comparable or linked to carbon trading, but with a clear focus on the conservation of terrestrial and marine ecosystems that host significant biodiversity and related services. Developing such a policy tool also contributes to UNEP's broader efforts to achieve sustainable ecosystem management.

During the second meeting of the CBD Working Group on Review of the Implementation of the Convention, in July 2007, in Paris, France, UNEP and IUCN co-hosted a side event on payments for avoided deforestation to enable CBD Parties to better understand the opportunities and challenges associated with avoided deforestation in the context of international payments for ecosystem services and to explore the potential for avoided deforestation to include other ecosystem services—with a special focus on biodiversity protection—in voluntary and regulated carbon markets. In September 2007 a research paper on payments for avoided deforestation was presented at the ninth Annual BioEcon Conference on Economics and Institutions for Biodiversity Conservation at King's College, Cambridge, UK. This research paper has now been submitted for peer review to an international journal.

In Kenya, UNEP has initiated a project to reduce greenhouse gas (GHG) emissions from deforestation and land degradation in Kenya (REDD). As well as reducing GHG emissions, the project aims to reduce poverty and maintain water supplies in rivers leading into the world famous Masai Mara National Reserve, in Kenya, and the Serengeti National Park in Tanzania. The project is being implemented in collaboration with Kenyan government bodies and NGOs, with funding from the Government of Spain. It will provide a management plan and alternative livelihoods and income sources for communities from payment for ecosystem services from carbon trade and tourism.



UNEP Deputy Executive Director, Shafiq Kakakhel, at the 14th Meeting of the Conference of Parties to the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) which met in The Hague, Netherlands, in June 2007. The meeting adopted over 100 formal decisions that strengthen or fine-tune the regulations governing the international wildlife trade. Extensive discussions on marine species led to the inclusion in CITES of the European eel, which is a popular food in many countries. The eel joins a growing list of high-value fish and other marine species whose trade is managed through the CITES permit system to ensure that stocks are not depleted. This trend reflects growing concern about the accelerating decline of the world's oceans and fisheries. A new timber species has also been added to CITES. The trade in Brazilwood will now require CITES permits, although exports of bows for musical instruments are exempted. In addition to revising the rules for specific species, the conference reviewed the progress being made by conservation programmes for the tiger, the leopard, the Saiga antelope, the black rhinoceros, the Hawksbill turtle, bigleaf mahogany, sturgeons, sharks and many other CITES-listed species. CITES is one of three biodiversity-related conventions administered by UNEP, the other two being the Convention on Biological Diversity and the Convention on Migratory Species. © IISD

BIODIVERSITY, TRADE AND ENVIRONMENT

A number of Multilateral Environmental Agreements (MEAs), including CITES and the CBD's Biosafety Protocol are focused, either wholly or in part, on trade issues. The trade-related measures incorporated in these agreements have proven to be essential to their effective implementation. Since the early 1990s, clarifying the relationship between trade rules (first GATT, and then WTO) and MEAs containing trade-related provisions has been at the top of the trade and environment agenda. Throughout this period, UNEP has been instrumental in raising the profile of these issues and facilitating information exchange and cooperation between the trade and environment regimes. This work contributed significantly to the political momentum and ultimate decision to include clarification of this issue in the WTO Doha negotiations. In 2007, UNEP continued its work on this issue and supported a wide range

of activities at the interface of trade and MEA implementation, including country projects, technical assistance and capacity building, and research.

At the country level, a four-year initiative launched in 2005 in collaboration with the CBD Secretariat, is assessing agricultural trade liberalization and biodiversity impacts in Jamaica, Cameroon, Mauritius, Madagascar, Uganda and Papua New Guinea. A *Reference Manual on Incorporating Biodiversity Considerations in Agriculture Trade Policy Assessments* was developed jointly by the UNEP Division of Technology, Industry and Economics (UNEP-DTIE) and UNEP-WCMC, and a mid-term review meeting in November 2007 in Geneva, Switzerland, provided an opportunity for the country teams to share experiences and intermediate results. Another two-year initiative is being jointly implemented by the UNEP-UNCTAD Capacity Building Task Force on

Trade, Environment and Development (CBTF), the CITES Secretariat, and the Geneva-based Graduate Institute of Development Studies. The Reviewing National Wildlife Trade Policies initiative was launched in January 2006 to support CITES Parties to review their national policies regarding the use of and trade in specimens of CITES-listed species. A draft Wildlife Trade Policy Review Framework was developed during the first phase of the initiative. In 2007, the initiative entered its second phase with the launch of four pilot projects in Madagascar, Nicaragua, Vietnam and Uganda.

UNEP is also working with the private sector to outline how the degradation of ecosystem services translates into risks for businesses and their financial backers and to define a role for financial sector engagement in biodiversity and ecosystem services. For example, the Natural Value Initiative is working with companies with agricultural supply chains—food and drink producers, processors, and retailers—and those with operations in emerging economies, such as China, South Africa and Brazil. A joint project of the UNEP Finance Initiative (FI), Fauna & Flora International and FGV (a Brazilian business school), it aims to at raise awareness within the finance sector of the business case for managing biodiversity and the risks associated with

Biodiversity and ecosystems services, bloom or bust? tackles the need for a business case for financial institutions to address biodiversity-related risk, explores areas of best management practices in this field, and identifies effective tools and guidelines available to financial institutions.



mismanagement, along with an understanding of appropriate governance procedures, policy and strategy, management tools and monitoring and assurance procedures. In this regard, UNEP FI convened two workshops in London, UK, and Sao Paulo, Brazil, to extract examples of best practice for the development of a benchmarking tool for the finance sector to enable a better understanding of biodiversity and ecosystem services impacts and risks. The final benchmark report is scheduled for completion in late 2008.

THE 2010 BIODIVERSITY TARGET

According to GEO-4, current biodiversity changes are the fastest in human history. Species are becoming extinct a hundred times faster than the rate shown in the fossil record. Of the major vertebrate groups that have been assessed comprehensively, over 30 per cent of amphibians, 23 per cent of mammals and 12 per cent of birds are threatened. The goal of the UNEP-GEF project 'Building the Partnership to Track Progress at the Global Level in Achieving the 2010 Biodiversity Target' is to reduce the rate of biodiversity loss at the global level through supporting improved and better informed decision making for conservation of global biological diversity by governments and other stakeholders.

The foundation of the project is the 2010 Biodiversity Indicators Partnership, launched during the second meeting of the CBD Working Group on Review of the Implementation of the Convention. The project is being implemented with GEF support by UNEP-WCMC working closely with the CBD Secretariat. It will ensure the coordinated delivery of the full suite of selected global biodiversity indicators that are being developed by a wide range of organizations. It will deliver products and analyses based on these indicators to a range of users, including Parties to the biodiversity-related conventions, to support policy intervention and assess progress towards the 2010 biodiversity targets. Guidelines will be developed to promote and facilitate the development of 2010 biodiversity indicators at the national and regional level, and enable stronger links between global and national and regional indicator development processes. Guidelines will also be developed to enhance the use of global biodiversity indicators in support of national and regional policy.

SUSTAINABLE AGRICULTURE

An aspect of biodiversity loss that is perhaps less highlighted than the decline in wild species, but has significant implications for sustainable development, is the decline in genetic diversity of crop plants. The UNEP-GEF global project 'Conservation and Use of Crop Genetic Diversity to Control Pests and Diseases in Support of Sustainable Agriculture' has been designed to provide farmers and National Agricultural Research System researchers with tools and practices to manage local crop genetic diversity, thereby expanding farmers' options to combat pest and disease, increasing food security, conserving genetic diversity, and improving ecosystem health. The project will integrate existing farmer knowledge, belief and practices with advances in the analysis of crop-pest/disease interactions. This project is unique in that it concentrates on the management of the local crop cultivars themselves as the key resource, making use of the intra-specific diversity among cultivars maintained by farmers.

In Ethiopia, Kenya and Mali, a UNEP-GEF project is increasing understanding of the relationships between certain grasses and insects; promoting the practical application of this knowledge. The immediate objective of the Conservation of Gramineae and Associated Arthropods for Sustainable Agricultural Development in Africa project is to identify and implement conservation and management

measures necessary to prevent loss of biodiversity of certain Gramineae and their associated insects, and to conserve these valuable genetic resources in and around agro ecosystems in Ethiopia, Kenya and Mali for self-regulatory pest management and sustainable agriculture. The project has accomplished many of its goals. A brochure on wild grasses was translated into four local Malian languages, printed and distributed throughout the country. In Kenya, farmers' field days and a joint meeting of all participating farmers and regional agricultural officers were held, allowing farmers to share their experiences with integrating wild grasses into farm production. Radio and television programmes helped spread a message of grass conservation by reporting on the development of weaving cooperatives, and by showing the benefits of Kenyans from several different ethnic groups working together toward a common goal; setting a real example of nation building.

Another project, implemented in Benin, Burkina Faso, Ghana, Kenya, Malawi, Mali, Uganda, Zimbabwe, looked at ways to improve the effectiveness of traditional farming systems for conservation of biodiversity of local and global importance. Among the immediate results of the Community-based Management of On-farm Plant Genetic Resources in Arid and Semi-arid Areas of Sub-Saharan Africa project are the readiness of the farmers to maintain best practices or even adopt or adapt new ones to improve traditional farming systems, and their understanding of the important role they play in the survival of the landraces.

A three-year assessment process entitled the International Assessment of Agricultural Science and Technology for Development (IAASTD) co-sponsored by FAO, GEF, UNDP, UNEP, UNESCO, the World Bank and WHO was also completed in 2007. The IAASTD comprises of six assessments—one global assessment and five sub-global assessments covering sub-Saharan Africa, Central and West Asia and North Africa, East and South Asia and the Pacific, Latin America and the Caribbean, and North America and Europe. A short Summary for Decision Makers (SDM) was produced for each assessment report, as well as a Synthesis Report which summarizes information from the global and five sub-global assessment reports. The reports address the role of agricultural knowledge, science and technology in reducing hunger and poverty, improving rural livelihoods, and facilitating equitable, environmentally, socially and economically sustainable development. The findings of the IAASTD will be submitted for final approval, adoption and acceptance by governments in 2008.



International Assessment of Agricultural Science and Technology for Development

BIOSAFETY

The growing use of and demand for living modified organisms (LMOs), and the diversity of both public opinion and national and international policy related to their use, led to the adoption in 2002 of the CBD Cartagena Protocol on Biosafety. UNEP's Biosafety Programme involves three related sub-projects: the Global Project for Development of National Biosafety Frameworks; the Project for Building Capacity for Effective Participation in the Biosafety Clearing-House (BCH); and Demonstration Projects for Implementation of National Biosafety Frameworks. Together these projects assist countries to successfully implement the Cartagena Protocol.

The Global Project for Development of National Biosafety Frameworks helps to prepare countries for the entry into force of the Cartagena Protocol by preparing National Biosafety Frameworks (NBFs). As of December 2007, 99 out of 126 countries had drafted or finalized their NBFs (all posted on the biosafety website www.unep.ch/biosafety). The NBFs have helped countries: conduct surveys and inventories of current biosafety practices, existing policy/legal frameworks and available expertise; harmonize legal and regulatory instruments; strengthen risk assessment and management capability; and improve public awareness and mechanisms for public participation. The project has developed support toolkits for each of the major phases in the development of an NBF. They are available in four UN languages and can be downloaded from the project website.

'Building Capacity for Effective Participation in the Biosafety Clearing-House' (BCH) is essential for the information exchange that is required for decision-making and monitoring of transboundary movements of LMOs. A UNEP-GEF project on the Biosafety Clearing-House helps to build capacity in up to 139 countries to use and access the Biosafety Clearing-House of the Cartagena Protocol. The BCH Project will strengthen capacity by providing training to key stakeholders and also via an equipment component, which will provide computer hardware and software for data storage and exchange. The UNEP-GEF Biosafety Unit has established a pool of 40 trained BCH Regional Advisors to provide advice and support to countries. Participating countries will be able to

select from these trained BCH Regional Advisors to visit and support their national projects. UNEP will be responsible for training the Advisors in specific materials and ensuring the high quality of support and materials provided. A large number of training workshops and materials have been developed, including interactive training modules, case studies, help sections for the central portal of the BCH, discussion points, quiz questions etc., and all materials are available to the public through www.unep.ch/biosafety.

The Demonstration Projects for Implementation of National Biosafety Frameworks aim to assist countries to comply with their obligations as Parties to the Cartagena Protocol and to address biosafety according to national needs and priorities in an inclusive and consultative manner. Being country-driven and nationally relevant, these projects help build national capacity in the implementation of a robust and operational NBF, establish institutional capacity to handle requests and make decisions on the movement of LMOs across national borders as well as their release into the environment. They also enhance national monitoring and enforcement systems and increase public awareness and participation in decision making on LMOs and related matters.

UNEP-GEF currently manages eight GEF-funded Demonstration Projects in Bulgaria, Cameroon, China, Cuba, Kenya, Namibia, Poland and Uganda, which help the countries to develop national biosafety strategies and to plan new projects on building capacity for the safe management of GMOs, LMOs and other organisms. The Namibian project, for example, has succeeded in obtaining Government approval for the Biosafety Bill. The Biosafety Act (2006) marks a significant milestone in the legal history of Namibia, and through its enactment, the institutional structures for biosafety management will be established as well as sustained by the national budget.

The above eight demonstration projects have provided important lessons that will be invaluable in developing the soon-to-be-published *Guidance Towards Implementation of National Biosafety Frameworks: Lessons Learned from the UNEP Demonstration Projects*. UNEP has also been requested by the GEF Secretariat to lead in the preparation of a programmatic document for biosafety. Working with other Implementation

Agencies, such as FAO, UNIDO and the World Bank, the document will be submitted for consideration by the GEF Council in April 2008.

MIGRATORY SPECIES

Migratory birds, fish and mammals are among the most vulnerable of species. They also often serve as an indicator of ecosystem health. In 2007, the Convention for Migratory Species (CMS) secretariat launched a global 'Year of the Dolphin' campaign in cooperation with UNEP, the CMS specialized Agreements for Cetacean Conservation in the Mediterranean and Black Seas (ACCOBAMS) and the Baltic and North Seas (ASCOBANS), the Whale and Dolphin Conservation Society (WDCS) and the tourism company TUI to raise awareness of the threats to dolphins and actions needed to conserve them. Events and other projects were organized in more than 30 countries by government bodies, NGOs and individuals and the private sector on virtually every continent from the United States to Australia and New Zealand.

On a more regional scale, CMS has created the framework for the conservation of Cetaceans in the Eastern Atlantic Region at the WATCH (West African Talks on Cetaceans and Their Habitats) meeting held in October in the Canary Islands, Spain. The agreement area stretches from Morocco to South Africa, and covers the waters rich in whales around the Macaronesia islands in the Eastern Atlantic, five archipelagos of volcanic islands that belong to Portugal, Spain and Cape Verde. After the conclusion of the agreement on cetaceans in the South Pacific in September 2006, this is another important step forward to conserve small whales and their habitats across an extended range. The objective is to conclude the new agreement in 2008 with its twin action plans for small whales and for manatees.

CMS was also involved in the successful conclusion of a regional agreement on the conservation of dugongs in the Indian Ocean and on the Eastern Atlantic populations of the Mediterranean monk seal. This pinniped is one of the most threatened marine mammals in the world and is listed on the Appendices of the Convention. Only approximately 500 Mediterranean monk seals remain in the wild. In cooperation with UNEP and the Ramsar Convention, CMS also organized the first workshop for decision makers

in Latin America. An agreement on grassland birds in South America was drawn up, the first for this region.

THE CASE OF THE SIBERIAN CRANE

Due to the destruction and disturbance of key wetlands throughout Asia, numerous migratory water birds are in serious decline. The situation is particularly precarious for the critically endangered Siberian crane, which is entirely dependant on a series of wetlands along a number of transboundary flyways in China, Iran, the Russian Federation and Kazakhstan that stretches over thousands of kilometres. Other globally threatened, rare and economically important species also depend on the same wetlands, leading to a need for urgent conservation measures and international collaboration.

A UNEP-DGEF project which began in 2003 has assisted the creation, expansion or upgrading of protected areas in all four countries, which are designated Ramsar Sites and flyway network sites. It has been particularly active in the field of integrated ecosystem management through working with farmers, government and the private sector on regional water management agreements, hunting agreements and community-participatory approaches. At the regional level, the project has supported the formulation and implementation of biennial conservation plans under CMS guidance. This included strengthening capacity for flyway network coordination in East Asia (in China and the Russian Federation), and the establishment of a new site network in West/Central Asia under CMS. It has also contributed significantly to the implementation of the Ramsar Convention in China, Iran and Kazakhstan through site designations and wider support for the conservation of wetlands and water birds.

The project is a prime example of the UNEP-GEF-sponsored biodiversity portfolio on establishing links between work with global conventions, regional country cooperation, and on-site investments that generate 'on-the-ground' improvements for conserving globally significant biodiversity. Its integrated ecosystem management approaches—specifically water management—benefit local resource users, strengthen local and central governments, as well as production sectors, and help maintain minimum required conservation services. It has shown considerable

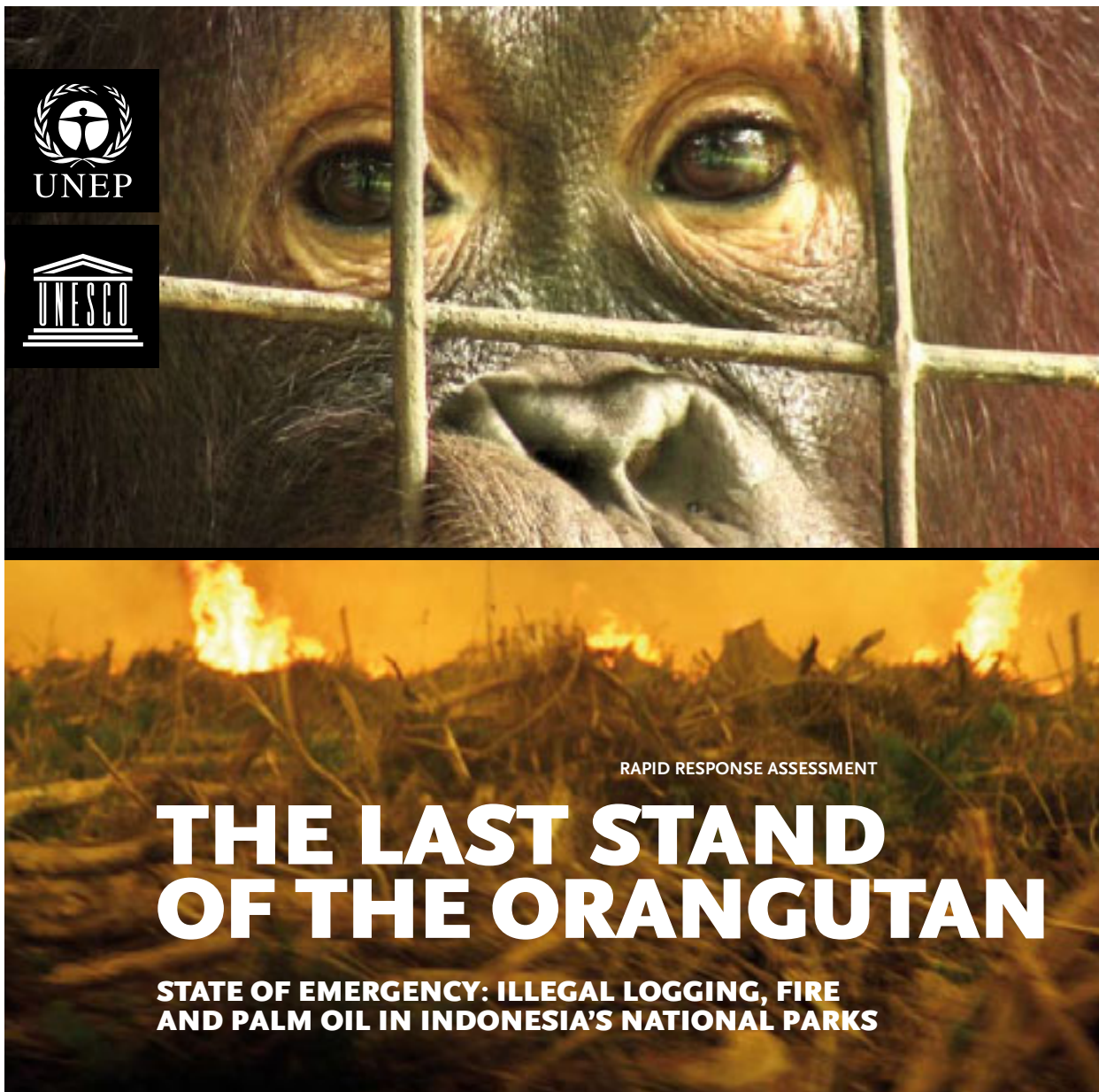
Ecosystem management

innovation in expanding 'Crane Day' awareness activities to over 60 sites in nine countries and is responding positively to the emerging threat of avian influenza by facilitating information flow and providing technical advice.

The threat of an avian influenza pandemic has highlighted the important link between ecosystem health and human health. For example, disappearing wetlands often drive migratory birds into close proximity with domestic fowl which can pass on infections which, in turn, are then transported by wild fowl to other locations. Highly pathogenic avian influenza H5N1 has

continued to cause outbreaks across Asia, Europe and Africa during 2007. In response to the threat, CMS is coordinating a Scientific Task Force on Avian Influenza and Wild Birds. The Task Force, now composed of 14 organizations and intergovernmental bodies, held a successful workshop in Aviemore, Scotland, in June to discuss practical lessons learned and highlight priority areas for future work. The results of the workshop are available on the Task Force's website (www.aiweb.info), which is also used to present the latest evidence-based information on avian influenza to inform policy makers and others in their responses to the disease.

Last Stand of the Orangutan, State of Emergency: Illegal Logging, Fire and Palm Oil in Indonesia's National Parks, used the latest satellite imagery and data to assess changes in forests and orangutan habitat. The report was cited by the UK House of Commons Environmental Audit Committee report on biofuel.



CONSERVING GREAT APES

A highlight of the year was the conclusion of a new agreement concerning the conservation of gorillas in Central and West Africa with an action plan covering education, research and forest protection. This legally-binding agreement will support an urgent conservation and sustainable development programme under the Great Apes Survival Project Partnership (GRASP), an alliance of over 30 governments, UN agencies and numerous voluntary bodies. The action plan covers education, research and forest protection.

The CMS Secretariat will work in close co-operation with GRASP to support the Gorilla Agreement. At the request of the Range States, the new agreement also links gorilla conservation explicitly to the objectives of the Congo Basin Forest Partnership (CBFP). Together, these initiatives provide the opportunity to simultaneously achieve environmental and development objectives. GRASP is mobilizing a grand alliance of Governments and civil society under the new 'Plan It for the Apes' programme, the CBFP is mobilizing resources for forests and the millions of people who depend on them, and examples from Uganda and Rwanda are already showing how gorilla tourism can help local communities to become self-sufficient. A new report from UNEP about responding to the environmental causes and consequences of the current conflict in the Democratic Republic of Congo (*see Chapter 6*) also highlights how clean energy provision can reduce demand for fuel from forests, protecting gorillas and the many other endangered animals and plants that live in them, and contributing to the conservation of existing forests that is an essential component of creating a carbon-neutral planet.

Earlier in the year, the spotlight was placed on the situation facing orangutans and their tropical forest habitat in Indonesia in a report released in February 2007. *Last Stand of the Orangutan, State of Emergency: Illegal Logging, Fire and Palm Oil in Indonesia's National Parks*, published with funding from the United Kingdom by Grid-Arendal, UNEP-WCMC and GRASP, in close collaboration with the government of Indonesia, used the latest satellite imagery and data to assess changes in forests and orangutan habitat. Illegal logging, fires and plantations of crops such as palm oil, the results show, are now intruding

extensively into Indonesia's national parks, one of the last safe havens for orangutans, as well as numerous other endangered species. It is not impoverished farmers driving this change, the report states, but rather what appears to be well-organized companies with heavy machinery and strong international links to the global markets. Since the report was released, 70,000 cubic metres of illegally harvested timber were seized in Indonesia in two separate events and 12 people were arrested for suspected involvement in illegal logging activities in May 2007.

In the five months following the launch there were more than 1,300 direct news articles mentioning the report, including in all the major global TV news channels and newspapers, and over 28,000 web sites listing the exact title of the report. Additionally, links to the report have been prominently displayed on the homepage of many major orangutan conservation NGOs. The report was cited by the UK House of Commons Environmental Audit Committee report on biofuel. The committee advises caution, noting that there may not be real climate benefits in some cases and that a biofuels quota at this time for Europe and the UK may not deliver the anticipated benefits.

RETHINKING DESERTIFICATION

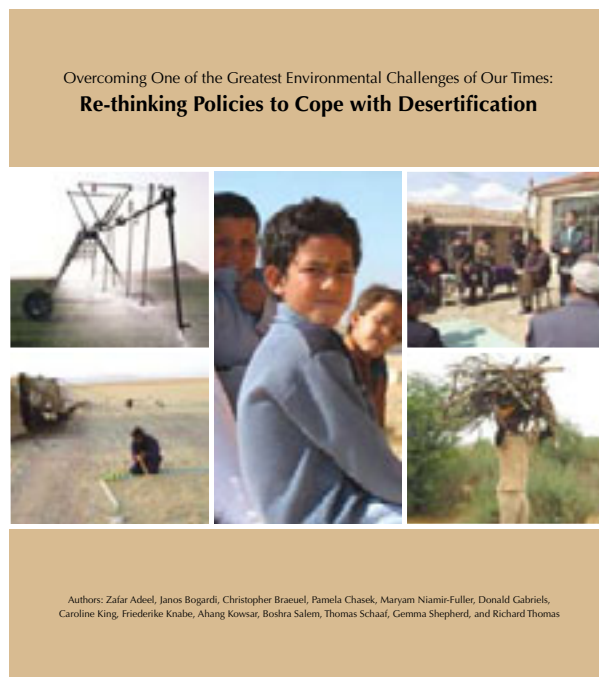
GEO-4 and the Millennium Ecosystem Assessment rank land degradation as one of the world's greatest environmental challenges, along with climate change and biodiversity loss, threatening environmental security, destabilizing societies, endangering food security and increasing poverty. Drylands are particularly vulnerable ecosystems, yet two billion people live in them, 90 per cent of whom are in developing countries. Land degradation or desertification over large areas of drylands affects between 100 and 200 million people. It is the overarching environmental issue of concern in Africa.

To help bring global public attention to this threat, UNEP contributed to the policy brief *Re-thinking Policies to Cope with Desertification*, co-published with the United Nations University and other UN and international organizations. It is based on the outcomes of the Joint International Conference: 'Desertification and the International Policy Imperative', held in Algiers, Algeria, in December, 2006, as one of the activities to commemorate the International Year of Deserts and Desertification.

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The report warns that over the next ten years, 50 million people could be displaced by desertification, particularly in sub-Saharan Africa and South Asia. People displaced by desertification put new strains on natural resources and societies and threaten international instability. It is therefore imperative that effective policies and sustainable agricultural practices are put in place now in order to reverse the decline of drylands, and to meet the Millennium Development Goals (MDGs) by 2015. The report recommends that foremost among these are measures that protect soils from erosion, salinization and other forms of degradation. Proper land use management policies are needed to protect existing vegetative cover from overgrazing, over-exploitation, and unsustainable irrigation practices. Carbon trading approaches can provide one institutional mechanism for capitalizing on opportunities for carbon sequestration. Although vegetative cover in most drylands is comparatively sparse, their large surface area (more than 40 per cent of the global land area) provides immense opportunities. Creating viable livelihood alternatives for dryland populations and directly linking these to national strategies to combat desertification and poverty reduction can further strengthen policies for sustainable land management.

UNEP contributes regularly to reports and policy briefs with partner organizations for a variety of sustainable development fora.



Thirty years after the UN Conference on Desertification (UNCOD), which took place in Nairobi in 1977, and some ten years after the ratification of the UN Convention to Combat Desertification (UNCCD) in 1996, UNEP participated in an international workshop to review progress and challenges in monitoring, modelling and forecasting of climate change and desertification, in Wengen, Switzerland, in September 2007. The workshop, which engaged some 50 scientists and experts in various fields, was sponsored by the University of Geneva together with the Joint Research Centre of the European Commission, the World Climate Research Programme, and the Group on Earth Observations. UNEP emphasized the need for scientific understanding of the interactions between climate change and desertification to highlight opportunities for synergies among preventive, adaptation and mitigation strategies.

UNEP also called for more research on the climate management benefits of avoided desertification. Among the workshop recommendations was the need to address the current severe limitations of data gathering activities, with a suggestion to create a Global Observing System to organize and harmonize data acquisition and analysis in



dryland regions. UNEP also participated in the International Forum on Soils, Society and Global Change, held in Selfoss, Iceland, 31 August to 4 September 2007, hosted by the Soil Conservation Service of Iceland to celebrate its centenary. The Forum endorsed a Programme of Action for improved stewardship of the soil to prevent, mitigate and adapt to environmental and social changes. The participants called on the IPCC to prepare a special report on land degradation and climate change, and recommended development of a binding international instrument for the protection and sustainable use of soils.

REVERSING DRYLAND DEGRADATION

To further help promote good land care and ecosystem management in drylands, UNEP continued implementation of the project 'An Ecosystem Approach to Restoring West African Drylands and Improving Rural Livelihoods through Agroforestry-based Land Management Interventions', funded by Norway and conducted in cooperation with the World Agroforestry Centre (ICRAF), the University of Florida, and the governments of Burkina Faso, Mali, Mauritania, Niger and Senegal. The project is developing the capacity of national scientists, development workers and farmer organizations in targeting, implementing and monitoring sustainable land management practices.

Also in Africa, the UNEP-GEF Dryland Livestock Wildlife Environment Interface project is working to mainstream biodiversity conservation and management of livestock resources at the interface between mixed production ecosystems and protected areas in Africa. The project promotes sustainable land use management systems for livestock and wildlife to improve community livelihoods, biodiversity conservation and reduce land degradation. In Kenya and Burkina Faso, the project has been supporting community members and leaders of conservancies through a series of workshops and training on community-based resource management plans, settlement and grazing, community-based by-laws, reseeding of degraded land, financial management, understanding root causes of existing conflicts in the project area, developing and implementing conflict resolution mechanisms, bee keeping and poultry production, and networking and lobbying. The project also reduced conflicts over natural resources between the pastoralists and

settled farmers along the negotiated international transhumance routes crossing Burkina Faso, Togo and Benin.

UNEP also continued partnership activities with FAO under the Global Land Cover Network (GLCN), to foster global collaboration to develop a fully harmonized approach to making reliable and comparable land cover and land cover change data accessible to local, national and international initiatives. Land cover assessment and monitoring are essential for the sustainable management of natural resources, environmental protection, food security and humanitarian programmes, as well as core data for monitoring and modelling.

Since its inception in 2004, GLCN has facilitated the development of a number of applications to ensure harmonization and compatibility between local, national and regional products. One of the main applications is the Land Cover Classification System (LCCS), a scale independent method of classifying land cover. The approach supports all types of land cover monitoring and enables a comparison of land cover classes regardless of data source, sector or country. LCCS is being adopted at the national, regional and global level and is now undergoing the process to become a standard of the International Organization for Standardization (ISO). National and regional workshops to raise awareness and provide training in the use of LCCS were held in Nepal and Turkey during 2007, drawing participants from over a dozen countries.

PROTECTING EUROPE'S BIODIVERSITY

UNEP plays a supporting role in the UNECE-led Environment for Europe process. Every four years the region's environment ministers meet to review the state and management of Europe's environment. The sixth Environment for Europe conference took place in Belgrade, Serbia in October 2007. UNEP inputs to the Conference focused on environment and security, sustainable consumption and production and biodiversity, and included contributions to the European Environment Agency (EEA) state of the environment report *Europe's Environment: the Fourth Assessment (Belgrade Assessment)*. As a companion product to the pan-European environmental assessment, UNEP's Division of Early Warning and Assessment (DEWA) and GRID-Europe also prepared an EECCA Core Set

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of Indicators Compendium for the 12 countries of Eastern Europe, the Caucasus and Central Asia. The Compendium was also incorporated in the EEA's online Indicator Management Service for EECCA.

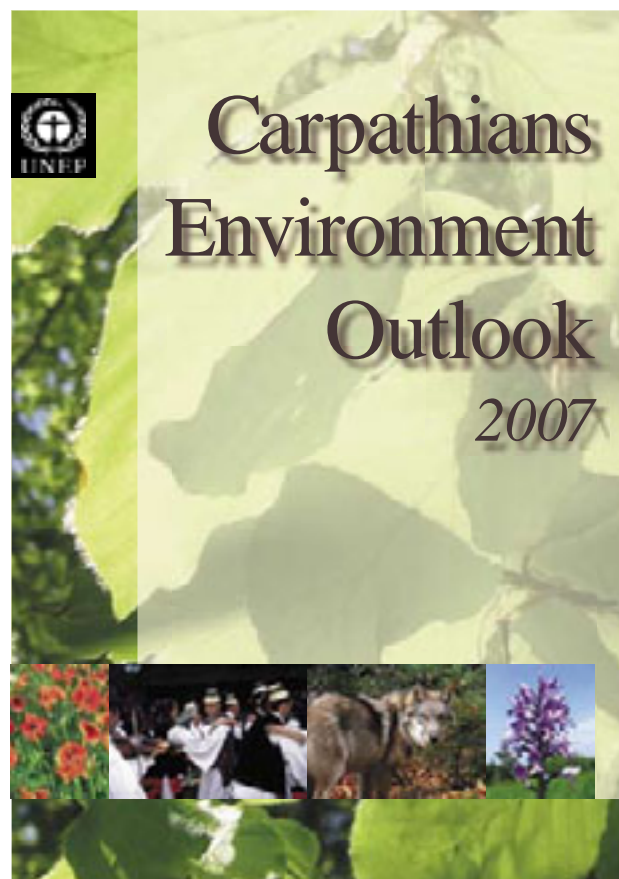
The Pan-European Biological and Landscape Diversity Strategy (PEBLDS), which is coordinated by the UNEP Regional Office for Europe (ROE) and for which ROE ensures the Secretariat jointly with the Council of Europe, was launched in 1994 to monitor and reduce the degradation and loss of biodiversity resources in Europe, and provides a framework to promote a consistent approach and common objectives for national and regional action to implement the CBD in the pan-European region. On behalf of the PEBLDS Joint Secretariat, UNEP organized a Biodiversity Stakeholders' Roundtable as a special session of the Belgrade Conference with European ECO-Forum (a network of 200 environmental citizens' organizations within the Environment for Europe process), which

was co-chaired by the Minister of Environment of Norway and the Executive Director of the European Centre for Nature Conservation (ECNC). Furthermore, as part of the Countdown 2010 Initiative, UNEP submitted the *Report on the Status of Implementation of the Kiev Resolution on Biodiversity: Achievements, Challenges and Future Action to Reach the 2010 Pan-European Biodiversity Target* in collaboration with IUCN, the Council of Europe, the European Environment Agency, WWF and the European ECO-Forum

THE PARTNERSHIP FOR MOUNTAINS

The Mountain Partnership, launched at the World Summit for Sustainable Development (WSSD) in 2002, is a broad alliance of countries, intergovernmental organizations and major groups working towards improving the lives of mountain people and protecting mountain environments around the world. Its Secretariat is hosted by the FAO in Rome, with the participation of UNEP. In the new setup of the Mountain Partnership

The Carpathians Environment Outlook report is a sub-regional examination and synthesis of the environmental situation in the greater Carpathian region, that includes parts of seven countries (the Czech Republic, Hungary, Poland, Romania, Serbia, the Slovak Republic and Ukraine), focusing on environment and socio-economic status and trends, current policy responses in the region, emerging environmental issues, alternative policy measures and development patterns into the future, as well as policy recommendations.



Secretariat (MPS), which is supported by Italy and Switzerland, UNEP is the Environmental Reference Centre and it helps ensure adequate attention to environmental concerns in MPS strategic planning and activities. In South Eastern Europe, the Mountain Partnership is supporting significant steps towards closer cooperation. UNEP was requested by the Ministry of the Environment and Physical Planning of the Former Yugoslav Republic of Macedonia to support and service a regional cooperation process to address the need for sustainable mountain development in the sub-region. Further east, UNEP is facilitating consultations to explore the possibility of a high-level meeting at which stock can be taken of the existing initiatives and programmes for the protection of the mountain ecosystems in the Caucasus.

UNEP also provides the Interim Secretariat of the Framework Convention for the Protection and Sustainable Development of the Carpathians. UNEP has completed an extended assessment of the Carpathians and launched the first *Carpathian Environmental Outlook* (KEO) in 2007 at the Belgrade Environment for Europe Conference. The KEO project was initiated in early 2004 by UNEP's Division of Early Warning and Assessment (DEWA)/GRID-Geneva and ROE. The sub-regional KEO assessment has been implemented in a bottom-up, collaborative and consultative process, similar to UNEP's Global Environment Outlook (GEO) global level assessments (*see Focus on Assessment*). The report provides greater knowledge about the unique ecology and related environmental and human problems of the Carpathians, along with an operational network of experts within/among the seven Carpathian countries for environmental reporting purposes, and better information for environmental decision making in this unique region.

Also within the framework of the global Mountain Partnership, and in close consultation with its partners in FAO and the Mountain Forum, which facilitates global communication and information exchange on mountain issues, UNEP is sharing its experience on the Carpathian Convention with other mountain regions such as the Andes, and the Hindu Kush-Karakoram-Himalaya (including cooperation with the International Centre for Integrated Mountain Development ICIMOD). Innovative regional and local

development approaches are now implemented in the Carpathians with EU structural funds supporting the Carpathian Mountain Range cooperation, which can provide food for thought and experience sharing with other mountain regions, such as in South Eastern Europe, the Caucasus or Central Asia. The international Mountain Partnership offers an ideal platform for interlinking the growing 'European' experience with other mountain regions in the world.

In the Pamir region of Central Asia, UNEP-GEF is working to address the interlinked problems of land degradation and poverty within one of Central Asia's critical mountain 'water towers' and biodiversity hotspots. The transboundary Sustainable Land Management in the High Pamir and Pamir Alai Mountains initiative seeks to improve the technological, institutional, policy and legislative environment required for enabling mountain communities to take primary responsibility for the productive and sustainable management of their local ecosystem resources. In addition to the direct global environmental benefits that will be accrued in the Pamir-Alai mountains, the development of replicable generic guidelines that can be used to address the problems of land degradation in similar mountain environments will be an added benefit of the project.

FROM SUMMIT TO SEA

The water that flows from the world's mountains and forests, combined with underground reservoirs, some of which date back to before human history, provide the sum total of the planet's freshwater resources on which all life, including our own, ultimately depends. Population increase, unsustainable water withdrawals for irrigation and industries, compounded by climate change, makes it critical to improve current ways of managing freshwater resources. Since its formation in 1972, UNEP has been promoting the sustainable management of water resources from the environmental perspective. UNEP's Water Policy and Strategy was updated and adopted at the 24th Session of the UNEP Governing Council in February 2007 to incorporate decisions from several fora, such as the 12th and 13th Commission on Sustainable Development which formed the global policy review cycle for water. The Water Policy and Strategy is based on ecosystems-based thinking, and has

three components: assessment, management and coordination, which are linked through the integrated water resources management (IWRM) approach.

UNEP's Water Policy and Strategy provides a cooperation framework for implementation at the national, regional and global levels within the framework of the Bali Strategic Plan for Technology Support and Capacity Building. Inadequate capacity is a major constraint to achieving sustainable water resources management in many developing countries. Numerous reports and meetings, such as Agenda 21 and the World Water Forums, have identified capacity building as a priority area for intervention. The Water Policy and Strategy will be implemented by many stakeholders, ranging from international through national institutions to communities at local levels. This makes it essential to ensure that, as a first step, there are supporting policies, strategies and institutional frameworks for implementation. A review by the UNEP Collaborating Centre on Water and Environment (UCC) in 58 developing countries found that:

- Water laws exist, but are often developed independently (water acts, coastal acts, land use acts, etc.) and there is no cohesion.
- If there is a water policy and/or law, they often concern water supply only and environmental aspects are very weak, if they are included at all.
- Policy statements exist, but are scattered in different documents (acts, regulations, action, and master plans).
- Water may also be addressed in different sector policies and laws (agriculture, health etc.).
- If there is a coastal zone management policy, it often concerns the physical planning of the coastal zone and the exploitation of the marine resources only.

Lack of cohesion, weak enforcement as well as the lack of environmental issues in many policies highlights the need for UNEP to support interested developing countries to develop integrated water policies and strategies. The Division of Environmental Policy Implementation (DEPI) and the Division of Regional Cooperation (DRC) have undertaken an initiative to develop and implement a comprehensive water capacity building and technology support programme for developing countries using the South-South Cooperation

framework with the full participation of the interested countries. The South-South Cooperation water programme follows the following principles: (i) efforts build on existing capacity, (ii) activities have national ownership to ensure that built capacity is sustained, (iii) capacity building programmes are tailored to individual countries based on a bottom-up needs-assessment process, (iv) work is coordinated, linked with efforts already in progress and integrated with other sustainable development initiatives and (v) work is not duplicated and promotes that undertaken by other organizations and programmes.

The South-South Cooperation water initiative will be implemented two phases. The initial phase has been completed and its results will provide the basis for phase II. In the initial phase a series of consultations with potential national institutions and other key partners reviewed ongoing national water resource management initiatives, identified key areas of need and opportunities for joint collaboration, and articulated a broad programme of cooperation to strengthen national capacity for addressing water resources at national, sub-regional and regional level. A small scoping meeting was held in Nairobi in October 2007 to explore priority areas of capacity development and identify key elements in developing a broader programme of support. The meeting included government water experts from Brazil, Kenya, Oman, Panama, South Africa, Thailand and Vietnam. Many of the challenges and constraints encountered in the formulation and implementation of national water policies and strategies appeared to be common to all the countries represented.

The second phase will extend the consultations to a larger participation and build on the results of the scoping workshop. Elements identified at the scoping meeting will be circulated to developing countries and sub-regional and regional institutions. A follow-up consultation workshop, much larger in terms of participation, will be convened by UNEP in 2008 to review key areas, prioritize them and develop an outline for a South-South Cooperation programme to be implemented by the countries themselves with support from UNEP and other agencies.

From July 2005 to April 2007, UNEP-UCC implemented a project to assist developing countries to develop IWRM roadmaps in

response to the Johannesburg Programme of Implementation target for developing IWRM and Water Efficiency plans in all countries. The project was implemented in nine sub-regions (North Africa, West Africa, Central Africa, Southern Africa, Central Asia, Southeast Asia, Central America, Caribbean, and South America.) The project provided assistance to national governments, upon request, through expert training and national workshops. Concrete results stemming from the project are that 17 countries have drafted national IWRM roadmaps and 21 countries have reached high level consensus on IWRM roadmaps. Additionally, the project has developed and disseminated IWRM training and guidance material to assist workshops and training in the seven sub-regions. The project has also generated a casebook on lessons learned from developing IWRM roadmaps and plans. Papers on *IWRM and Environment*, *IWRM and Lakes* and *Monitoring IWRM* will also be published. The project also formed the basis for an international conference that adopted a global roadmap for the implementation of national IWRM plans entitled the ‘Copenhagen Initiative’.

INTERNATIONAL WATERS

Freshwater resources, both above and below ground, often cross international political boundaries, creating a need for international cooperation and coordination on their use. UNEP leads the technical implementation of the GEF International Waters Learning Exchange and Resource Network (IW:LEARN) information base, and provides capacity building and technology support to GEF at regional and national levels to improve learning and exchange experiences on transboundary water management and enhance the impact of GEF International Waters interventions. IW:LEARN, co-implemented with the World Bank and UNDP, captures and disseminates knowledge from project practitioners across the globe. In 2007 UNEP launched an enhanced web-based platform that serves as a repository for GEF Water projects in addition to a platform to promote mutual learning and information exchange through use of blogs, wikis, e-fora and so on. In addition, its technology support includes capacity building in information management and Geographic Information Systems (GIS).

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GEF IW:LEARN
International Waters Learning Exchange and Resource Network

What is GEF IW:LEARN?
A programme that promotes experience sharing and learning among GEF International Waters projects and the country officials, agencies, and partners working on them. This website serves as the knowledge base for GEF IW:LEARN and contains an extensive collection of resources, experiences, and materials for the portfolio.

Project Database
Profiles, documents, contacts information and other related IW project information.

Document Center
- Transboundary Diagnostic Analysis
- Strategic Action Programme
- Lessons Learned
- Experience Notes
- Monitoring and Evaluations
- Courses and Guidelines

Blogs and Forums
Corporate, management and thematic virtual discussions.

News
Newsletters and live feeds from GEF IW projects.

Contact Database
Contact information for the GEF Secretariat, Implementing Agencies and IW:LEARN, also including a searchable database of GEF IW project contacts.

Calendar of events
Online listing of planned and passed IW events (sortable by region and date).

Online Services
Access online services and ICT support tools (job posting, making lists, ICT help, ...).

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Ecosystem management

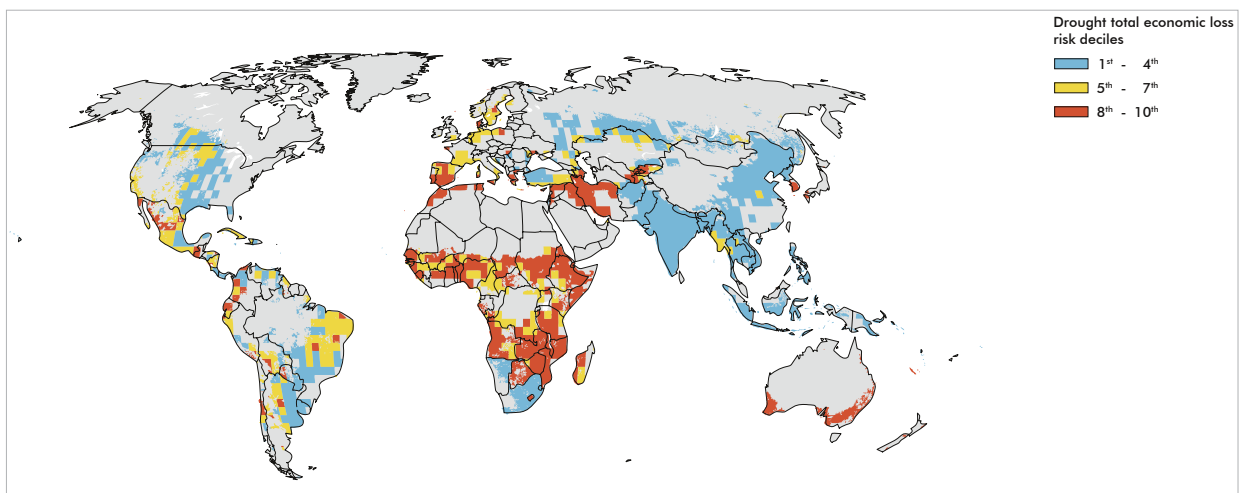
In Europe, UNEP/GRID-Europe contributed to the UNECE publication *Our Waters: Joining Hands Across Borders*. It is the first ever in-depth report on transboundary lakes and groundwater in the UNECE region. It covers 140 transboundary rivers and 30 transboundary lakes in the European and Asian parts of the region, as well as 70 transboundary aquifers located in South Eastern Europe, the Caucasus and Central Asia. The assessment aims to inform, guide and stimulate further action by governments, river basin organizations (joint bodies), international organizations and relevant non-governmental organizations related to transboundary waters.

Another publication addresses Latin America and the Caribbean's major rivers, lakes and aquifers where they are shared by two or more countries. Though the region has the greatest availability of freshwater resources, its distribution is however uneven which increases the risk of it being used or adapted inequitably. It is estimated that three-quarters of the water in the region is used for agriculture, while 40 per cent of the population of Latin America and the Caribbean have access to only 10 per cent of the region's water. Many parts of the region still lack access to good quality water and sanitation. As a result, the likelihood of tension and conflict rises between nations in the region due to competing use and needs for the resource by communities and its ecosystems. Sustainable management of water in the region is complex. Currently, several regional and sub-regional entities are working together

to develop, manage and share multiple use of water resources. The purpose of *Hydropolitical Vulnerability and Resilience along International Waters: Latin America and the Caribbean*, available in both Spanish and English, is to support informed policy making and provide a model for other regions that face similar water challenges.

Also in Latin America, the UNEP-GEF project 'Integrated and Sustainable Management of Transboundary Water Resources in the Amazon River Basin' is considering climate variability and change to elaborate a Strategic Action Programme for the Amazon Basin and create the necessary enabling social-economic environment for its implementation. The project seeks to understand and document, through extensive stakeholder participation, the development needs of Amazon societies, and propose strategic mechanisms for sustainable economic development in an environmentally sound manner. Another UNEP-GEF project, 'Protection of the North West Sahara Aquifer System (NWSAS) and Related Humid Zones and Ecosystems' promoted more sustainable exploitation of northwest Sahara aquifer system resources shared by Algeria, Libya and Tunisia. The completed project established a tripartite institutional mechanism for the joint management of the northwest Sahara aquifer, developed a data management and monitoring system, and studied of the impacts of the use of water resources on socio economic conditions and the environment recharge and discharge areas.

Drought risk and vulnerability (economic loss, as a proportion of GDP density). With climate change, the frequency of certain natural hazards are expected to increase. This map presents output from an analysis investigating hazard exposure and historical vulnerability for selected natural hazards, together with population distribution and economy. Specifically, this map shows where droughts represent a major threat to economies and human well-being. © Hugo Ahlenius/UNEP/GRID-Arendal for GEO-4



REDUCING VULNERABILITY

The effects of climate change mostly manifest themselves via water: countries will receive too little, too much or at the wrong time, and the quality of supply will also be affected. According to UNEP's Finance Initiative (FI) this will expose businesses, as well as communities, to considerable financial stress. However, despite its material importance, water has, until now, only scarcely appeared on the radars of financial institutions. In 2007 the FI Water Workstream set out to deliver a report that will deliver indicative solutions and an investment/credit-related toolkit on how to identify water-related risks in more detail, how to better integrate water issues into existing risk-assessment, quantification and mitigation processes, and where to look for water-related business opportunities. A broad range of financial institutions was involved to provide practical case studies for the report, and a workshop during World Water Week in 2007 brought together a pilot-testing committee and an even broader range of financial institutions to discuss the relevance, usefulness and applicability of the product and to give final recommendations on its design and content. The result of this six-month process, the *Water-Related Risk Management Guidelines for Financial Institutions*, was launched at UNEP FI's Global Roundtable 2007 in Melbourne.

Often, the simplest, most obvious solutions can have the greatest impact. According to the latest data, 14 of Africa's 53 countries suffer from water stress, and the number is expected to double by 2025 if the present trends of water use continue. Climate change is expected to worsen the situation. However, these figures are based on renewable water (surface and ground water) and do not consider rainwater. To demonstrate the potential of rainwater harvesting for augmenting water resources, UNEP and the World Agroforestry Centre (ICRAF) have developed GIS maps for nine African countries (Botswana, Ethiopia, Kenya, Malawi, Mozambique, Uganda, Tanzania, Zambia and Zimbabwe). An analysis of the maps showed that rainwater has an enormous potential to augment freshwater. For instance, using current water resources, Kenya has 633 m³ per person per year, yet the rainwater potential is 12,370 m³, indicating that water management is based on only 5 per cent of rainfall. This is a huge water potential, some of which can be harvested

and used to meet human and ecosystem needs before it is released into the atmosphere.

In Europe, UNEP-DEWA, the Lake Balaton Development Council (LBDC) and the International Institute for Sustainable Development (IISD) launched the Lake Balaton Integrated Vulnerability Assessment, Early Warning and Adaptation Strategy project following many years of water quality and quantity problems in the Lake Balaton region (also known as the sea of Hungary). The purpose of the project is to contribute to a better understanding of Lake Balaton's ecological and socio-economic system vulnerability and resilience arising from global and local change, including land use and demographic, economic and climate change, and to build capacity for more effective policy making and adaptation measures in response. In the first stage of the project, GRID-Europe developed an Internet MapServer for implementing partners to access available geo-data. Now GRID-Europe is in the process of simulating hydrological processes following a set of climatic and land use scenarios.

THE MARINE ENVIRONMENT

Eighty per cent of marine pollution emanates from land-based sources. The Second Intergovernmental Review meeting of the Global Plan of Action for the Protection of the Marine Environment from Land-based Activities (GPA), held in Beijing in October 2006, endorsed a new approach for the GPA, focused on mainstreaming, financing, and legislative and institutional strengthening. In 2007, the UNEP/GPA Coordination Office began to implement this mandate with a primary focus on ensuring that further efforts by national authorities to address land-based sources of marine pollution are well integrated into relevant national development processes, including processes supported by the international donor community such as the Bali Strategic Plan, UN Development Assistance Frameworks and poverty reduction strategies. This mainstreaming approach is being integrated into National Programmes of Action (NPA) with a renewed commitment to facilitate the identification and implementation of sustainable domestic financing strategies.

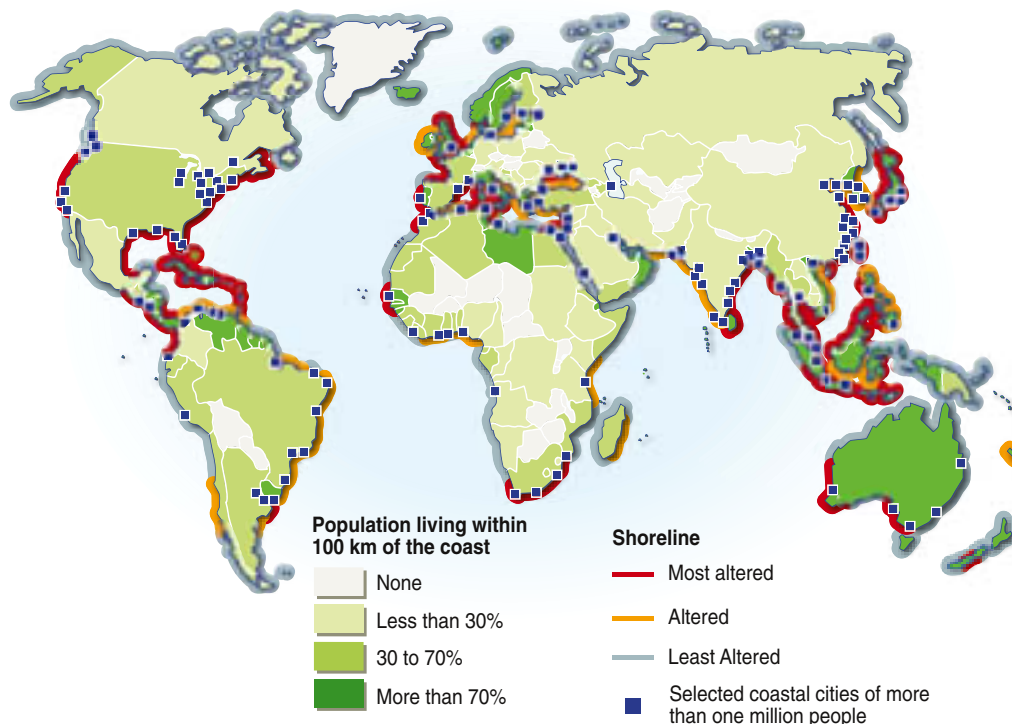
The UNEP/GPA Coordination Office continues its cooperation with GEF Large Marine Ecosystem (LME) projects, including the Black

Ecosystem management

Sea Commission, in supporting efforts to build the capacity of national and local authorities responsible for implementing the Land-based Activities Protocols of a variety of Regional Seas conventions. It also continues to make the necessary links with ongoing UN reform processes and to continue raising awareness of the need to address the relationship between freshwater, coastal and marine environments in attaining WSSD targets related to integrated water resources management, sanitation and ecosystems, in particular given the launch of the International Year of Sanitation (2008) in which the UNEP/GPA Coordination Office is active. To this end, UNEP continued to build capacity on municipal wastewater management in coastal cities in Suriname, Syria and Mozambique. New funding from the EU ACP (African, Caribbean and Pacific signatories of the Lomé Convention) Water Facility and UNDP-GEF has been mobilized for 60 training courses on wastewater management in the coming three years. A web-based self-study management tutorial and a compendium of technologies have been developed to serve a global community of practitioners, planners and decision makers.

The UNEP/GPA Coordination Office also provides substantive and financial assistance to countries in the implementation of the GPA at the national level. More than 70 countries are currently implementing the GPA, either with direct support from the UNEP/GPA Coordination Office or in the framework of a Regional Seas Programme and Action Plan or a GEF LME project. The GPA website now contains extracts of the 2006 publication *Protecting Coastal and Marine Environments from Land-Based Activities: A Guide for National Action*, to ensure access to information on the implementation of the GPA at the national level by all stakeholders. The UNEP/GPA Coordination Office also received the mandate to provide assistance to countries in assessing how the conservation of marine and coastal ecosystems contributes to poverty alleviation and the achievement of the Millennium Development Goals (MDGs), and to support them in mainstreaming the sustainable development of oceans and coasts into international development frameworks and national planning and budgetary processes. In this regard, the UNEP/GPA Coordination Office provides training to officials of Ministries of Environment, Planning and

The UNEP Coordinating Office for the Global Plan of Action for the Protection of the Marine Environment from Land-based Activities (GPA) supports governments and other stakeholders in addressing marine pollution, 80 per cent of which emanates from land-based sources.
© UNEP/GRID-Arendal



Finance through regional training workshops, and stimulates the use of its Guidelines and Checklist, developed in collaboration with the Stockholm Environment Institute, for mainstreaming marine and coastal issues into national planning and budgetary processes.

In the Beijing Declaration on furthering the implementation of the GPA, endorsed during the Second Intergovernmental Review meeting, 104 governments, the European Commission and other stakeholders and major groups recommended to “devote additional effort, finance and support to address point and non-point source nutrients, including municipal, industrial and agricultural wastewater, as major and increasing source categories directly affecting human health, well-being and the environment, including marine ecosystems and their associated watersheds.” To follow up, the UNEP/GPA Coordination Office, in partnership with the Ministry of the Environment of the Government of The Netherlands and UNEP DTIE convened a small group of stakeholders in June 2007. Participants included government representatives, scientists, including representatives implementing international waters projects, the International Fertilizer Association, representing the private sector, UNIDO, UNECE, the GEF as well as representatives from four UNEP Divisions.

The objectives of the meeting were to develop a common understanding of the available knowledge, assessment programmes and policy responses related to excess nutrients, in particular nitrogen, in the coastal and marine environment. UNEP’s GEO assessments have identified a growth in size and number of coastal ‘dead zones’ caused by nutrient excess in recent years. The group also discussed an action plan for further assessment, capacity building and policy responses and agreed to form the Global Partnership on Nutrient Management, The overall goal of which is to reduce nutrient over-enrichment in coastal and marine environments and their associated watersheds.

REGIONAL SEAS

The UNEP/GPA Coordination Office continues to support the activities and action plans of the Regional Seas conventions and other relevant regional policy frameworks and mechanisms.

The UNEP Regional Seas Programme Coordination Office provides a comprehensive institutional and programmatic framework for regional and global cooperation for the protection of coasts, oceans and seas. The ninth Global Meeting of the Regional Seas Conventions and Action Plans was held in Jeddah, Saudi Arabia, in October 2007. The meeting was given the task of formulating Global Strategic Directions for the Regional Seas 2008–2012. These Directions were formulated acknowledging the links between marine and coastal ecosystem services with economic and human development.

It is expected that the new Strategic Directions, together with UNEP’s identified priority fields, will serve as the base for a coordinated and joint programme of work, streamlined and harmonized at the global and regional levels. The Jeddah Declaration, ‘*Furthering the implementation of the Regional Seas Conventions and Action Plans Towards the Sustainable Development of the Marine and Coastal Environment*’, recognized the value of marine and coastal resources as the main source and reserve for food security, economic well-being and health for a significant number of people in the world; and noted the key role of the Regional Seas Conventions and Action Plans in facilitating the implementation of current and future global conventions, strategies, declarations, resolutions, initiatives and action programmes that address coastal and marine environment protection and conservation.

The Regional Seas established several Memoranda of Understanding (MoUs) and Letters of Agreement during the year 2007 for activity development. An MoU with the International Maritime Organization (IMO), the London Convention and 96 Protocol Secretariat to support the development of UNEP/IMO-LC *Manual and Guidelines for the Placement of Artificial Reefs* and another for identification of barriers to the implementation of the London Convention were signed. The guidelines would assist governments and national authorities, especially in developing countries, in the wise management of their marine and coastal ecosystems by providing relevant information, such as possible impacts of the installation of an artificial reef on the indigenous fauna and flora and the environment of the site and the wider surroundings, and the benefits expected to be obtained from the installation of an artificial reef.

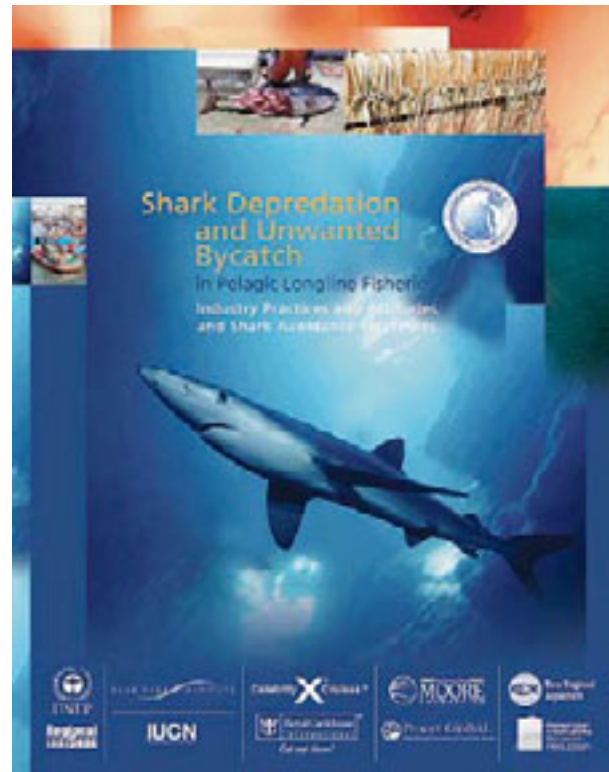
Ecosystem management

In enhancing Regional Seas' impact at national level and promoting synergies and coordinated regional implementation of relevant MEAs, the Regional Seas Programme also developed an MoU with the CMS to support the establishment of a National Dugong Conservation Strategy and Action Plan for Indonesia, and launched a study titled *Shark Depredation and Unwanted Bycatch in Pelagic Longline Fisheries* in collaboration with the Blue Ocean Institute. The study benefits pelagic longline fleets that do not want to catch sharks and want to reduce shark depredation.

The Regional Seas also developed an MoU with the Intergovernmental Oceanographic Commission of UNESCO to support joint work on the Global Reporting and Assessment of the State of the Marine Environment including socio-economic aspects, both current and foreseeable, building on existing regional assessments—the so called Regular Process. The Regular Process has been established by the UN General Assembly as a mechanism for increased research and collection of information for the protection of the marine environment and biodiversity. UNEP and the Intergovernmental Oceanographic Commission of UNESCO are jointly leading this process with the establishment of a group of experts to undertake the assessment of assessments. In accordance with their work plan, experts are conducting an overview and assessment of existing ocean and coastal area assessments in each of 21 designated regions with regard to food security, public health and safety, ecosystem health and function, and economic and social benefits in relation to global and regional ecosystem goods and services. An analysis of the current assessment landscape uses five major criteria, namely: i) scientific credibility, ii) policy relevance iii) communication, iv) legitimacy and v) usefulness. Evaluations of existing assessments to identify best practices to inform a proposal for a framework and options for establishing a Regular Process will follow. A final report is scheduled to be presented to the UN General Assembly in 2009.

CLEANER SEAS

The Global Initiative on Marine Litter saw the extension of various ongoing MoUs in the different regions. Marine litter continued to be the main highlight of the year with several workshops and activities held within the various regions. The



Shark Depredation and Unwanted Bycatch in Pelagic Longline Fisheries, published in collaboration with the Blue Ocean Institute, benefits pelagic longline fleets that do not want to catch sharks and want to reduce shark depredation.

Regional Seas developed an MoU with Ocean Conservancy, the leading marine conservation NGO in the USA, to support the synthesis of the document *An Overview of the Status of Marine Litter in UNEP's Assisted Regional Seas*. The document will provide clear information on the scale, sources, gaps, needs and recommended priorities to address the problem of marine litter at the global level as well as in the eleven Regional Seas that participated in the Marine Litter activities during the last two years. In addition to this the Regional Seas, with UNESCO through its International Oceanographic Commission (IOC), is developing the *UNEP/IOC Operational Guidelines on Survey and Monitoring of Marine Litter*. The Regional Seas is also in collaboration with the Institute for European Environmental Policy to develop practical and operational guidelines on the use of market-based instruments to address the problem.

In May 2007, the first Coordinating Body on the Seas of East Asia (COBSEA) Marine Litter Workshop was organized to discuss the outcomes of a regional review on marine litter and develop a draft Regional Action Plan to be tabled at the 19th Meeting of COBSEA in January 2008. At a

Special Intergovernmental Session of COBSEA, held in Putrajaya, Malaysia, in September 2007, a 'New Strategic Direction 2008–2012' was finalized for tabling at the same meeting. In the same sub-region, the Green Fins project, which aims to establish a network of environmentally friendly dive operators, which has been implemented in Thailand and the Philippines since 2004, held a regional workshop in May 2007 to further expand the network in Thailand and the Philippines and to other countries. COBSEA also initiated the development of the East Asian Seas (EAS) Knowledgebase with the Tropical Marine Science Institute (TMSI) in Singapore. In April 2007, the first EAS Knowledgebase Workshop was organized in Singapore with TMSI, where pilot regional and national databases were presented. The future development and expansion of the EAS Knowledgebase was discussed and a number of recommendations made for further development

LEGAL TECHNICAL ASSISTANCE

The overall objective of legal technical assistance is the review of national legal frameworks and sectoral legislation, policies and institutional regimes that address the protection of the marine environment and the sustainable use of its resources. Such assistance aims at facilitating the effective implementation of Regional Seas Conventions and Action Plans to which governments are Parties, supporting the identification of overlaps, deficiencies and gaps in legal and institutional frameworks, as well as the development of appropriate legislation, regulations and structures.

UNEP Regional Seas supported a legal project in the British Virgin Islands to review and analyze its environmental legislation towards establishing an appropriate legislative framework for the efficient and effective discharge of environmental functions and compliance with the Cartagena Convention for the Protection and Development of the Marine Environment of the Wider Caribbean Region and its Protocols. The outcomes of the project include a final report containing findings, conclusions and recommendations; an analysis of the laws affecting the Draft Environmental Management and Conservation Bill 2007; a draft Environmental Management and Conservation of Biodiversity Act; a draft Order for the prevention of marine pollution, in compliance with the UN

Convention on the Law of the Sea, Cartagena Convention and its Protocols and GPA taking into account the country's needs, priorities, plans and strategies. Legal advice and support has also been provided in the development and implementation of the legal component of the GEF/UNEP/UNDP project 'Integrating Watershed and Coastal Area Management in Small Island Developing States of the Caribbean'.

Under an MoU with the Permanent Commission for the South Pacific (CPPS), UNEP Regional Seas and CPPS are implementing a regional legal project for the analysis of compliance with and enforcement of the CPPS legal framework in each of the five Parties (Colombia, Chile, Ecuador, Panama and Peru) to the Plan of Action for the protection and preservation of the marine and coastal environment of the South East Pacific against all types and sources of pollution, and the Convention for the Protection of the Marine Environment and Coastal Zones in the South East Pacific (Lima Convention). The object of the project is (i) to identify actions and measures (i.e. legislation, policy, institutional arrangements, etc.) that the States Parties have taken, adopted and developed since 1981 to comply with regional agreements that conform to the complex legal system of the Regional Action Plan, (ii) analyze the compatibility of the actions and measures with the current global legal system in the fields addressed by each of those regional instruments, and (iii) formulate recommendations to be implemented at the regional and at the national levels to strengthen the implementation of the regional instruments and to delineate the course of action necessary to make the regional legal framework and its components compatible with the relevant international legal framework. A joint UNEP-CPPS publication with the results of the project will be produced.

Legal support has also been provided to guarantee that Land-based Sources and Activities (LBSA) Protocols are formulated in a way that adequately reflects environmental law principles, current international legal practice and the principles and elements of the GPA. Legal assistance and support has been provided for the revision of the LBSA Protocol to the Bucharest Convention on the Protection of the Black Sea Against Pollution, within the framework of the second phase of the GEF/UNDP Black Sea Ecosystem Recovery Project. The development of an LBSA Protocol to

the Abidjan Convention for the Protection of the Marine and Coastal Environment of Central and Western Africa has also been supported.

The Regional Seas Programme has also provided legal support and assistance to the Caribbean Regional Coordinating Unit in the drafting of their Rules of Procedure and Financial Rules of the Action Plan for the Caribbean Environment Programme and the Cartagena Convention for the Protection and Development of the Marine Environment of the Wider Caribbean Region. A regional meeting of the relevant Drafting Group to finalize the rules will take place in early 2008. Advice has also been provided in the drafting of the Guidelines and Operating Procedures for the Regional Activity Centres and Regional Activity Networks of the Caribbean Environment Programme. The drafting of such Guidelines is also one of the main activities under the MoU signed with the Plan of Action of the Convention for Cooperation in the Protection and Sustainable Development of the Marine and Coastal Environment of the Northeast Pacific.

Under an MoU with the Central American Commission on Maritime Transport, which is the Regional Coordination Body of the Action Plan for the Protection and Sustainable Development

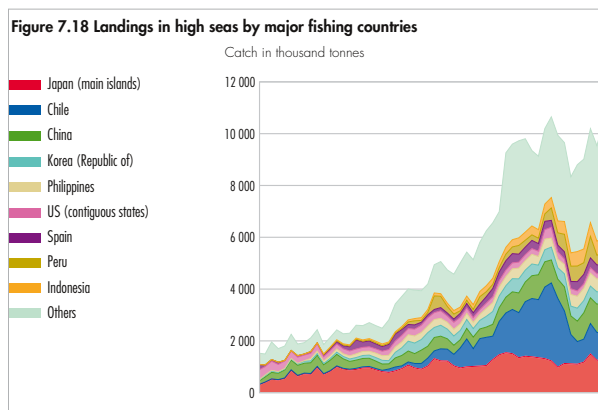
of the Coastal and Marine Zones of the Northeast Pacific (Colombia, Costa Rica, El Salvador, Guatemala, Honduras, Mexico, Nicaragua and Panama), support is being provided to develop, negotiate and adopt an international legal instrument for the protection of the marine and coastal environment of the Northeast Pacific against land-based activities and sources of pollution. The programme will also develop a manual for the efficient functioning of Northeast Pacific and organize a regional workshop on the application of the ecosystem approach in the Fisheries Management Plans of the Northeast Pacific countries.

SUSTAINABLE FISHERIES

UNEP's Economics and Trade Branch (ETB) is working to improve understanding of the impact of subsidies on fisheries, reflecting a growing international consensus that subsidies under many circumstances contribute to the depletion of natural resources and increased pollution. The World Summit for Sustainable Development (WSSD) in 2002 called new WTO rules on fisheries subsidies one of the top priorities for global cooperation on the environment. In fact, WTO fisheries subsidies reform has been cited as a model for creating mutual supportiveness among international trade and environmental regimes. UNEP ETB is providing targeted policy analysis and a forum for stakeholder discussion on this issue. A UNEP-WWF Symposium, convened in March 2007, as well as a related technical paper, *Sustainability Criteria for Fisheries Subsidies*, provided concrete input and clarifications for ongoing WTO negotiations on fisheries subsidies reform. At the symposium, governments, IGOs and NGOs discussed how sustainability can be incorporated into appropriate and workable conditions on fisheries subsidies at the WTO and beyond, including national and regional level fisheries policy.

While the WTO is a promising forum for effectively disciplining fisheries subsidies, actual fishery policy reforms have to take place at the national or regional level. UNEP-ETB's activities and publications therefore also address domestic policy makers and regional policy fora. For instance, based on previous studies, ETB is working closely with ENDA in West Africa to help design and implement policies that assist in meeting trade and sustainable development

GEO-4: Landings in high seas by major fishing countries

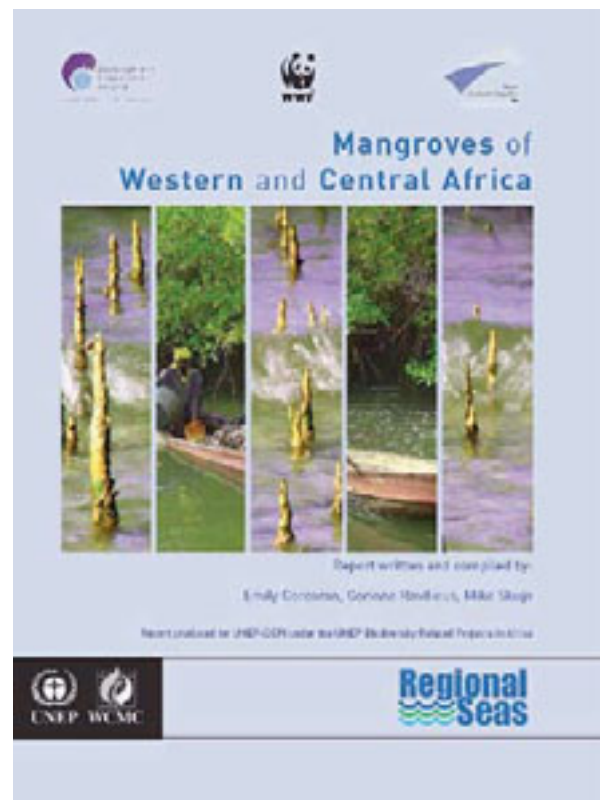


The majority of commercially valuable fish stocks are currently either over-exploited or significantly depleted, and scientists predict a global collapse of all species currently fished by 2048 if marine fish stocks continue to decline at current rates. This has serious and sometimes irreparable environmental, social and economic consequences, especially in developing countries. At the core of this crisis lies a range of policies that have increased production and trade in fish, including direct and indirect subsidies to the fisheries sector. Global subsidies are estimated to be at least \$15-20 billion a year, representing 20 per cent of total annual revenues to the fisheries sector worldwide. UNEP is providing technical and policy analysis to guide ongoing WTO negotiations on fisheries subsidies.

goals at the same time. Another issue being addressed is fisheries access agreements that offer foreign fleets access to developing countries' waters. These are, in effect, subsidies since, in most cases, the fleets do not fully pay back the access fee to their governments. Such agreements often constitute significant sources of income in developing countries, but also deplete local stocks, often to the detriment of local livelihoods. Many developing countries are now seeking to reduce fishing pressure by foreign fleets in their waters. With national and international expert involvement, UNEP ETB has prepared a study that covers two areas: 'Improving Sustainability and Transparency' and 'Access Agreements and the WTO'.

In the Caspian Sea, caviar-producing sturgeon have come under threat from over-exploitation and black market trade. Recent years have seen progress in tackling this problem through the efforts of the Caspian Sea countries and CITES. In an effort to better monitor the origin of caviar in international markets and tackle illegal catch and trade, the CITES Secretariat and UNEP-WCMC launched an online database in November 2007 that will track shipments of caviar around the world. The Caspian states are also working together to address broader environmental issues that threaten the Caspian Seas environmental and economic sustainability.

The Framework Convention for the Protection of the Marine Environment of the Caspian Sea (Teheran Convention), held its First Meeting of the Conference of the Parties in Baku, Azerbaijan, in May 2007. It brought together 68 participants, including the environment ministers of the parties to the Convention—Azerbaijan, Islamic Republic of Iran, Kazakhstan, Russian Federation and Turkmenistan—and representatives of the Caspian Environment Programme (CEP), UNDP, UNDP/GEF, the World Bank, the EU, FAO, IMO, BP, and one Iran-based NGO. The Parties requested UNEP to continue the functions of the Convention Secretariat and decided, among other things, to finalize the negotiations on the three priority Protocols on Biodiversity, Environmental Impact Assessment (EIA) in a Transboundary Context, and Land-Based Sources (LBS) of Pollution, so the Protocols could be submitted, approved and signed at the next Conference of Parties. The Parties also decided to start internal approval procedures for the signing and ratification of



Mangroves support livelihoods by providing habitat for food species, timber for dwellings, cooking and heat, and support many other subsistence and commercial activities. They also protect coastlines from erosion and storm surges. The roles of mangroves are now being understood, but only as the general trend for this valuable habitat is decline. This report presents a country profile for 19 countries of West and Central Africa, considering the status, distribution, biodiversity, uses, threats and drivers of change for their mangroves.

the Protocol on Oil Incident Response. The long-standing cooperation among the Caspian governments for the development of the Convention has created a mutual understanding of priority environmental issues among relevant national and regional authorities in the Caspian region that can be addressed under the umbrella of the Teheran Convention.

In the South China Sea and Gulf of Thailand, a UNEP-DGEP project has identified 52 locations known to be critical spawning and nursery habitats for fishes and crustacea of transboundary significance for prioritization for formal adoption within the framework of the regional system of fisheries refugia. Fisheries refugia constitute a new management approach for sustainable use of fishery resources. The project is finalizing a draft Strategic Action Programme, and 23 National Action Plans for habitats, and six National Action Plans for Land-based Sources of Pollution have been finalized and are at various stages of governmental approval.



UNEP Executive Director Achim Steiner and Olav Kjørven from the UN Development Programme (UNDP) at the 25 October 2007 launch of the UNEP *Global Environment Outlook GEO-4* report at UN headquarters in New York. This was the first time that a GEO report has been launched at UN headquarters. The object was to take the findings to UN partners as well as to engender maximum UN ownership. Prepared by about 390 experts and reviewed by more than 1,000 others across the world, GEO-4 is the most comprehensive UN report on the environment. © Stan Honda/AFP/Getty Images)

Focus on ASSESSMENT

The fourth UNEP *Global Environment Outlook* (GEO-4) was launched in more than 40 cities around the world in October 2007. Three global launches were held in New York, London and Nairobi, with key regional launches in Bangkok, Abu Dhabi, Geneva, Johannesburg, Ottawa and Mexico City, as well as a number of sub-regional launches in other cities. The large number of launch events was aimed at generating comprehensive media coverage worldwide to stimulate the interest of policy makers and other stakeholders in the report findings. This approach also allowed UNEP to tailor the launches to highlight areas of specific importance to each region.

Prior to the launch, a Global Intergovernmental and Multi-stakeholder Consultation on the

GEO-4 Summary for Decision Makers was held in September 2007. Eighty governments and more than 100 other stakeholders met to discuss and adopt the Summary for Decision Makers. The Consultation also endorsed the GEO-4 key messages which will help shape policy processes in the coming years.

The launch also marked the first time that a GEO report has been launched at UN headquarters. The object was to take the findings to UN partners as well as to engender maximum UN ownership. Prepared by about 390 experts and reviewed by more than 1,000 others across the world, GEO-4 is the most comprehensive UN report on the environment.

The GEO-4 baseline year is 1987, when the World Commission on Environment and Development, also known as the Brundtland Commission, published its seminal report *Our Common Future*.

A series of Back to Our Common Future seminars aimed at experts in the policy and development arena were held to review the successes and failures of policy in mitigating environmental pressures since the Brundtland Commission.

THE GEO-4 PROCESS

Global Environment Outlook (GEO) is a consultative, participatory, capacity building process for global environmental assessment and reporting on the state of the environment, trends and future outlooks, with the aim of facilitating interaction between science and policy. A worldwide network of Collaborating Centres forms a strong assessment partnership at the core of the process and a focus for building capacity at various levels.

GEO has many impacts. It supports multi-stakeholder networking, promotes intra and inter-regional cooperation in identifying and addressing key environmental issues and concerns, builds capacity at many levels, and provides a platform for the exchange of knowledge. One of the tools developed to help provide UNEP's network of GEO Collaborating Centres, as well as other partners and contributors, with sound scientific and consistent baseline data in the preparation of the GEO and other environmental assessment reports is the GEO Data Portal. Various regions are interested in developing similar data portals, which will have more detailed information and fill specific regional needs for data and functionality. GEO Data Portals are being developed in Africa, Latin America and the Caribbean, Asia and the Pacific and West Asia.

Another widely used assessment product is the UNEP Year Book, which reviews new and emerging issues and events of the past year. The 2007 Year Book contained a chapter on nanotechnology and the environment, and the Feature Focus on 'Environment and Globalization' was used to inform the Ministerial discussions during the UNEP Governing Council in February. A core set of GEO Indicators included in the report, prepared by GRID-Europe, present year-by-year global headline trends in major environmental issues, such as climate change, biodiversity, forests and governance.

During 2007, the multi-stakeholder consultative process on the Environment Watch Strategy:

Vision 2020 continued. Good progress was also made on the task of mapping the assessment landscape at the global, regional and national level. The exercise aims to produce a comprehensive overview of who is doing what in the area of environmental assessment for the purpose of identifying gaps in coverage and reducing duplicative activities. An on-line information system known as PEARL—Prototype Environmental Assessment and Reporting Landscape—is designed to provide online access for scientists and decision-makers to a wide range of assessment processes and related outputs. A number of national environmental authorities, including Uganda, Mexico, Indonesia and Russia have agreed to participate in this exercise. The prototype will be piloted in 2008 and will be fully operational by 2010.

In pursuit of UNEP's mandate to improve access to reliable environmental data and information, development of the web-base platform ecoMundus continued in 2007 in consultation with other UN agencies, regional and national partners. By applying internet protocols for information exchange, ecoMundus partners share data and information through ecoMundus automatically. More than twelve organizations, including FAO, OCHA, WFP, CGIAR, the Mekong River Commission and the Ministry of Environment, Brazil, have made over 15,000 Geospatial records available through the initiative.

AFRICA ENVIRONMENT OUTLOOK

The eighth Session of the African Ministerial Conference on Environment (AMCEN) in 2000, called for an Africa Environment Outlook (AEO) report to provide a comprehensive scientific assessment of Africa's environment, policies, and environmental management programmes. An inception meeting for the AEO-3 was held from in August 2007 in Cairo, Egypt, to establish the principal focus for the report, taking into account the "current environment and development debate in the African region and other global processes."

The AEO process incorporates the Africa Environment Information Network (AEIN) and early warning activities. The AEIN is an AMCEN initiative being implemented with the support of UNEP to strengthen information exchange and data infrastructure at the national and sub-regional levels to support the AEO

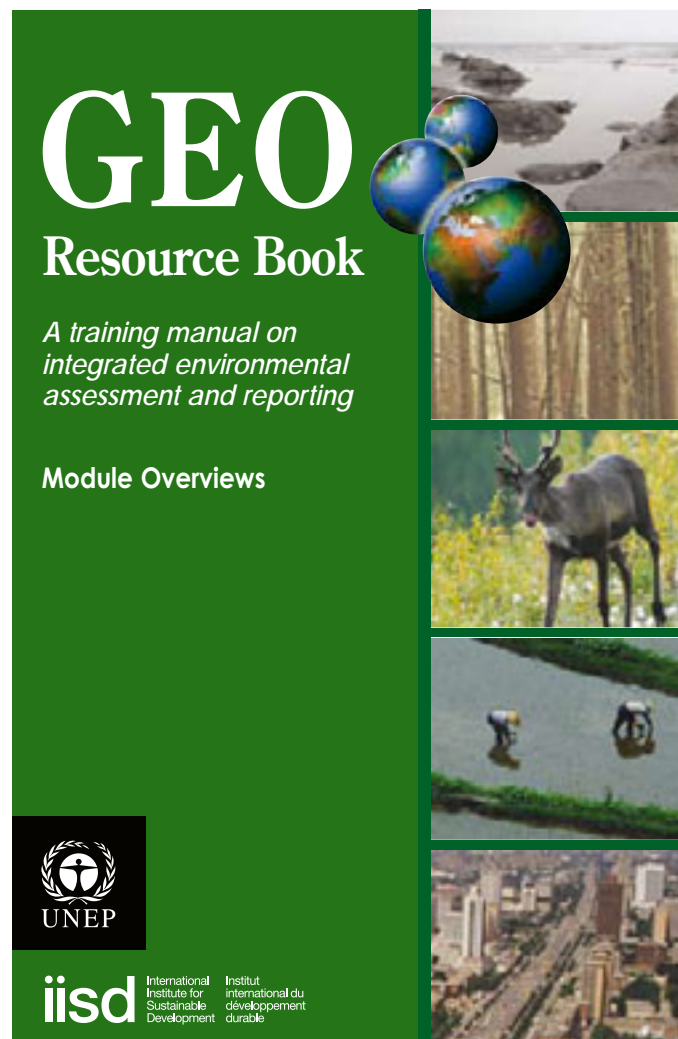
Ecosystem management

process. Implementation of AEIN has been extended to an additional 22 countries with special emphasis on the One UN countries in Africa (Mozambique, Cape Verde, Rwanda and Tanzania). AEIN provides a framework to support the implementation of the UN Development Assistance Framework (UNDAF) processes and the Poverty and Environment Initiatives in the One UN countries.

The DEWA Africa programme, in collaboration with the DEWA North America Office, the United States Geological Survey (USGS), the Secretariat for the Group on Earth Observations in Geneva, the Regional Centre for Mapping Resources for Development in Nairobi, and the Regional Remote Sensing Centre for Southern Africa in Botswana,

is preparing an *Atlas of Africa's Changing Environment*, which will provide a graphic presentation of environmental change in each of the 53 countries in Africa using satellite images of selected sites supported by ground photos and text. The Atlas is a complementary publication to the Africa Environment Outlook. A regional meeting to review the first draft was held in Cairo from 30 July to 1 August 2007. The Atlas will be launched during the 12th session of AMCEN in May 2008 in South Africa. A meeting was also held to develop a university module and curricula for using the AEO as part of the Mainstreaming Environment and Sustainability into African Universities (MESA) programme. The draft curriculum will be ready for use in September 2008 in at least five pilot universities.

During 2007, the *GEO Resource Book*, a comprehensive training manual on integrated environmental assessment and reporting, was launched, and five regional Train the Trainer workshops were organized to provide experience in instructing, improve individual capacity for reporting at sub-national level and collate feedback on the modules.



THE REGIONAL PERSPECTIVE: ASIA AND THE PACIFIC

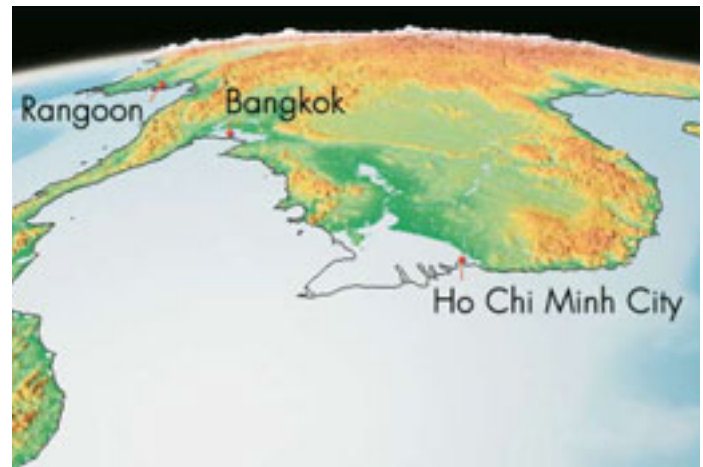
The Asia-Pacific region is home to more than half of the world's population—3.7 billion out of 6 billion. It accounts for over 36 per cent of the global economy and has an estimated 70 per cent of the world's poor. Geographically, it ranges from the fragile Small Island Developing States of the Pacific to the populous and vast coastal and deltaic plains of South and Southeast Asia, and the mountainous, landlocked countries of Central Asia. Expanding populations and dynamic economies are exerting considerable pressures on environmental resources and services in the region. Increased economic development has also led to rapid urbanization. Asia-Pacific now has about 45 per cent of the world's urban population. While the region has vast water resources, millions lack access to safe water. According to the GEO-4: 60 per cent of the region's coral reefs are at risk; many mega-cities have a level of particulates as much as five times the WHO standard; and more than 90 per cent of the 20–50 million tonnes of e-waste produced globally every year ends up in this region, and is processed with 'obsolete technology'.

UNEP's Regional Office for Asia and the Pacific (ROAP) in Bangkok, Thailand, comprises core staff and specialist officers from various UNEP Divisions working together to ensure that decisions of the UNEP Governing Council are effectively implemented in the region, and that regional concerns, priorities and perspectives are taken fully into account when developing UNEP policies. In a region as large (43 sovereign states) and as diverse as Asia and the Pacific, UNEP recognizes the value of working at the sub-regional level, where the commonalities of social, economic and the environment factors are strongest. Asia-Pacific has five sub-regions—Central Asia, North East Asia, South Asia, Southeast Asia and the South Pacific—each with its own intergovernmental bodies and processes.

At the sub-regional level, UNEP works with intergovernmental bodies, environment ministries and agencies, and civil society organizations to identify priorities and address common and transboundary issues. UNEP supports sub-regional ministerial fora, sub-regional and national assessments for emerging issues, and national and city environment outlook reports, and helps build capacity for early warning, environment management tools, and sub-regional strategies for sustainable development. At the national level, UNEP works closely with partners under the Bali Strategic Plan for Technology Support and Capacity-Building to provide systematic and targeted capacity building to develop Integrated Environmental Assessments and Action Plans and National Sustainable Development Strategies.

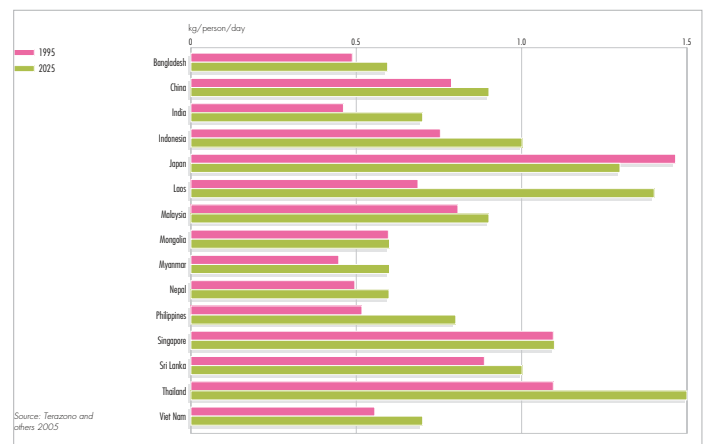
One of the region's issues that regularly features in the global media is air quality. UNEP has brought together an international team to study the impacts of aerosol pollution on regional climate, the hydrological cycle, agriculture and human health. The Atmospheric Brown Cloud (ABC) Project aims to address concerns around a three kilometre-deep pollution blanket forming over parts of the Asian continent during the dry monsoon season. Forest fires, the burning of agricultural wastes, fossil fuels in vehicles, industries and power stations and emissions from millions of inefficient stoves burning wood, cow dung and other 'bio fuels' form the haze—a mass of ash, acids, aerosols and other particles. By 2007, ABC observatories were operational in India, Japan, Republic of Korea, Maldives, Nepal, and Thailand. Three teams were also established to conduct assessments of ABC impacts on agriculture, water budget and public health. ABC scientists have produced global maps of ABCs with regional hotspots, their climate forcing and preliminary assessment of impacts on regional climate. Satellite data reveal that similar thick haze layers are also found in other polluted regions. Initial results suggest that the brown haze is reducing the amount of sunlight reaching the earth's surface by as much as 10 to 15 per cent. It may also be affecting monsoon weather patterns, triggering droughts in western parts of the Asian continent and increasing flooding in parts of Bangladesh and India. There are also indications that the haze may be reducing winter rice harvests in India by as much as 10 per cent, and haze could be leading to several hundreds of thousands of premature deaths region-wide from respiratory diseases.

GEO-4: Potential impact of a 5-metre sea level rise in Southeast Asia

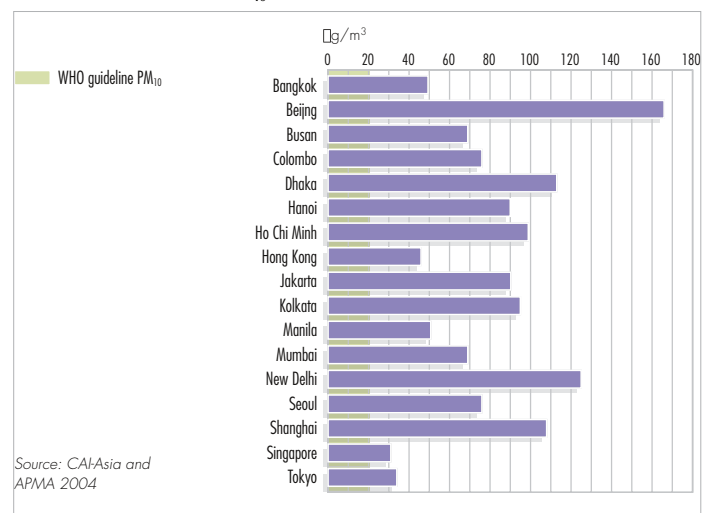


The black lines show the current coastlines. The reconstruction shows that with a 5-metre sea level rise, the coastlines would recede drastically, and cities such as Bangkok, Ho Chi Minh City and Rangoon would disappear from the land map. © W. Haxby/Lamont-Doherty Earth Observatory

GEO-4: Per capita municipal waste generation in selected Asian countries



GEO-4: Average annual PM₁₀ concentrations in selected Asian cities, 2002



ENVIRONMENTAL GOVERNANCE

Since its establishment in 1972, UNEP has been closely involved with governments, assisting them to develop and apply environmental law, from the global convention level down to national environmental legislation. Long-term strategic guidance for this work is provided by the Montevideo Programme for the Development and Periodic Review of Environmental Law. Established in 1982, each decade of Montevideo Programmes has provided a long-term strategic approach for the development and implementation of UNEP's international environmental law programme. UNEP is currently implementing Montevideo Programme III, the Programme for the first decade of the twenty-first century and has already started working on the development of the next programme. For this purpose, an expert meeting was organized in September 2007, followed by a Consultative Meeting of Government Officials and Experts on a Programme for the Development and Periodic Review of Environmental Law (Montevideo Programme), held in November at UNEP's headquarters in Nairobi. Officials and experts were invited to consider emerging issues identified through the UNEP-led GEO process as well as the Millennium Ecosystem Assessment process, and to identify the direction for the further implementation of the current Programme (III) and possible components of the next programme.

The Montevideo Programme for the Development of Environmental Law provides an important policy framework for UNEP's normative and operational activities, and guides UNEP's work in the field under the Bali Strategic Plan for Technology Support and Capacity Building. During the year, UNEP has continued to provide advisory services and technical assistance programmes to various national stakeholders, such as parliamentarians, judges and magistrates, customs officials, lawyers, negotiators and NGOs, on general and specific areas of environmental management, policy and law. These training courses and workshops inform participants about policy, legal and institutional developments in the field of environmental law at international and



national levels; promote greater interest in and commitment to using environmental law as an instrument for translating sustainable development policies into action; enhance capacity for effective compliance with, implementation of and enforcement of multilateral environmental agreements; and enable participants to share experiences and information and take initiative on a more informed basis in their home countries in the development and implementation of environmental law.

Activities conducted under the current Montevideo Programme III during the year included studies, reports and expert meetings on specific environmental law areas identified in the Programme as needing development. An Experts Meeting on Liability and Compensation was held in January in Geneva to consider the possibility of developing guidance materials for governments. The meeting reviewed draft guidelines on liability and compensation at the national level. A study on ecosystem services and environmental law was also conducted, with a focus on financing measures to resolve environmental problems and the link between environmental degradation and poverty.



Conference President Rachmat Witoelar, Environment Minister of Indonesia, Halldor Thorgeirsson, UNFCCC Secretariat, Yvo de Boer, UNFCCC Executive Secretary, and Richard Kinley, Deputy Executive Secretary, UNFCCC on the final day of the UN Climate Change Conference in Bali. The conference ended on a high note after lengthy and at times difficult negotiations with agreement on a Bali ‘roadmap’ to reach a successor to the Kyoto Protocol by 2009. Addressing climate change is the chief, but not the only, challenge of environmental governance for the 21st century. © IISD

DELIVERING AS ONE

‘Environment for Development’ has for some time encapsulated UNEP’s conceptual focus, with the argument that environmental sustainability is essential to the achievement of all the UN Millennium Development Goals (MDGs), and especially the reduction of extreme poverty and hunger. To that end UNEP has worked to position the environment as a central component of UN interventions and programming, and to work in increasingly close partnership with other UN entities. In December 2006 UNDP and Spain signed an agreement to establish a new fund of €528 million (approximately \$700 million) to accelerate efforts to reach the MDGs and to support UN reform efforts at the country level. Thematic focus areas include ‘Environment and Climate Change’, with a focus on four areas: (i) mainstreaming environmental issues in policy, planning and investment frameworks, (ii)

improving local management of environmental resources and service delivery, (iii) expanding access to environmental finance, and (iv) enhancing capacity to adapt to climate change. UNDP and UNEP are working closely on the Environment and Climate Change window, with the UNEP Executive Director chairing the Technical Sub-Committee review submissions. UNEP is involved in 13 of 17 concept notes approved for funding by the MDG Fund Steering Committee

During 2007, the UNDP-UNEP Poverty and Environment Initiative (PEI)—a global UN partnership to mainstream environment into country development processes—made considerable progress in mainstreaming environment into country development processes. For example, in Rwanda, a One UN pilot country, the Economic Development and Poverty Reduction Strategy includes

environment as a priority issue. Consequently, the Rwanda UN Development Assistance Framework (UNDAF) also includes environment as one of the priority areas. UNEP and UNDP jointly co-chair the environment thematic cluster—a first for UNEP as a non-resident agency. The PEI Africa Team is also providing strong support for Tanzania and Mozambique, also One UN pilot countries. In doing so, the PEI is demonstrating how UNEP can combine its traditional normative strength and work with UNDP country offices to operationally mainstream environment at the country level.

At the UNEP Governing Council in February, the Executive Director of UNEP and the Administrator of UNDP, Kemal Dervis, launched the scale-up of the UNDP-UNEP Poverty and Environment Initiative. In order to coordinate and support this scale-up the two organizations established a joint Poverty and Environment Facility based in Nairobi. The role of the Facility is to provide strategic direction for the

PEI scale-up, to expand technical support and access to knowledge on poverty-environment mainstreaming to the UNDP-UNEP PEI regional teams and participating countries, and to provide a hub for a range of partnerships and for donor coordination. New country UNDP-UNEP PEI programmes—in addition to country programmes in Kenya, Mali, Mauritania, Mozambique, Tanzania, Uganda and Vietnam, have been launched in Bhutan and Malawi, and additional ones are expected to take off in Africa, Asia, and Latin America and the Caribbean through 2008.

The creation of the One UN pilots was recommended in *Delivering as One*, the report of the Secretary-General’s High-Level Panel on UN System-wide Coherence. Eight countries—Albania, Cape Verde, Mozambique, Pakistan, Rwanda, Tanzania, Uruguay and Vietnam—volunteered to become “One UN” pilots in December 2006. The One UN process presents UNEP with a unique opportunity to be more responsive to country needs, which will further

UNEP and UNDP have established a joint Poverty and Environment Facility based in Nairobi.

The screenshot shows the website for the UNDP-UNEP Poverty-Environment Initiative. At the top, there are logos for UNDP and UNEP, and a banner image of a person in a field. The main navigation menu on the left includes: About (PE Initiative, PE Facility, PE Mainstreaming), Programmes (Africa, Asia, Latin America), Partnerships, Knowledge Management, MDG Support Initiative, One UN Pilots, News, Meetings and Events, Related Links, and Contact Us. The main content area is titled 'What is the Poverty-Environment Initiative?' and features a photograph of a person in a boat on a river. The text below the photo states: 'The UNDP-UNEP Poverty-Environment Initiative (PEI) is a joint programme to provide financial and technical support to countries to build capacity for mainstreaming poverty-environment linkages into national development planning processes, such as PRSP's and MDG Achievement Strategies. Based upon experience over the past few years in assisting nine countries in Africa and Asia to launch sustainable programmes to mainstream poverty-environment into national development plans, budget processes and sector implementation programmes, UNDP and UNEP have launched an effort to scale-up the PEI significantly and to work closely with key donors and other partners to expand the effort to other countries and regions. An increased number of country programmes will be supported by joint UNDP-UNEP regional teams and by the headquarters of the two organizations.' Below this text is a link to 'UNEP-UNEP Guidance Note on Mainstreaming Environment into National Development Planning...' and another link 'More about the Poverty-Environment Initiative...'. On the right side, there is a 'News' section with three items: 'SEED Awards 2008 is open for submissions. More...', 'UNDP-UNEP Partnership on Chemicals Management. More...', and 'UNEP Drylands Development Centre Enters Phase 2 of Mainstreaming E-Forum. More...'. At the bottom right, there are three small images with captions: 'Poverty and Environment Partnership', 'Poverty and Environment Net', and 'ADB Poverty and Environment Program'. A 'Copyright' notice is visible at the very bottom.

enhance the implementation of the Bali Strategic Plan for Technology Support and Capacity Building (BSP), which was adopted at the UNEP Governing Council in 2005. Participation in the One UN process will help to mainstream the environment in UN country plans and operations, especially through the UNDAFs. It will also help UNEP to align its country programmes and the operational components of its global Programme of Work with national priorities reflected in the UNDAFs, implement its activities within the UN Country Team through joint programmes, and work more closely with other UN partners, especially UNDP. A strategy and implementation plan for UNEP's engagement in all of the One UN pilots was developed with the help of Regional Directors, with inputs from all Divisions, and approved by the UNEP Senior Management Team in April 2007.

The experience of engaging with the One UN pilots has highlighted the difficulties that UNEP has in terms of processes and procedures to undertake activities at the country or operational level within the UN Country Team. Nevertheless, UNEP's engagement in the pilots has already led to a number of recommendations which will not only enable UNEP to better engage with the Delivering as One process in the future, but also to better engage with the UN processes at the national level beyond the pilot countries. UNEP staff have participated in One UN planning processes in all eight pilot countries, raising the profile of UNEP and helping to incorporate or strengthen the environmental components of the UN country programmes. In engaging with UN Country Teams, UNEP has been able to experiment with different arrangements that will help narrow down the best approaches, processes and procedures for UNEP involvement at country level. These arrangements address both the need to respond to the fast pace of the UN Country Teams in the pilots and the need to increase interdivisional cooperation and increased programmatic coherence at national level. In the same vein, the UN Belgium Team (UNBT) voluntarily decided to implement the Deliver as One process in its policy dialogue with the European institutions. The UNEP Brussels office has been tasked to lead and coordinate the UNBT policy group on climate change and environment, which comprises 12 UN agencies (UNEP, FAO, UNEP, UNFPA, UN-HABITAT, UNHCR,

UNICEF, UNIDO, UNRIC, WFP, WHO, WMO). Concrete outputs include joint UN contributions on topics such as biofuels and adaptation. This experience raised UNEP's visibility in Brussels both externally and within the UN system, where information sharing and coordination is now effective.

BUILDING LEGAL CAPACITY

An area where UNEP has always had a strong national as well as regional and global impact is in the field of environmental law. The Eighth biannual Global Training Programme on Environmental Law and Policy, was held at the UNEP headquarters in November 2007. The agenda was designed to cover both international and national environmental law, policy and institutional issues through presentations and discussions, simulation exercises and mock negotiation sessions. Participants also made presentations on their country experiences in the development and implementation of national environmental laws and institutions, and on policy and action taken to implement various Multilateral Environmental Agreements (MEAs). Sixty-seven participants attended the training, mainly from ministries responsible for the environment and Permanent Missions to UNEP in Nairobi from both developed and developing countries and countries with economies in transition. The participants represented 62 countries: 16 from Africa, 23 from Asia and the Pacific, 11 from Europe and 12 from Latin America and the Caribbean.

Regional training on the same subjects was also conducted during the year. In Latin America and the Caribbean countries participated in the Fourth Training Programme on Environmental Law and Policies in July, in San Salvador, El Salvador. This annual initiative is supported by the Ministry of Environment of Spain. This year's workshop invited more than 20 Latin American and Spanish professors with recognized expertise and backgrounds in environmental law to promote information exchange and networking among 76 participants. The Asia Pacific Training Workshop Programme on Environmental Law in Bangkok, Thailand, was attended by participants from 24 countries, giving government officials and relevant legal stakeholders and experts in the Asia and Pacific region an opportunity to enhance their ability to address emerging and important

Environmental governance

issues in the field of international environmental law, and share and review experiences in strengthening relevant national legal frameworks and institutions for the implementation of MEAs. In North America, UNEP signed a Memorandum of Understanding with Pace University Law School to prepare a North American component for UNEP's Environmental Law Programme website that will present UNEP's international environmental law programmes and possibilities for cooperating with them. It will also describe major North American law school programmes highlighting possibilities for developing country faculties and students to learn about, apply to and work with these law schools.

In Europe, UNEP runs the Geneva Training Programme in Environmental Diplomacy jointly with the University of Geneva and the UN Institute for Training and Research (UNITAR). This programme, first held in 2006, teaches the skills necessary for participating in global negotiations in environment, sustainable development and related fields, including negotiations related to the development and implementation of legal instruments and other types of agreements. In this way it will help future policy makers to understand the nature of specific environmental concerns as well as their place and weight in multilateral negotiations. The programme is aimed at present or future diplomats, negotiators, policy and decision makers in governments, regional intergovernmental bodies, local authorities, the private sector, NGOs, trade unions and UN bodies, with an initial emphasis on wider Europe, including countries with economies in transition in the Balkans and the Eastern Europe, Caucasus and Central Asia regions.

Following the successful first course in 2006, a course leading to a Certificate of Advanced Studies in Environmental Diplomacy was organized from May to December 2007, structured around distance learning, an intensive two week *in situ* course, and the preparation of a thesis by 31 December 2007, with supervision at a distance. In addition, an intensive course was conducted in Vienna in October 2007 for the delegates of the Economic and Environmental Dimension Committee of the Organization of Security and Cooperation in Europe (OSCE). Also in the regions, more than 1,000 men and women underwent multilateral negotiation and diplomacy

courses in 2007 for preparation for meetings of conventions such as CBD, the Ramsar Convention and UNFCCC.

To buttress compliance and enforcement, regional, sub-regional and national level training courses are conducted to strengthen the capacity of customs officials to play a more effective role in the implementation of trade-related MEAs. In the margins of the 20th anniversary celebrations of the Montreal Protocol, the Green Customs Initiative received the Montreal Protocol Partners' Award in recognition of its achievements. Another group essential to successful enforcement of environmental laws and implementation of environmental agreements is the judiciary. Several workshops for judges were carried out at national and sub-regional levels in 2007. For example, a UNEP-sponsored sub-regional workshop was held in November 2007 in Dakar, Senegal, to develop a common understanding of the concepts and methodologies of environmental law among the judges and magistrates of the Sahel sub-region. The participants are now more aware of the role of the judiciary in environmental matters, of existing opportunities in environmental law, and of the constraints they face in shaping environmental jurisprudence in their respective countries and in the sub-region. Also in Africa, a Regional Workshop on Chemicals and Waste Law and Conventions was held in Nairobi in September. Organized in cooperation with the Secretariats of the Basel, Rotterdam and Stockholm Conventions and the Strategic Approach to International Chemicals Management (SAICM) secretariat, the main agenda was to identify the requirements for national legislation and regulatory frameworks for the implementation of the chemicals and hazardous wastes agreements.

UNEP also continues to provide environmental law advisory services to governments, upon request, for the development, strengthening and harmonization of legislation in different areas of environmental law. During the reporting period, needs assessment missions were undertaken to Guinea, Democratic Republic of the Congo and Côte D'Ivoire to discuss the status of environmental legislation and its application and to assess technical assistance needs in the field of environmental law in light of the environmental problems affecting

THE REGIONAL PERSPECTIVE: AFRICA

Africa is composed of six sub-regions—Northern Africa, Western Africa, Central Africa, Southern Africa, Eastern Africa and the Western Indian Ocean States—whose climates vary widely. This diversity is reflected in the wide variety of landscapes, which include many biologically rich and unique eco-regions. The environment in the region is deeply woven into the lives of Africa’s peoples and into their traditional and cultural values. This has recently changed profoundly because of serious droughts and floods, the loss of forests and of animal and plant species, land degradation, increasing water shortages and declining water quality. The main pressures on the environment are largely as a result of population growth that has outstripped the capacity of current natural resource use to meet expanding human needs, the high dependence of many economies on natural resource exploitation, unsustainable natural resource utilization, increasing inequality of incomes, and limited planning, especially in urban areas.

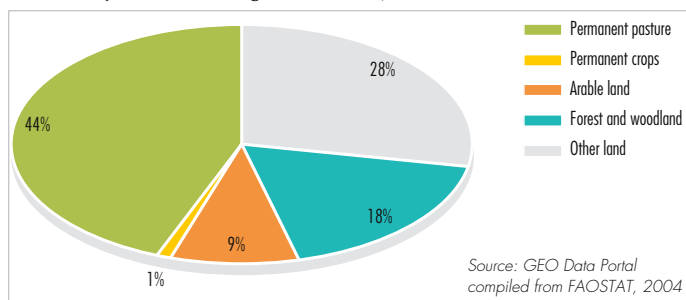
The UNEP Regional Office for Africa (ROA), located in Nairobi, Kenya, plays a central and holistic role in spearheading the development and delivery of UNEP’s programme of work in the region. ROA acts as the link between the various UNEP divisions and the countries in the region, and promotes collaboration and partnerships with organizations active in sustainable development in Africa. ROA also has an office in Addis Ababa Office which functions principally as a liaison office to the African Union (AU) and to the UN Economic Commission for Africa (UNECA).

UNEP’s strategy in Africa is to help ensure that environmental considerations are the engine driving Africa along the road to recovery, stability and sustainable development. Among the strategy’s objectives are encouraging and facilitating policy dialogue and cooperation between countries in the region, including South-South cooperation, promoting peace and the sustainable management of transboundary natural resources, and addressing environmental issues in the region by catalyzing and providing substantive and organizational support to intergovernmental consultations and initiatives in the region such as the African Ministerial Conference on the Environment (AMCEN), the African Ministerial Council on Water (AMCOW) and the New Partnership for Africa’s Development (NEPAD).

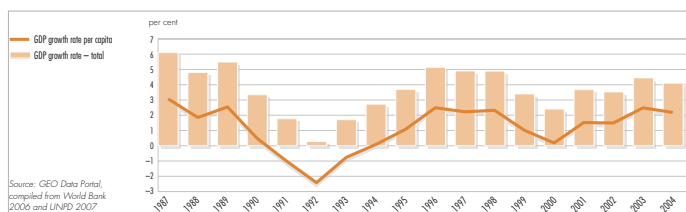
The Action Plan for the Environment Initiative of NEPAD provides an essential reference for UNEP’s activities in Africa, having identified the environment-related priorities and needs of the continent. UNEP assisted in the development of the Action Plan, which was prepared under the auspices of AMCEN (for which UNEP ROA provides the secretariat) and in close collaboration with the Secretariat of NEPAD and the AU Commission, with financial resources provided by UNEP-GEF. In 2007, ministerial-level consultative meetings on the Sub-regional Environmental Action Plans (SREAPs) for Eastern, Central, Southern, North and West Africa took place between March and June 2007. All the SREAPs were endorsed by the environment ministers of the various sub-regions who requested their respective Vice Presidents to submit them to the 12th session of AMCEN scheduled to be held in South Africa in 2008.

Support towards the implementation of the AMCEN work programme for the 2007–2008 biennium included an AMCEN session on the TerrAfrica/GEF Strategic Investment Programme for Sustainable Land Management in Sub-Saharan Africa in April 2007 in Ouagadougou, Burkina Faso. The outcome of the meeting was a ministerial declaration which was submitted to and approved by the GEF Council in June 2007. It is envisaged that this approval will enable the commencement of its implementation, marking a major step towards securing adequate investment in sustainable land management activities in Africa. The 22nd meeting of the Bureau of AMCEN was organized from 5-6 November 2007 in Johannesburg, South Africa, to review the progress made towards the implementation of AMCEN’s work programme and the decisions made at the 11th session of AMCEN.

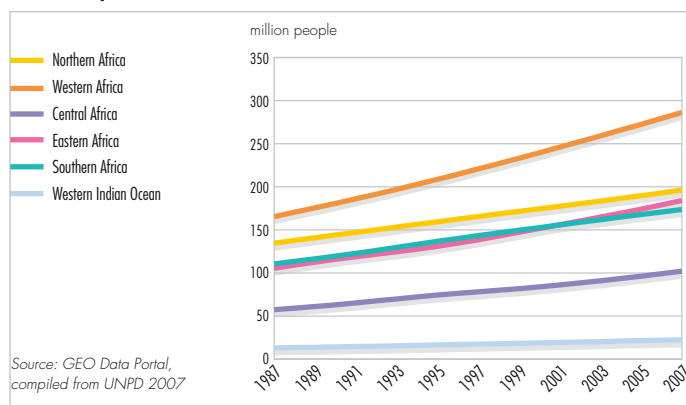
GEO-4: Major land-use categories in Africa, 2002



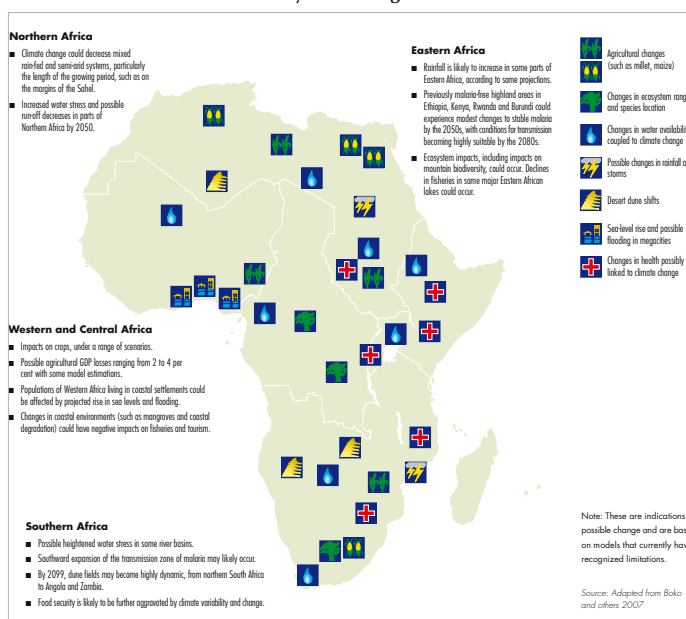
GEO-4: Annual total and per capita GDP growth rate in Africa



GEO-4: Population trends



GEO-4: Examples of current and possible future impacts and vulnerabilities associated with climate variability and change in Africa



these countries. In October 2007 a second UNEP mission to Kinshasa contributed to the drafting of a framework law for environmental protection in DR Congo, which is now under consideration by sectoral ministries for comments. Also in Africa, all activities foreseen in the framework of the second phase of the Partnership for the Development of Environmental Law in Africa (PADELIA) were carried out.

SUPPORTING THE MEAs

UNEP continues to provide legal advisory services in the context of processes for the development of global and regional legal environmental instruments. Substantive support was provided to meetings of the Parties of the Chemicals-related MEAs (i.e. Basel, Rotterdam and Stockholm Conventions), as well as to the third meeting of legal and technical experts from the eastern Africa region for the development of a Protocol on land-based sources of pollution.

UNEP also provides secretariat services to intergovernmental panels and other processes. A notable example is the provision of joint secretariat services with the World Meteorological Organization (WMO) to the Intergovernmental Panel on Climate Change and its bureau and working groups, including facilitating the participation of developing countries and countries with economies in transition. In 2007, UNEP provided support to the 26th and 27th Sessions of the IPCC, which resulted in the approval and adoption of the IPCC Fourth Assessment Report. Other inputs provided by UNEP to the work of MEAs include the presentation of the UNEP official report to the relevant COP/MOPs as well as the organization of side events, both in respect of UNEP-administered MEAs as well as other relevant MEAs, such as UNFCCC and UNCCD. UNEP also continued to update the Register of International Treaties and Other Agreements in the Field of Environment in six UN languages that will be distributed to all Governments and relevant organizations in March 2008. The updated register will contain changes in the status of ratification and signature of more than 50 environmental treaties for which UN and specialized agencies act as the depository.

UNEP has developed issue-based modules to encourage and facilitate the coherent implementation of MEAs at national level. The

modules, variously developed by IUCN and UNEP-WCMC, focus on issues of common concern across different biodiversity-related agreements, including inland waters, sustainable use, climate change and biodiversity, invasive alien species, and protected areas. Each module provides a structured overview of how a certain topic is treated across different agreements by identifying and grouping implementation requirements. By clustering obligations of different agreements under certain activities, the modules facilitate communication at the national level and improve implementation of obligations through enhanced cross-sectoral understanding and cooperation. This is regarded as particularly relevant and effective for efforts made at the national level for the achievement of the 2010 Biodiversity Target. The modules have been applied widely in various regions.

Each biodiversity convention (including CITES, CMS, CBD, and Ramsar) generates large quantities of data, documents and other forms of information. Much of this information addresses common biodiversity-related themes and activities. However, because it is not inter-linked or organized in a consistent and harmonized manner, grasping 'the big picture' and ensuring that the conventions are mutually supportive can be extremely difficult. In order to address these issues, UNEP is undertaking a project on Knowledge Management for Biodiversity-related MEAs, which aims to promote the strategic use of information and promote interoperability of information datasets related to biodiversity-related conventions. Under the project, an Internet portal has been developed at UNEP-WCMC that enables users to access key documents relating to the implementation of MEAs, such as decisions and resolutions, strategic plans, lists of Parties and national focal point information.

Another component of the project focuses on harmonization of national reporting for biodiversity-related MEAs. As governments accede to an increasing number of MEAs, the preparation of national reports becomes more of a burden, particularly due to often complex reporting formats as well as a lack of communication and cooperation between focal points for different agreements. The project addresses these challenges by identifying the common core reporting elements among biodiversity-related MEAs, including through

the development of thematic modules for joint reporting between a small number of MEAs. The products of the Knowledge Management Project, being implemented by UNEP-WCMC, have been shared with a number of Parties and interested individuals. The results of the first phase of the project will be disseminated at the meetings of the governing bodies of various MEAs during 2008.

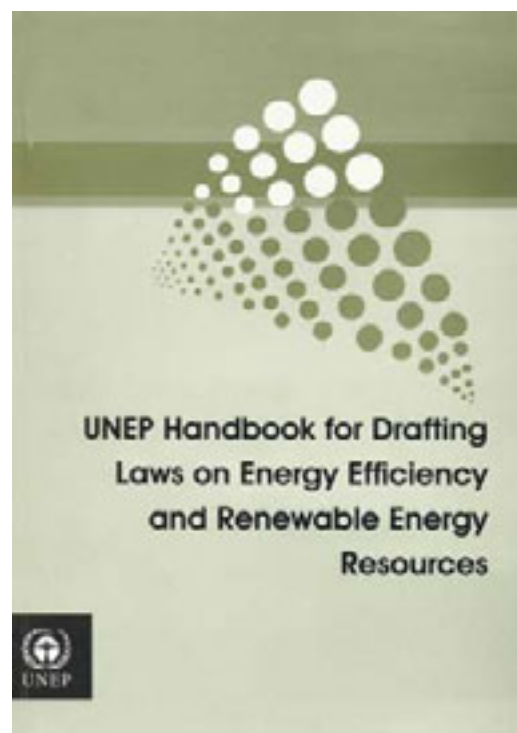
ENVIRONMENTAL LAW PUBLICATIONS

To complement the multilateral environmental negotiation courses and other capacity building initiatives, various tools and handbooks have been developed over the past two years. They include: *Guide for Negotiators of MEAs*, developed in partnership with the Foundation for International Environmental Law and Development; *MEAs Negotiators Handbook*, launched in 2006 and revised in 2007; *Negotiating and Implementing MEAs: A Manual for NGOs*, developed in partnership with the Stakeholder Forum; *Compliance Mechanisms Under Selected MEAs*; *Glossary of Terms for Negotiators of MEAs*; *Manual on Compliance with and Enforcement of MEAs*, which has an interactive on-line version and CD Rom; and *Constitutional Environmental Law: Giving Force to Fundamental Principles in*

Africa, now in its second edition with a CD-Rom containing texts of national constitutions from countries in Africa, developed in partnership with Environmental Law Institute. To further ensure long term sustainability in the capacity building activities undertaken, a curriculum on compliance and enforcement of MEAs, with teaching materials and notes, has been developed for use by universities teaching law and/or environmental management courses, which can stand alone as a full-fledged certificate course on the subject.

UNEP has also prepared several publications on environmental law in addition to those mentioned above. UNEP launched the *UNEP Handbook for Drafting Laws on Energy Efficiency and Renewable Energy Resources*, a resource book for decision makers in the energy sector worldwide and also for academia to further develop this field of environmental law. The main issues covered include the framework for energy resource management, energy efficiency as it relates to industry and commerce, the building sector, road transport, and appliance energy efficiency label and standards. The section on renewable energy includes hydroelectric power, solar and wind energy, energy from biomass and geothermal energy. A section on addressing legislative issues of rural applications on energy efficiency and renewable energy is also included.

UNEP develops various tools and handbooks to complement environmental negotiation courses and other capacity building initiatives.



The UNEP capacity building programme for judges and related legal stakeholders launched the *Judicial Training Modules in Environmental Law*. The publication contains 10 modules on the application of environmental law by courts and tribunals. It covers the ‘Role of the Judiciary in Promoting the Rule of Law’; the ‘Scope and Content of Environmental Law’; and ‘Managing Environmental Cases’. Other issues include Evidence, Remedies and Resolving Environmental Disputes. The publication has been translated into Chinese, French, Spanish and Russian. UNEP also continues to issue updates of environmental law series, such as the compendium of judicial decisions and the compendium of environmental legislation.

ENVIRONMENTAL EDUCATION

Over the years, UNEP has worked to enhance environmental awareness and action through education and training programmes, and is working to support the goals of the UN Decade of Education for Sustainable Development (UNDESD) 2005–2014 through participation in global fora such as United Nations University (UNU) Global Seminar on Environment and Education for Sustainable Development, held in Kumasi, Ghana, in March 2007, the UN Inter-Agency Committee on UNDESD, held in New York in May 2007; and the European Conference on the UNDESD, held in Berlin, Germany, also in May. The European forum produced a work agenda for the UNDESD that will form the basis for mid-term review of the Decade in 2009. UNEP also continued to collaborate with UNESCO in the environmental education field. In May 2007, UNEP and UNESCO jointly convened the International Consultation on Education for Sustainable Development (ESD) in Bonn, Germany, aimed at engaging the corporate sector.

In November 2007, UNEP, UNESCO and the Government of India co-sponsored the fourth International Conference on Environmental Education (ICEE), in Ahmadabad, India. The Conference attracted 1,586 participants from 97 countries. A GEO-4 side-event hosted by UNEP presented the report as a research and teaching tool in the context of Education for Sustainable Development (ESD). UNEP also organized workshops on Sustainable Consumption and Production and on Ozzy Ozone. UNEP sponsored 10 professors from African universities to attend the conference.

In July 2007, UNEP/UNESCO/BMU organized the 30th International Postgraduate Training Programme on Environmental Management for Developing and Emerging Countries in Dresden, Germany. The training course brought together participants from 19 countries from Asia and the Pacific, Africa and Latin America. In China, the UNEP-Tongji Institute of Environment for Sustainable Development (IESD) Leadership Programme saw its fourth intake in September 2007. The IESD was established by UNEP and Tongji University in May 2002 to develop educational programmes to build research, technical and managerial skills and capacity in developing countries; contribute to UNEP’s global and regional environmental activities; and disseminate information on best practice and technological developments. The Leadership Programme on sustainable development was designed as a collaborative effort of the Asia Pacific Regional University Consortium (RUC) to provide training for emerging leaders from various backgrounds in the Asia-Pacific region.

The IESD officially conducts an International Master’s Programme, launched in September 2006. The two-year Master’s Programme was developed as a new model of education for sustainable development and comprises six core courses: Human Dimensions and Sustainability; Environmental Dimensions of Sustainable Development; Social Dimensions of Sustainable Development; Circular Economy and Economic Dimensions of Sustainable Development; Sustainable Development: Tools and Frameworks; Sustainable Development: Institutions and Policies; and one elective course entitled Global Environmental Challenges. Thirteen students comprised the first intake— four from different sub-regions of Asia-Pacific and nine from China. IESD also welcomed two international exchange students. The second intake of masters students, comprising 18 students, started in September 2007.

At the World Environmental Education Congress, held in June 2007 in Durban, South Africa, UNEP played a major role and also supported the participation of 13 professors from Africa active in the Mainstreaming Environment and Sustainability in African (MESA) University Partnership. Eighteen professors were presented with the MESA Awards for ESD Innovations in African Universities, also awarded to two African

Universities, the University of Gondar in Ethiopia and Kenyatta University in Kenya. Earlier in the year, 35 university professors and lecturers in various fields from 12 countries in Africa attended an expert group meeting in Nairobi to review and finalize the MESA project document for use in fund-raising.

In July 2007, UNEP partnered with SADC-REEP (Southern Africa Development Community Regional Environmental Education Programme), the University of Lusaka, Zambia, and Rhodes University of South Africa to pilot a strategy for MESA in Southern Africa, while in August 2007, UNEP organized a planning meeting with experts from African universities to develop an AEO (African Environment Outlook) Module for use in African universities. The workshop brought together 20 participants from universities in Southern, Eastern, Central and Western Africa.

MAINSTREAMING ENVIRONMENT

To further promote the mainstreaming of environment in teaching, learning and research in African universities, UNEP participated in the Association of African Universities (AAU) Meeting for Vice Chancellors, Presidents and Rectors, which brought together university heads from 94 Institutions, 11 members of the executive board of AAU, and 69 other stakeholders, in Tripoli, Libya, in October 2007. Participants recommended that the UNEP MESA partnership should be supported by Vice Chancellors and Rectors and that the AAU adopts the programme and promotes it among African Universities as they have done for Aids, Gender and ICT.

In August 2007, in collaboration with University of Helsinki, Finland and UN HABITAT, UNEP organized the First Sustainable Communities Course in Helsinki, Finland, to provide practical examples of how to use city planning as a tool for sustainable development. The course attracted 28 experts in urban planning; 17 from Africa, eight from Asia and three from Europe. A memorandum of cooperation was signed between UNEP and the University of Helsinki on further collaboration on education for sustainable development. Also, UNEP co-organized the Fourth Course on Law-making and Diplomacy with the University of Joensuu, Finland which brought together 40 participants from developing and developed countries.

Students have not been left out in UNEP's educational programmes. UNEP and the Centre for Sustainability at the Swiss Federal Institute of Technology jointly organized the Africa Youth Encounter Sustainability course at Egerton University, Kenya, in November 2007. The course brought together 37 undergraduate and graduate students (18 male and 19 female) from 12 international and 23 African universities to equip them with the knowledge, skills and methodology to serve as change agents for environmental sustainability and poverty reduction in Africa, as well as form a student component of MESA. In collaboration with IUCN, and through the Global Environmental Citizenship project, UNEP also developed tools and methods for mainstreaming global environmental concerns into educational curricula in Ecuador. The tools have proven very successful and are now being adopted by Mexico in a nationwide multimillion dollar programme. The Educator e-newsletter that showcases some of the innovative activities in education for sustainable development in UNEP, along with the activities of our partners, was also produced. Targeted at schools, colleges, universities, and environmental education networks, the second edition of the newsletter generated 52,000 downloads of in the month of November 2007.

ENGAGING CIVIL SOCIETY

Engagement with the major groups of civil society is essential in generating global and regional consensus and in building processes for policy deliberations. During the year under review, UNEP organized the traditional regional civil society consultation meetings as part of its Global Civil Society Forum cycle. These are held in conjunction with regional civil society fora to enhance capacity among civil society organizations (CSOs) from the South, and countries with economies in transition, in the field of environmental sustainability. The Global Civil Society Forum cycle comprises Regional Consultative Meetings in each of the six UNEP regions in preparation for the annual Global Civil Society Forum (GCSF), held prior to the Governing Council / Global Ministerial Environment Forum (GC/GMEF) as an associated meeting. The cycle provides a platform for exchange and consultation about key environmental issues to be addressed by the Member States during the GC/GMEF, and facilitates the input of major groups into the

Environmental governance

GC/GMEF and other international fora in the field of environment and international environmental governance.

The eighth Global Civil Society Forum was organized from 3 to 4 February 2007 in Nairobi, Kenya, in conjunction with the UNEP GC/GMEF. The meeting discussed the policy issues of the GC/GMEF, the draft GC/GMEF decisions, and UNEP's modalities for engaging with CSOs. A Global Civil Society Statement on policy issues was circulated to delegations prior to the GC/GMEF as an official document in the six UN languages. In dialogue with UNEP's Executive Director, prominent issues such as climate change and CSOs' important role in the search for global responses were discussed. The participation of major groups into the GC/GMEF was further enhanced, with representatives invited to attend all the Ministerial Roundtables during the GC/GMEF, plenary sessions of the GMEF on globalization and UN reform, the Committee of the Whole and the Mercury Contact Group. At the GC/GMEF, written statements were distributed on chemicals management, globalization, gender,

war, militarism and environment, water, and on specific major groups, such as business and industry, and workers and trade unions. Oral statements from the various major groups were also made in the GC/GMEF plenary and in the Ministerial Roundtables. This demonstrates that the voice of major groups is increasingly being incorporated into policy discussions at UNEP.

During 2007, six Civil Society Regional Consultation Meetings were organized in preparation for the 9th Global Civil Society Forum and 10th Special Session of the GC/GMEF in 2008, with a particular thematic focus on the key findings of GEO-4; mobilizing finance to meet the climate challenge; the UNEP medium-term strategy 2010–2013; enhancing major group participation at UNEP's governance level; and international environmental governance. The meetings were attended by a total of 236 participants from 84 countries, of whom 40 per cent were female. The year also saw, for the first time, the participation of all nine major groups of civil society at the regional meetings.

UNEP is working with workers and their trade unions and the private sector to support policy dialogue and provides technical assistance to civil society in articulating the links between globalization, environment and poverty alleviation.



ENVIRONMENT AND CULTURAL DIVERSITY

UNEP is providing support to enhance the participation of the major group 'Indigenous People and their Communities' in the Regional and Global Civil Society consultation meetings, and ultimately in the overall work of UNEP. The goal is to support the integration of issues related to indigenous people and their communities in international environmental policies, processes and programmes, mainly through fostering strategic partnerships with other major groups and stakeholders. A website was launched in February 2007 aimed at including all major topics, activities, programmes, updates and projects of UNEP related to indigenous knowledge and peoples.

A consultative open dialogue between UNEP and indigenous people was held in February 2007 at the GC/GMEF to define a strategy for identifying the priorities for UNEP's engagement with indigenous people. As a follow-up to the meeting, two partners, Tebtebba and GRID Arendal, led an online worldwide public consultation among indigenous people's networks during the UNFCCC climate change meeting in December 2007 to receive further inputs and suggestions as well as an indigenous perspective into the draft strategy. Further online consultations among a wider global representation of indigenous people, as well as among UNEP staff and other UN sister agencies, will ensure a broader participation in the strategy development process. A consolidated draft strategy is expected in mid-2008.

UNEP also provided support to the project on Indigenous Peoples' Participation in Mapping of Traditional Forest Resources for Sustainable Livelihoods and Great Ape Conservation in Cameroon in cooperation with the Great Apes Survival project (GRASP). Mapping exercises with Pygmy groups have been held and final outputs are expected in mid-2008.

LABOUR AND ENVIRONMENT

UNEP is working with workers and their trade unions and the private sector to support policy dialogue and technical assistance to civil society in articulating the links between globalization, environment and poverty alleviation. In particular, the initiative on Labour and the Environment started by UNEP and its partners, the International

Labour Organization (ILO), the World Health Organization (WHO), the International Trade Union Confederation (ITUC) and International Labour Foundation for Sustainable Development (Sustainlabour) in 2006 yielded a number of subsequent activities.

A two-year project on Strengthening Workers and their Trade Unions' Participation in Environmental Processes began in April 2007. The objective is to improve engagement of workers and trade unions in developing and implementing environmental policies. The project is expected to contribute to the implementation of the resolutions adopted by the 2006 first Trade Union Assembly on Labour and the Environment to empower workers and trade unions as active partners for progress on environment and sustainable development issues and in launching related initiatives in their workplaces. The project is being implemented in Africa, Asia-Pacific and Latin America and the Caribbean, with a focus on capacity building, replication or adaptation of selected best practices on environment initiatives in the workplace, and awareness raising on development-labour-environment issues. The project is implemented with Sustainlabour. Activities started in 2007 include the elaboration of training materials on climate change and chemicals management for capacity building of workers to be fully implemented in 2008.

The initiative also published *Labour and the Environment: A Natural Synergy* in February 2007, produced in collaboration with workers and trade unions, UNEP, ILO and WHO. The publication raises awareness of the links between labour and the environment, discusses key issues of interest to workers and trade unions, and presents their views and contributions to advancing the debate on environmental conservation. UNEP also produced a study on Green Jobs for the World Economic Forum in Davos, Switzerland, in January 2008. The study focuses on the opportunities that environmental conservation and sustainable development may yield worldwide in terms of business and employment, and the necessary steps needed to ensure a just transition. The study also explores opportunities arising from addressing climate change and the transition to a low-carbon resource-efficient economy in different sectors, such as construction, agriculture, engineering, transport, energy, the service industries and tourism.

RETHINKING STRATEGIC ENGAGEMENT

2007 has been instrumental in redefining ways and means of engaging at the governance and operational level with major groups of civil society towards promoting a more integrated approach to ensure incorporation of major groups' and stakeholders' issues in international environmental policies, processes and programmes, through fostering strategic partnerships with major groups and stakeholders, and through other relevant assistance.

Initial steps were also undertaken in 2007 to map UNEP's activities with business and industry. The objective is to enhance the engagement of business and industry in the work of UNEP, at governance, policy and programmatic levels, as well as to identify and develop UNEP-wide synergies and strategic partnerships at the policy and programmatic levels. Preliminary findings will be used to identify potential strategic partnerships and issue-based and multi-stakeholder consultations through which business and industry could engage in the work of UNEP.

UNEP's Major Groups and Stakeholders Branch also organized a High-Level Meeting on Involving Major Groups in UNEP at Governance and Implementation Levels in October 2007. Apart from discussing how better to involve major groups in the work of the organization, UNEP also provided participants with background information on the preparation of UNEP's Medium Term Strategy 2010–2013 and gathered participants' views on key environmental challenges and on how UNEP should address these challenges. Participants included a gender balanced mix of representatives from seven major groups of civil society (NGOs, business and industry, workers and trade unions, indigenous peoples and their communities, women, local authorities, and the scientific and technological community) with representation from both developed and developing countries. The meeting made recommendations on the UNEP Medium-Term Strategy and engaging civil society in the work of UNEP, as well as on emerging and current environmental challenges that should be addressed by UNEP and the necessary directional shift it requires. In parallel, UNEP has also conducted online consultations on possible guidelines for enhancing major groups' participation at UNEP's governance level.

CHILDREN AND YOUTH

Children and youth organizations are key partners in UNEP's environmental outreach efforts. The UNEP Tunza programme for children and youth encompasses conferences, retreats, on-line discussion fora and publications. The Tunza network has expanded to more 7,800 active members (despite thorough 'weeding' undertaken in 2007 to remove wrong email addresses and people who were no longer interested or eligible) as a result of conferences and events and through recruitment from regional networks. The Children and Youth Unit's internship programme also provides direct hands-on experience, as well as benefitting from the enthusiasm and insight of young people from around the world. The programme saw an intake of 48 interns from 13 countries during the 2006-7 biennium. Of these, 31 (66 per cent) were female and 23 (49 per cent) from developing countries.

As a precursor to the International Youth Conference held in Leverkusen, Germany in August, UNEP engaged conference participants in a series of regional and theme-based virtual discussions on various environmental issues. These discussions helped to better prepare the participants for the conference, and gave them a sense of focus and commitment. The

UNEP's programme for children and youth is entitled *Tunza*, a word in the Kiswahili language of East Africa meaning 'to care for and respect'. Children and youth organizations are key partners in UNEP's environmental outreach efforts.



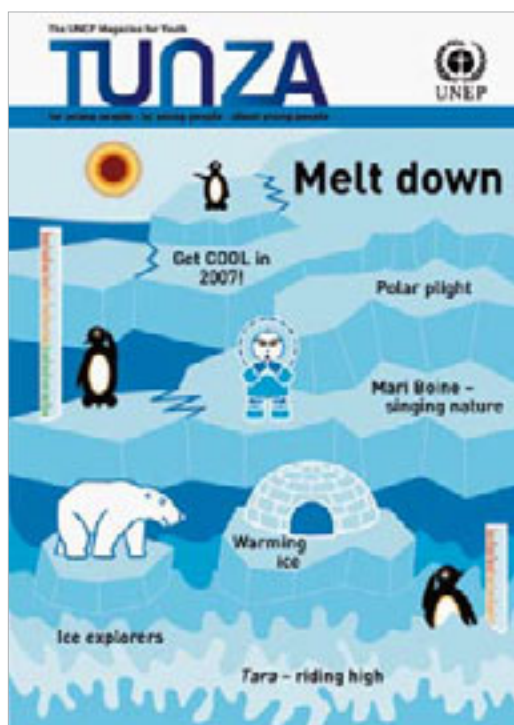
theme of the Tunza Africa Youth Environment Network Preparatory Conference, also organized as a precursor to the Tunza International Youth Conference, was climate change and its impact on Africa. Forty youth leaders from 25 African countries participated. The Conference agreed on a youth stand on issues of climate change, renewable energy and environmental entrepreneurship.

In the Asia-Pacific region, The second annual Tunza-Pacific Youth Environment Network conference was held in Apia, Samoa, in April 2007. At the Tunza International Youth Conference in Leverkusen, 180 participants from 80 countries discussed 'Technology at the Service of the Environment'. The Conference elected a new Tunza Youth Advisory Council of 12 young people from the six UNEP regions, and a new Tunza logo was launched. The key outcomes of the conference were regional action plans and an accord by Conference participants on their commitment towards environmental actions. The regional and thematic virtual discussions have continued after the conference.

For the first time, children were represented at the UNEP Governing Council. 180 children from Sweden, Malaysia, Tanzania, Uganda and Kenya

attended the 24th Session of the Governing Council in February 2007 and performed at the opening ceremony with a powerful message on 'Tree planting' and on 'Globalization and the environment'. The children also had an opportunity to discuss climate change, global warming, desertification and their impact on children with ministers of environment from Kenya, Sweden and Algeria. A Tunza Regional Children's Conference for Africa was held in Cameroon from 30 July to 2 August and was attended by more than 300 children from African countries. The Conference discussed themes of concern to Africa, namely forests and biodiversity, water, climate change and food security, deserts and drylands.

An external mid-term evaluation of the Tunza Programme reviewed activities, assessed performance against set objectives, identified challenges and constraints, and provided suggestions on how to enhance the Programme. The evaluation found that the Programme "surpassed expectations", especially given its limited financial and personnel resources. The depth and reach of the network, the inclusion of children (6–14 years), as well as youth (15–24), as well as the Programme's success in leveraging internal and external funds were all commended.



UNEP's publications for children and youth provide entertaining education on environmental topics, and especially on the theme of World Environment Day which for 2007 was 'Melting Ice: A Hot Topic?'



Focus on OUTREACH

Outreach is a core element of fulfilling UNEP's mission to inspire and inform nations and provide leadership in caring for the environment. UNEP's key outreach event of the year is World Environment Day, observed on 5 June by national and local governments, UN organizations, civil society and the private sector in more than 100 countries around the world, with numerous events, from photo exhibits to tree planting, school plays and parades.

World Environment Day informs and reflects a primary focus of the UNEP's activities through an annual theme which, for 2007, was 'Melting Ice: A Hot Topic?'. The host for the global celebrations was the northern city of Tromsø, Norway. In support of International Polar Year, the theme focused on the effects that climate change is having on the Earth's cryosphere and the ensuing consequences around the world to communities and economies. Crown Prince Haakon of Norway was one of the many Norwegian officials involved in the day's celebrations. Following the climate change theme further, the 2008 main celebrations will be held in Wellington, New Zealand, with the slogan: 'Kick the Habit! Towards a Low Carbon Economy'.

A major feature of World Environment Day 2007 was the launch of the UNEP *Global Outlook for Ice and Snow* in 19 cities around the world. The publication provides an up-to-date, concise review of the state of the environment and the trends in ice and snow-covered regions of the world. Serving as an educational and reference publication, it features case studies, illustrations, graphics and maps related to the cryosphere. With a broad target audience that includes decision makers at many levels, the report looks at the significance of changes in the cryosphere to human well-being and the implications for policy. The *Global Outlook for Ice and Snow* was written by more than 70 scientists from around the world. To date close to 200,000 copies of the full report have been downloaded from the UNEP web site.

ENVIRONMENT AWARDS

The 2007 UNEP Sasakawa Prize, a \$200,000 award given every year to individuals or institutions who have made a substantial

contribution to the protection and management of the environment, was shared by Jeunesse Park of South Africa and the Bangladeshi NGO Shidhulai Swanirvar Sangstha. The winners were chosen because of their outstanding and inspirational projects in the area of climate change. Ms. Park is the founder and CEO of Food and Trees for Africa (FTFA), South Africa's only national greening and food gardening NGO which promotes greening, sustainable natural resource use and management and food security. The Bangladeshi NGO Shidhulai Swanirvar Sangstha helps to combat the effects of climate change, particularly devastating floods and rising water levels, with flat-bottomed boats which bring a range of educational services and renewable energy supplies to families in the remote Chalanbeel region. The award ceremony was held in October at New York's Museum of Natural History.

Earlier in the year, the UNEP Champions of the Earth awards for 2007 were given to seven outstanding environmental leaders from all six UNEP regions, plus a special award. The gala ceremony was held in Singapore in April, with the participation of the winners or their representatives, as well as officials from UNEP and the government of Singapore. The winners were:

- His Excellency Cherif Rahmani, Algeria (Africa), for advancing environmental law in Algeria and for addressing the issue of desertification;
- Elisea 'Bebet' Gillera Gozun, Philippines (Asia and the Pacific), for pushing forward the environmental agenda in her native Philippines by winning the trust of business leaders, non-governmental organizations and political decision makers alike;
- Viveka Bohn, Sweden (Europe), for playing a prominent role in multilateral negotiations and her leadership in global efforts to ensure chemical safety;
- Her Excellency Marina Silva, Brazil (Latin America and the Caribbean), for her tireless fight to protect the Amazon rainforest while taking into account the perspectives of people who use the resources in their daily lives;
- Al Gore, United States of America (North America), for making environmental protection a pillar of his public service and for educating



Environmental activists at the UN Climate Change Conference 2007 in Nusa Dua, Bali, Indonesia, 14 December 2007. UNEP's outreach and links with the major groups of civil society spans the globe, and ranges from environmental awareness raising to facilitating the involvement of civil society in environmental governance and decision making. © Jewel Samad/AFP/Getty Images)

the world on the dangers posed by rising greenhouse gas emissions;

- His Royal Highness Prince Hassan Bin Talal, Jordan (West Asia), of Jordan for his belief in transboundary collaboration to protect the environment and for addressing environmental issues in a holistic manner;
- Jacques Rogge and the International Olympic Committee (Special Prize), for advancing the sport and environment agenda by providing greater resources to sustainable development and for introducing stringent environmental requirements for cities bidding to host Olympic Games.

SPORT AND ENVIRONMENT

UNEP continues to strengthen UNEP's cooperation with major sporting bodies, event organizers and the sporting goods industry, both to promote sustainability in sport, and to use sport as a major outreach tool. The highlight for

2007 was the commissioning of an independent environmental assessment of the Beijing 2008 Olympic Games. The report covered environmental measures being introduced by the organizers such as waste management, cleaner transport systems and water treatment, as well as new urban green belts, including a 580-hectare Olympic Forest Park. The report recognizes achievements and also highlights what more could be done to achieve greener Games, and demonstrates the substantive role UNEP can play in the sport and environment arena.

In October 2007, the seventh World Conference on Sport and Environment, held in Beijing, China, and co-organized with the International Olympic Committee, was attended by 280 participants who are stakeholders in the sporting field. The outcome of the Conference was a declaration calling on organizers of major sport events to organize climate neutral events. Also in October 2007 UNEP signed a Memorandum of

Understanding (MoU) with the Commonwealth Games, the first time such an initiative has been agreed with this worldwide organization. Previous MoUs have been agreed with organizers of the Olympic Games, the FIFA 2006 and 2010 World Cup organizing committees, the International Association of Athletics Federations (IAAF) and the Fédération Internationale de Motocyclisme. UNEP and the Organizing Committee Commonwealth Games Delhi 2010 will work together to green both the 2008 Commonwealth Youth Games in Pune, India, and the 2010 Commonwealth Games in Delhi. Specifically, this partnership will address issues pertaining to waste management and an anti-litter campaign, sustainable transport and public awareness campaigns, green procurement, ozone-friendly initiatives and carbon mitigation and offset. UNEP also has an MoU with the 2010 Vancouver Olympic Winter Games organizing committee.

Perhaps UNEP's most high profile and influential outreach initiative of 2007 was the Billion Tree Campaign. Organized under the patronage of Kenyan Nobel Peace Prize laureate Wangari Maathai, who provided the inspiration for the initiative, and Prince Albert II of Monaco (below), and in partnership with the World Agroforestry Centre (ICRAF), the campaign called on governments, businesses, communities and individuals to plant a billion trees in the year to raise awareness about climate change and environmental protection.



BILLION TREE CAMPAIGN

The Billion Tree Campaign was launched at the UNEP Governing Council in February 2007, to challenge governments, businesses, communities and individuals to plant a billion trees in the year to raise awareness about climate change and environmental protection.

At the UN Climate Change Meeting in Bali, Indonesia, in December, the UNEP Executive Director was able to announce that the billion tree target had been reached. "I am delighted to say that an initiative to catalyze the pledging and the planting of one billion trees has achieved and indeed surpassed its mark. It is a further sign of the breathtaking momentum witnessed this year on the challenge for this generation—climate change," he said. "There had been a few cynical smiles and shaking of heads when the Billion Tree Campaign was launched. Some said it would never happen, and others couldn't at first see the *raison d'être*. But citizen after citizen, community after community and country after country have proved the doubters wrong and demonstrated an abiding truth in 2007, namely that given a focus and the chance to act, millions if not billions of people around this world want an end to pollution and environmental deterioration and have rolled up their sleeves and got their hands dirty to prove the point."

The total was achieved by mobilizing every sector of society. A big boost came in Mexico where the government and local authorities—with support from the army and inspired by President Felipe Calderón—pledged and planted over 250 million trees, but the enthusiasm of individuals to make a difference is also underlined by figures collected by UNEP which indicate that half of all those who planted are often private citizens or households planting one to three trees. Significantly, another 13 per cent were planted by the private sector, while in some parts of the world refugees took up the challenge by planting over 9.5 million trees. The billionth tree planted is believed to be in Ethiopia where, as part of the country's Millennium Commemoration 2007, close to 700 million trees have been planted.

The top-ranking countries include Ethiopia (over 700 million trees planted); Turkey (400 million); Mexico (250 million); Turkey (150 million); Kenya (100 million); Cuba (96.5

million); Rwanda (50 million); Republic of Korea (43 million); Morocco (27 million); Brazil (22 million); Tunisia (21 million); Myanmar and Senegal (20 million); India, Japan and the Bolivarian Republic of Venezuela (11 million); Costa Rica (5 million); Panama (3 million) and China (1.5 million). Indonesia pledged to plant almost 80 million trees in one day in the run up to the UNFCCC conference, while Wangari Maathai's Green Belt Movement alone planted 4.7 million trees, double the number of trees it had initially pledged. The initiative will not end with the surpassing of the 1 billion tree mark. Extended for 2008, it is expected that the Billion Tree Campaign will announce 2 billion planted trees by the time of the UNEP Governing Council meeting in Monaco in February.

RAISING AWARENESS

To accomplish its objectives, UNEP works to mainstream the environment into international media coverage, produces environmental publications and forges a growing range of partnerships to promote initiatives and actions in support of UNEP's mandate. UNEP employs a diverse and innovative media mix to reach audiences which includes, in addition to 'traditional' press releases, interviews and opinion-editorials, documentary television programmes, public service announcements, film and video news releases, web-based Flash presentations, podcasts and online broadband broadcasting.

UNEP's Division of Communications and Public Information carefully monitors print, electronic and broadcast media and analyses web hit statistics on the UNEP website to assess the impact and reach of the environmental message that is disseminated worldwide. From January 2006 to December 2007, 110 UNEP news releases were electronically distributed to a total of 1,271 journalists worldwide.

During the same period www.unep.org registered 19,526,115 visits, 254,096,955 hits, and 93,769,033 page views, showing an increase of 11.5 per cent over one year, 87.6 per cent over two years, and 160.8 per cent over three years. The five most popular sites are the News Centre (16.3 per cent), GEO (11.5 per cent), World Environment Day (11.4 per cent), UNEP Expert of the Day (7.8 per cent) and the Billion

Tree Campaign (5 per cent). Multilingualism is encouraged and World Environment Day, GEO and Billion Tree Campaign—three of five most popular sites—are offered in all six official UN languages, while press releases and main sections of the News Centre are available in English, French and Chinese. In July 2007, the UNEP website was launched in Chinese.

Other outreach products include *Earth Report* programmes, co-sponsored by UNEP, which receive first broadcast on BBC World, where they are shown 5 times a week, reaching 270 million TV screens worldwide. UNEP is also a founding partner of green.tv, an online broadband broadcast platform for environmental films that reaches 40,000 users a month. Sales via the UNEP online bookshop www.earthprint.com make UNEP publications easily available. In order to make UNEP publications accessible to everyone, publications are sold at a 50 per cent discount to developing country and at a 75 per cent discount to Least Developed Country customers.

Although sales constitute only one measure of success, it is encouraging that they remain strong, with figures for the past 24 months reaching US\$250,000. UNEP's atlases such as *Planet in Peril: Atlas of Current Threats to People and the Environment*, and *One Planet Many People: Atlas of Our Changing Environment* as well as scientific publications such as *GEO-4*, the *Year Book and Global Outlook for Ice and Snow* top the list of sales. UNEP publications are also now featured on Google Books, reaching new groups and markets. Online readership of UNEP publications is also healthy. Overall readership of the two UNEP magazines—*Our Planet* and *Tunza* for youth—reached an estimated 12 million in the past 18 months (up from 6.84 million in 2005), with readers coming from over 160 countries.

A recent UNEP initiative, in partnership with the World Health Organization (WHO) and the Food and Agriculture Organization (FAO), Yale University and leading publishers is dedicated to expanding access to environmental research in the developing world. Since its inception in October 2006, Online Access to Research in the Environment (OARE) has enrolled over 600 institutions from more than 50 developing countries, providing free or reduced cost access via a dedicated Internet portal to the latest in scientific research on the environment.

RESOURCE EFFICIENCY

UNEP is working to promote resource efficiency and sustainable consumption and production in developed and developing countries. The framework for promoting sustainable consumption and production is the Marrakech Process, a global effort called for by the 2002 WSSD Johannesburg Plan of Implementation to elaborate a 10-Year Framework of Programmes on Sustainable Consumption and Production (SCP). The Commission on Sustainable Development will review the theme during its 2010–11 two-year cycle.

UNEP's SCP programme featured some important developments in 2007. International experts in the Marrakech Process discussed the first outline of a global ten year framework of programmes on SCP; a new International Panel for Sustainable Resource Management was established; there was an increased focus on SCP activities designed to address climate change; and sectoral SCP initiatives on tourism and on building and construction grew substantially, as did the work on sustainable procurement, with the addition of a new UN-wide initiative. In addition, multi-year European Commission (EC) and Norwegian funded projects were initiated, on eco-labelling and SCP for poverty alleviation respectively.

SUSTAINABLE CONSUMPTION AND PRODUCTION

The third biennial International Expert Meeting of the Marrakech Process was held in Stockholm, Sweden, in June 2007. Over 250 participants attended, with significant representation from business and civil society and a good regional balance of governments. The meeting launched two new mechanisms of the Marrakech Process: the Business and Industry Forum and the NGO Forum, both committed to bringing their perspectives and intellectual and technical resources to the Marrakech Process. A Francophone network on SCP was also launched. The Stockholm meeting agreed that the Marrakech Process has a value in itself. Not only is it developing the 10-Year Framework of Programmes, it is also provides a substantive



forum for dialogue and cooperation on SCP issues among governments and other stakeholders at international and regional levels. In its first four years, it has developed regional processes and strategies, created seven Marrakech Task Forces supporting the implementation of SCP projects, initiated a Development Cooperation Dialogue and increasingly engaged business and NGOs. A new Advisory Committee for the Marrakech Process will be established in 2008, and another round of regional consultations on SCP will be



A fisherman hunts for shellfish along a reef off the southeast coast of Zanzibar island, Tanzania, 1 December, 2007. GEO-4 warns that we are living way beyond our means. The human population is now so large that “the amount of resources needed to sustain it exceeds what is available.... humanity’s footprint [its environmental demand] is 21.9 hectares per person while the Earth’s biological capacity is, on average, only 15.7 hectares per person.” GEO-4 also warns that the well-being of billions of people in the developing world is at risk because of a failure to remedy relatively simple problems that have been successfully tackled elsewhere. © Finbarr O’Reilly/Reuters

held to elaborate and build ownership of the 10-Year Framework of Programmes for Sustainable Consumption and Production (10YFP). The global framework for action on SCP and will support the transition towards a Low-Carbon Society.

At the regional level, the fourth Regional Meeting on Sustainable Consumption and Production in Latin America and the Caribbean was held in October 2007, in Sao Paulo, Brazil. The meeting brought together around 80 participants,

representing 24 countries, including participants from governments, business and industry, trade unions, NGOs, national cleaner production centres, development agencies, and academia. MERCOSUR (the Southern Common Market created by Argentina, Brazil, Paraguay and Uruguay), the UN Department for Economic and Social Affairs (UNDESA) and the UN Industrial Development Organization (UNIDO) were also represented. The main outcomes were: development of four sub-regional action plans,

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a strengthened Regional Council of Government Experts on SCP with new members, and inputs on the outline of the 10YFP. A communiqué on SCP was developed for presenting at the LAC Forum of Ministries of Environment. Finally, MERCOSUR announced its SCP Plan of Action, and expressed its support for the Marrakech Process.

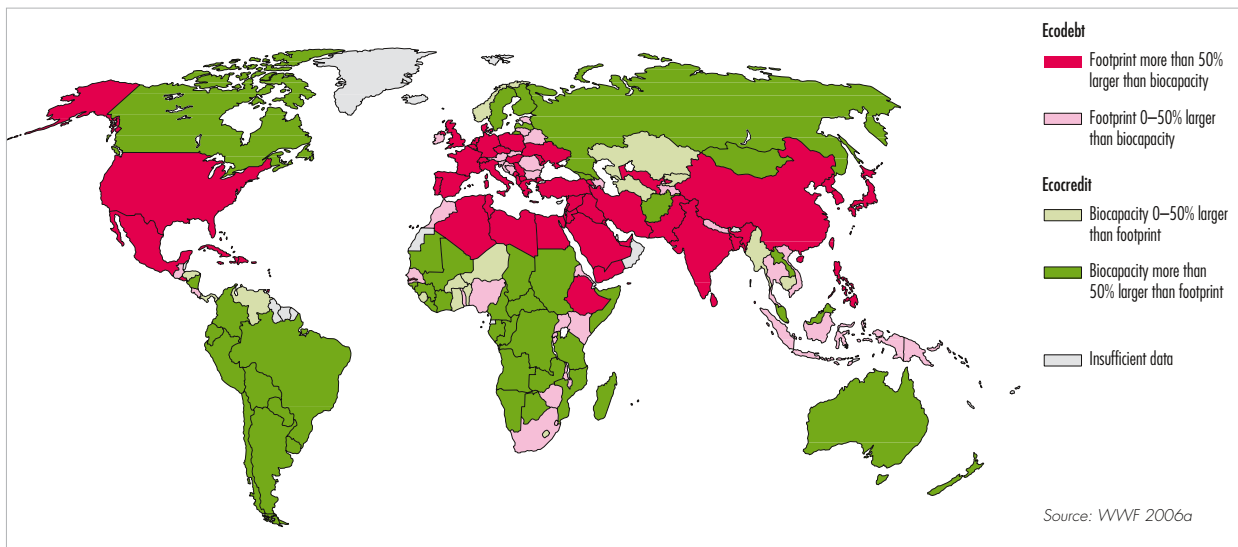
UNEP has also continued to assist in mainstreaming SCP in European governmental policies. In conjunction with the European Environment Agency (EEA) and governments, NGOs, cleaner production centres and researchers, UNEP prepared the report *Sustainable Consumption and Production (SCP) in South East Europe and Eastern Europe, Caucasus and Central Asia* as a background document for the Belgrade 'Environment for Europe' Conference in October 2007. The report provides detailed analyses of selected economic sectors, such as industry, food, building, transport and waste. The analyses are illustrated with examples of SCP initiatives at the local level, through 18 city studies commissioned specifically for this report. The results of the report will be used as a basis for the development of further SCP initiatives for the pan-European region as well as at national and local levels.

Also at the national level, UNEP and the EC organized the Brazilian National Roundtables on SCP, in Sao Paulo, April 2007. The event identified SCP priorities and some effective policies to promote SCP. It offered an opportunity to exchange experiences and best practices between Brazil and the European countries.

A second India Roundtable on Sustainable Consumption and Production was held in 19-20 December 2007, New Delhi, India. Participants developed recommendations for pilot activities for key sectors, including water efficiency, integrated waste management and awareness for sustainable goods. UNEP also commenced implementation of a two-year project focusing on the opportunities SCP offers to developing countries. The project, which responds to needs identified by the Marrakech Process and its Development Cooperation Dialogue, aims to demonstrate the potential of SCP as a tool for poverty reduction through reduction of production costs, employment generation through the creation of new markets for sustainable products, pollution prevention and the opportunity to leapfrog to more efficient and environmentally-sound technologies. The project will also provide support to public and private sector partners in developing countries who wish to design and implement policies and actions to achieve SCP.

UNEP will be exercising new leadership in this area following the establishment of the International Panel for Sustainable Resource Management, launched in November 2007 in Budapest, Hungary. The panel has the support of a wide range of governments, the EC and representatives from civil society. Assessment of the environmental risks of biofuel production and metal recycling are two of the issues that will form the initial focus of this global think-tank on resource efficiency. The Panel, which builds on UNEP's extensive expertise and ongoing projects on resource efficiency, with Ernst Ulrich von

GEO-4: Ecological creditors and debtors



Weizsaecker and Ismail Serageldin as chairs, is expected to provide hard scientific and empirical assessments and expert advice on the intensity of resource use, the security of supplies and the environmental impacts of selected products and services on a global level. The aim is to provide clear, objective and policy relevant advice on breaking the current link between economic growth and environmental degradation, contributing to this decoupling by boosting resource-efficient growth and innovation.

MARRAKECH TASK FORCES

UNEP has continued supporting the Marrakech Task Forces (MTF). A meeting to coordinate the work and cooperation with all MTFs was organised in Paris on 29 October 2007. As a follow-up, UNEP created an Intranet to support exchange of information and collaboration among all the MTF coordinators. The Task Forces have developed a range of SCP tools and manuals as well as supporting the implementation of demonstration projects to support the shift to SCP patterns. The German Task Force on Cooperation with Africa, in close cooperation with UNEP, has initiated a project on Eco-labelling for Africa. A Regional Workshop on Developing National and City SCP Programmes was held in Nairobi, Kenya, in October 2007, and two projects on Action Plans on SCP in Mozambique and Egypt were launched. The MTF on Sustainable Lifestyles conducted two workshops on communicating sustainability in Brazil and China and started the implementation of six demonstration projects on Sustainable Lifestyles in Costa Rica, USA, Brazil, China, Colombia and Peru, Philippines and Dubai. A website for this task force has been created and the task force has also contributed to substantial improvements in the UNEP UNESCO youthXchange website.

The MTF on Sustainable Public Procurement finalized its Sustainable Procurement Status Assessment, is developing a Toolkit to support governments to implement Sustainable Public Procurement programmes, and has launched a first demonstration project in Argentina. UNEP has collaborated closely with the Italian-led MTF on Education for Sustainable Consumption in organizing the first international conference on Education for Sustainable Consumption (ESC). Subsequently UNEP and this task force co-organized a workshop on ESC aimed at opening

a debate with practitioners for the development of Guidelines for ESC. The workshop took place in Ahmedabad, India, in November 2007 at the UNEP-UNESCO India Conference on Education for Sustainable Development.

As requested by the Marrakech Process, UNEP has developed *Guidelines for National Programmes on SCP*, with financial support from the United Kingdom. The *Guidelines* provide step-by-step advice to governments and other stakeholders on how to develop, implement and monitor a national SCP programme. It is illustrated by eight case studies and several other examples of good practices on how governments are implementing SCP programmes around the world. Updated information on the existing national initiatives can be found on the new UNEP clearinghouse for SCP programmes. The *Guidelines* have been tested in several demonstration projects in 2007, including in Indonesia, Mauritius and Tanzania. They have also been discussed in awareness raising sessions in Hanoi, Vietnam (April 2007), Stockholm, Sweden (June 2007), Lisbon, Portugal (June 2007), and Sao Paulo, Brazil (October 2007). Training on the *Guidelines* has been delivered in late 2007 in Nairobi, Kenya, and New Delhi, India, and will continue throughout 2008. Several countries have expressed interest in the *Guidelines*, with some countries already using core elements of the draft.

The Marrakech Process is a global effort to promote sustainable consumption and production patterns. UNEP supports the Marrakech Process, both directly and through its wide-ranging programme of work on sustainable consumption and production in areas ranging from transport to tourism, from construction to clean energy, from sustainable procurement to sport and environment.



CLEANER PRODUCTION

Integrating preventive environmental approaches remains a priority for UNEP's SCP Programme. In 2007 UNEP and UNIDO formally evaluated the joint National Cleaner Production Centres (NCPCs) programme to identify how to reinvigorate this critical network, develop national capacity to expand and accelerate the SCP agenda, and to build synergies with other centres with similar mandates. In 2008, the evaluation results will be finalized and recommendations on joint programme activities and fundraising will be implemented. UNEP also continued supporting the NCPCs in new areas, including supporting pilot projects in Costa Rica and Morocco on the Design for Sustainability (D4S) methodology, which identifies where interventions can be made in the product design process and in product supply chains to improve environmental and social performance. In addition, the SCP Branch with the NCPC in Vietnam won an EC Asia Invest project to test the D4S methodology targeting products for the European market. The project is called Cleaner Production for Better Products (CP4BP).

UNEP and UNIDO are also working in the areas of renewable energy, particularly bio-fuels, and in the area of persistent organic pollutants, issues that have emerged at the top of the international environmental agenda over the past few years. Both organizations have limited resources and could in principle compete for external funding for activities in these areas. Instead, UNEP and UNIDO have been working together for over a decade with frequent contacts between management as well as professional level staff in both organizations. For this reason, planning and implementation of activities are regularly undertaken at least in consultation and often in cooperation with each other. The aim is to deepen this collaboration in 2008 and beyond, including by promoting other tools and approaches, e.g. in the biofuels and chemical leasing areas.

The Swedish supported 'Applying Cleaner Production to Multilateral Environmental Agreements' project generated a resource kit for policy makers and CP experts on how to support national implementation of multilateral environmental agreements (MEAs) through the CP approach. The resource kit focused on three MEAs: UNFCCC, the Stockholm Convention on Persistent Organic Pollutants, and the Basel

Convention on hazardous waste. Testing and training was carried out in India, Ukraine and Southeast Asia, in close cooperation with UNIDO and the ASEAN secretariat.

Work on establishing a voluntary certification system to prevent and minimize accidents from the production and use of cyanide in the gold mining industry also made good progress through the International Cyanide Management Code. Since its launch in 2005, global coverage of the code has extended to nearly 70 per cent of the global production and use of cyanide. The priority in this area is now to also engage cyanide producers and users in East Asia and former Soviet Union republics, which are still by and large not taking part in the Code. Also in 2007, a new project on certification of emission reduction of greenhouse gases in the oil and gas sector was initiated with support from the Norwegian government. If successful, this project will establish a global support and certification system for climate change mitigation in the oil and gas sector worldwide. Finally, in Africa, the Danish-supported 'African Water Savings in the Brewery Sector' project produced the first ever pan-African assessment of water use and opportunities for water use reduction in the brewery sector. This project is now underpinning a new African public-private partnership aiming at building capacity in industry and local authorities to achieve water savings in the sector.

SUSTAINABLE PROCUREMENT

UNEP finalized the UNEP-International Labour Organization (ILO) training programme on Sustainable Procurement aimed at developing capacity among procurement officials, primarily in governments and development agencies, to understand and implement sustainable procurement practices. The first pilot training took place in Turin in March 2007 back-to-back with the third meeting of the Marrakech Task Force on Sustainable Procurement. Given the success of the first, UNEP and ILO organized a second one-week training session in December 2007, and a third is foreseen for April 2008. UNEP also organized an awareness raising event in Tunis (December 2007) to sensitize African countries to the need to start sustainable procurement practices to promote SCP approaches among African businesses, and is engaged in a project to assist China in better implementation of its green procurement legislation.

UNEP is working through the UN Environment Management Group (EMG) to promote sustainable procurement in the UN. UNEP provides the EMG secretariat. Since June 2007, UNEP's Division of Technology, Industry and Economics (DTIE) and EMG have closely collaborated to design an action plan for the UN System aimed at the implementation of sustainable procurement and office management practices. UNEP met with UN facilities managers at their annual meeting in Paris to address approaches for introducing environmental management in their operations, including measures to improve energy efficiency in buildings and the recycling of office waste. The action plan was approved by the UN procurement network in September and by the EMG in October. It includes activities such as development of product guidelines, training for UN staff and procurement officials and a revision of UN procurement practices. The EMG is also contributing to the sustainability components of the UN Capital Master Plan, a project to manage the historic renovation of the United Nations Headquarters complex. UNEP's Regional

Office for North America (RONA) is liaising closely with the US Green Building Council, a non-profit organization composed of leaders from every sector of the building industry, with more than 9,000 member organizations and 75 regional chapters, which recently joined UNEP's Sustainable Building and Construction Initiative.

The Sustainable UN programme (SUN) was also established to provide practical hands-on support to UN agencies and other public and private organizations to adopt sustainable procurement and sustainable building management practices. SUN will cooperate closely with the EMG to respond to the call by the UN Secretary General to all heads of UN agencies, funds and programmes, to become climate neutral and environmentally sustainable. SUN will, however, not limit its activities to the UN system but will promote sustainable procurement and sustainable building management in other public and private organizations. Finally, as part of moving into a newly renovated building in Paris, UNEP-DTIE also took special measures to green its office building and its procurement practices.

The UNEP-International Labour Organization (ILO) training programme on sustainable procurement aims at developing capacity among procurement officials, primarily in governments and development agencies, to understand and implement sustainable procurement practices.

ECO-LABELLING

In 2007 UNEP, together with InWent-Capacity Building International and other partners, began implementing a four-year project co-funded by the EU and the German Federal Ministry for Economic Cooperation and Development to promote eco-labelling in emerging economies. The project, titled 'Enabling Developing Countries to Seize Eco-label Opportunities' involves Brazil, China, India, Kenya and the Southeast African region, Mexico and South Africa. Eco-labels are key tools for achieving SCP as they are the bridge between consumption and production. Such labels are awarded to products that are environmentally preferable within a particular product category available in the market. They guide consumers in purchasing quality products with fewer adverse environmental impacts and, at the same time, encourage manufacturers to develop and supply environmentally sound products.

The project aims to increase the number of eco-labelled products by supporting target countries' industries, including small and medium-sized enterprises, to benefit from opportunities for environmentally preferable products in the EU and other markets. It will deliver capacity building and



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technical assistance to national industries to enable their key export products (textiles, footwear, televisions and paper) to receive the EU Eco-label or other European countries' national 'Type I' eco-labels, and help other stakeholders develop supporting policies and actions. The project will also contribute to cooperation among developed and developing countries' eco-labelling bodies. This will help to increase the reliability of eco-labels as a marketing instrument and simplify the 'eco-labelling universe' for both producers and consumers. The start-up workshop of the project was held in Bonn, Germany, in December 2007, with the participation of 70 stakeholders and target country stakeholders.

In Africa, the East African Organic Products Standard (EAOPS), developed with the technical and financial support of DTIE and its partners, under the auspices of the UNEP-UNCTAD Capacity Building Task Force on Trade, Environment and Development (CBTF), has been adopted by the East African Council of Ministers as the official East African Community voluntary standard. The EAOPS is the second regional organic standard in the world after the European Union's and the first ever to have been developed

in cooperation between public, private and NGO sector. The EAOPS is expected to boost organic trade and market development in the region, raise awareness about organic agriculture among farmers and consumers, and create a unified negotiating position that should help East African organic farmers gain access to export markets and influence international organic standard setting processes. Other achievements of this CBTF initiative in 2007 included completion of a country project in Kenya, Tanzania and Uganda that provided policy support to the governments for promoting trade in organic products. In addition, three thematic research papers were completed which provided an overview of the organic agriculture sector in East Africa, analyzed the links between food security and sustainable agriculture and documented best practices to promote organic sector.

SUSTAINABLE TOURISM

UNEP's activities on sustainable tourism in 2007 placed a much greater focus on addressing climate change. This is a critical challenge for the world's biggest industry in terms of employment and contribution to GDP in the

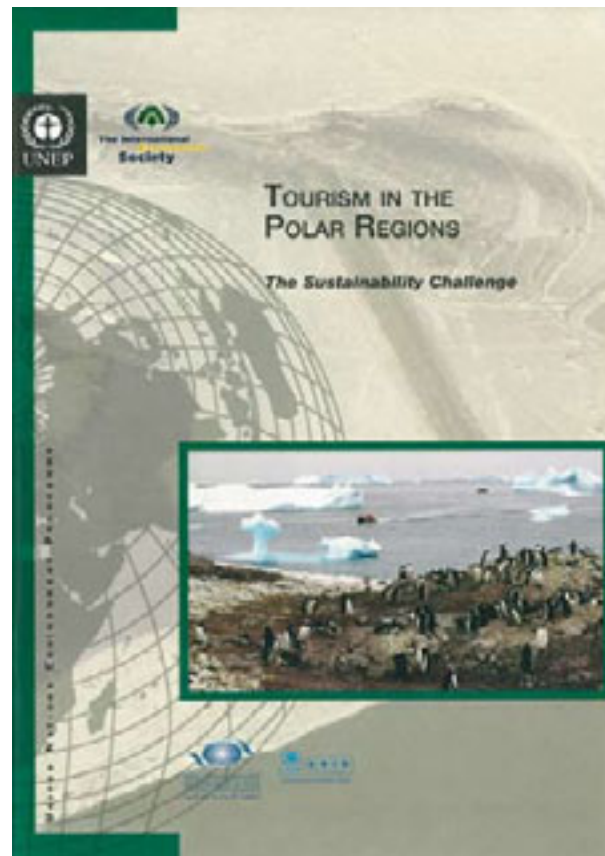
The East African Organic Mark will be used to label all produce grown in accordance with the East African Organic Products Standard, developed with the assistance of the UNEP-UNCTAD Capacity Building Task Force on Trade, Environment and Development (CBTF), and adopted by the East African Community as its official standard for organic production in May 2007.



21st century. Together with the UN World Tourism Organization (UNWTO) and the World Meteorological Organization (WMO) UNEP co-organized the second International Conference on Climate Change and Tourism in Davos, Switzerland, exploring needs and actions within the sector to both adapt to and mitigate climate change. The UNWTO, UNEP and WMO report commissioned for this conference estimated that direct tourism-generated emissions now account for 5 per cent of the global total and are projected to grow more than 150 per cent in the next 30 years under a 'business-as-usual' scenario. Following this conference, UNEP signed a Memorandum of Understanding for strategic cooperation with the UNWTO, focusing on the challenges of climate change, resource efficiency, and ecosystem management. At a regional level, UNEP is working with the Caribbean Alliance for Sustainable Tourism on a new handbook to assist local communities in coastal tourism destinations to develop and implement local integrated preparedness and emergency plans for natural disasters related to climate change.

The Marrakech Task Force on Sustainable Tourism Development continued its progress with two meetings organized during 2007. The Task Force comprises 14 countries, 11 international organizations, NGOs and industry associations and a total of 80 experts on sustainable tourism. Eleven pilot projects have been initiated by Task Force participants, including three projects managed by UNEP focusing on environmental management in the accommodation sector, awareness on tourism and climate change and sustainable tourism in natural and cultural heritage sites.

UNEP has joined forces with the UN Foundation (UNF), the Rainforest Alliance, the World Conservation Union (IUCN), the Sustainable Tourism Certification Network of the Americas and ECOTRANS, a European network of experts and organizations in tourism, environment and regional development, to develop a set of generally accepted baseline criteria with the purpose of enhancing the implementation of sustainable tourism principles. UNEP also co-organized the Global Ecotourism Conference in Oslo in May 2007, focusing particularly on the challenge of resource efficiency and SCP, and reviewing achievements in the ecotourism sector and challenges facing this segment of the industry.



UNEP's activities on sustainable tourism in 2007 placed a much greater focus on addressing climate change. This is a critical challenge for the world's biggest industry. Launched on World Environment Day, 5 June 2007, *Tourism in the Polar Regions* outlines the key features of the polar environment and describes tourism's multiple roles and impacts in both the Arctic and Antarctica.

The Marketing Assistance for Sustainable Tourism Products in Nepal project continued. This innovative project links the development of more sustainable tourism products to their markets, thereby increasing demand and promoting sustainable consumption. This EC-supported project teams UNEP's expertise with that of the Nepal Tourism Board and SNV (the Dutch development organization) and European sustainable tourism and marketing experts. UNEP is also continuing the implementation of a European Commission-funded project in India and Thailand that promotes local level emergency preparedness in tsunami-affected tourism destinations. So far, several local disaster stakeholders in the demonstration sites have been trained on Awareness and Preparedness for Emergencies at Local Level (APELL), risk assessment, emergency preparedness, risk communication, sustainable tourism and disaster management.

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A UNEP-GEF project in Africa, 'Demonstrating and Capturing Best Practices and Technologies for the Reduction of Land-sourced Impacts Resulting from Coastal Tourism' is responding to the issues identified during WSSD and the thematic group on coastal, marine and freshwater ecosystems of the New Partnership for Africa's Development. The project seeks to demonstrate best practice strategies to reduce the degradation of marine and coastal environments of transboundary significance resulting from pollution and contaminants and associated impacts. The marine and coastal resources along the 48,000 kilometre coastline of sub-Saharan African are under threat to varying degrees from development-related activities. Coastal tourism contributes in particular to the threats to coastal and marine ecosystems, even though it is often considered the 'environmentally friendly' alternative to more exploitative livelihood options. The project is being executed by UNIDO in partnership with the National Tourism Organization of participating countries. Another GEF-funded project, 'Reduction of Environmental Impact from Coastal Tourism through Introduction of Policy Changes and Strengthening Public-Private Partnerships', was launched at the joint Conference of Parties of the Nairobi and Abidjan Conventions in October 2007.

SUSTAINABLE CITIES

With half the world's population living in towns and cities, and predominantly in coastal areas, there is a strong link between urbanization and the environment. During 2007, UNEP and the UN human settlements programme, UN-HABITAT, have taken their collaboration to a new level by developing a joint framework for long-term cooperation based on the two organizations' respective mandates, expertise and activities. A draft UN-HABITAT/UNEP Partnership Framework 2008–2013 was presented during the UN-HABITAT Governing Council in April 2007. Since then, both Executive Directors have endorsed the partnership framework, which seeks to mainstream the environment into urban policy-making, incorporate global perspectives in environmental policy-making and highlight local-global linkages on environmental issues.

The partnership will focus on issue-based campaigns, and five areas for cooperation in 2008–2009 as part of the joint biannual work

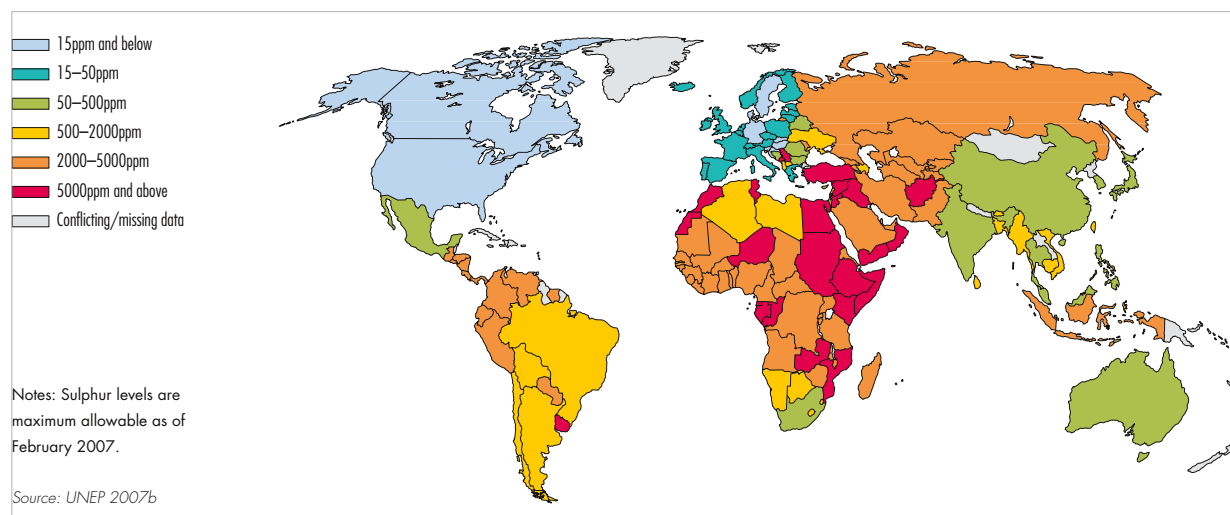
programme have already been identified. These are: Climate-resilient Cities; Global Alliance for EcoMobility; Integrated Waste Management System for Nairobi; a State of African Cities 2008 Report; and Urban Biodiversity and Ecosystems. In developing a joint work programme, UN-HABITAT and UNEP are taking the initiative to respond to the call for UN reform and stronger cooperation between UN agencies to enhance efficiency.

In UNEP's home city of Nairobi, implementation of the Nairobi River Basin Programme (NRBP) continued throughout 2007. The NRBP focuses on restoring environmental integrity of Nairobi's water catchments and its main rivers to provide improved livelihoods and health (especially for the poor), enhance biodiversity and ensure a sustainable supply of water for domestic, industrial, recreational and emergency use. The Programme has defined four main objectives: to demonstrate how industrial and socio-economic factors contribute to polluting Nairobi's rivers; to increase access to information and awareness to address pollution and its causes; to strengthen capacity among stakeholders to tackle environmental challenges; and to improve water and environmental quality in the river basin.

ENVIRONMENTALLY SOUND TECHNOLOGIES

One way UNEP is working towards sustainable urban environments and water use is through promoting environmentally sustainable technologies. UNEP's International Environmental Technology Centre (IETC) began preparation of a *Sourcebook and Training Materials on Water Use Efficiency in the Urban and Domestic Environment*, in partnership with the Faculty of Architecture of the Delft Technical University in Holland. The publication targets decision makers and the public sector dealing with water management (IWRM), and focuses on the development and incorporation of sound policies and the application of Environmentally Sound Technologies (ESTs), including water demand and availability management, reduction recycle and reuse. The training module of this publication incorporates the Sustainability Assessment of Technologies methodology developed by IETC, which will provide a practical tool for identifying best possible technological approaches for water use efficiency.

GEO-4: Global distribution of sulphur levels in diesel fuel in 2007



In 2007, UNEP continued promoting cleaner fuels and vehicles as the clearing-house of the Partnership for Clean Fuels and Vehicles (PCFV), the leading global initiative to improve urban air quality through reduced vehicular emissions. In partnership with delivery service company TNT, UNEP has developed an interactive toolkit for clean fleet strategy development that helps managers reduce air pollution and greenhouse gas emissions from their car fleets. The toolkit identifies a wide range of possible actions for improving fleet performance, as well as the environmental and economic benefits of doing so. UNEP also organized several training sessions with multinational companies and humanitarian agencies to help them develop their clean fleet strategies. Building on the success of the global lead phase-out campaign, UNEP is now working with the remaining 17 countries that still use leaded fuel to help them meet the 2008 deadline.

The challenge now is to reduce pollution by small particles (known as PM_{10}) which are mainly caused by high sulphur levels in fuels. Global sulphur levels also differ greatly by country, by region and by fuel type. For instance sulphur levels in diesel range from 10 parts per million (ppm) in Europe and the US to 10,000 ppm in parts of Africa and the Middle East. After the breakthrough agreement by governments and the private sector at the 2005 PCFV Global Partnership Meeting to significantly lower sulphur levels in vehicle fuels worldwide (below 50 ppm), UNEP has supported initiatives in 2007 at the regional, sub-regional and national level to develop action plans and standards to introduce clean fuels, which would also pave the way for the introduction of much cleaner vehicles in developing countries and countries with economies in transition.

The Japan-based IETC promotes and implements ESTs, including management systems, for disaster prevention, production and consumption and water and sanitation. In partnership with the Centre for Alternative Wastewater Treatment of Fleming College in Canada, the upgrading of IETC software SubWet 1.0 to design artificial wetlands is ongoing, to allow for the inclusion of temperate and cold climates. The model upgrading responds to the need for wider applications of artificial wetlands EST in additional locations. The new upgraded version, SubWet 2.0, will be used for training and wetland design purposes in Hailin City in the Peoples Republic of China in cooperation with UN-HABITAT and the UNEP Regional Office for Asia and the Pacific.

In Jamaica, IETC and the UNEP Caribbean Environment Programme Regional Coordinating Unit initiated a project in 2007 to address the need for improving access to water and wastewater provision in rural communities in environmentally vulnerable areas in Jamaica. The project seeks to analyze local conditions of water and wastewater provision in a number of ecologically sensitive

rural areas in Jamaica, and to identify potential provision options that are environmentally sound and manageable by communities. A community called Breadnut Walk was selected as the location for pilot-scale implementation to improve access to safe water, and several interventions for environmentally sound water provision, including improvements in rainwater harvesting and disinfection, have been identified. Results of the survey and lessons from the pilot implementation will generate data required for larger-scale interventions in Jamaica, as well as other small island states. A regional workshop was held in November 2007 to assess the progress of activities supported by UNEP in water and wastewater provision, share lessons learned and to build partnerships for greater cooperation. The project is being implemented in partnership with Rural Water Supply of Jamaica.

In Brazil, IETC continued a project on improving the quality of wastewater discharged from the municipal wastewater treatment plant in the City of Bocaina, Sao Paulo. The ultimate objective is to improve the water quality of the Bocaina

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River. The partners are the International Institute of Ecology and Environmental Management, Sao Paulo, and the International Lake Environment Committee Foundation, as well as the Municipal Government of Bocaina City. A design of a pilot artificially constructed wetland was produced using SubWet to improve discharge water quality from the treatment plant. In parallel, a training workshop for local authorities and institutions was conducted.

In Vietnam the implementation of the Resource Augmentation Project, in cooperation with Vietnam Cleaner Production Centre was successfully completed in 2007. Detailed design and drawings for wastewater reuse and rainwater harvesting system for a sugar manufacturing company were prepared and implemented by September 2007. With a total rainwater harvesting area of 280m² and estimated rainwater harvesting efficiency of 80 per cent, the company is expected to collect 448m³ of water a year. For wastewater reuse, the company has installed a cooling tower to recycle 100 m³ of water a day. To convert organic waste into a valuable resource, the composting system was improved to provide better quality of compost to farmers and reduce environmental impacts during composting of organic wastes. Water augmentation through rainwater harvesting and wastewater reuse will help the company to considerably reduce its water supply and wastewater discharge costs.

MOBILIZING THE PRIVATE SECTOR

Attention to the bottom line also drives the UNEP Finance Initiatives (FI), which are helping raise awareness worldwide of the financial—as well as societal—costs of failing to tackle global climate change. Combined with UNEP's authoritative assessments like GEO and the IPCC Assessment Reports, programmes like the FI are not only helping encourage governmental commitment to the Kyoto Protocol, but are promoting investment in clean and renewable energy by financial institutions and other investors. UNEP FI is a unique public-private partnership between the UN and the financial sector. Its mission is to identify, promote and realize the adoption of best environmental and sustainability practice at all levels of financial institution operations. UNEP FI is the largest global voluntary partnership of its kind, with over 160 signatories to the UNEP FI Statements. UNEP FI members include

banks, insurance companies, fund managers and other financial institutions. Members work collaboratively in sector, theme, and region-specific work streams to define innovative approaches to sustainable finance and responsible investment.

Members of the Asset Management Working Group (AMWG) collaborate to mainstream the integration of environmental, social and governance (ESG) issues into investment decision making. This involves understanding how ESG issues affect investment value as well as defining new approaches for their integration. Members are international asset managers based in Brazil, Canada, France, Italy, Japan, UK, and USA. In November 2006, the AMWG convened senior executives of prestigious private banks in Switzerland to explore the barriers to and opportunities for responsible investment in this domain. The outcomes of the Geneva event were captured in a report entitled *Unlocking Value: The Scope for Environmental, Social and Governance Issues in Private Banking*, launched in February 2007. It looks at the largely unaddressed demand for responsible investment products among 'high net worth individuals' whose global asset value is estimated to reach more than \$44 trillion by 2010. This pioneering report provides direction to the private banking industry.

Demystifying Responsible Investment Performance: A Review of Academic and Broker Research on ESG Factors, a study conducted by AMWG and Mercer during 2007, reviews some of the most rigorous academic and broker research on ESG factors and aims to demystify performance and encourage more in-depth quantitative ESG research. The framework and methodology were presented at the first Principles for Responsible Investment (PRI) Annual Event in Geneva in July. In 2007 the AMWG and the UK Social Investment Forum had observed a significant growth in interest in responsible investment among pension funds, but there was a clear need for many to better understand the how to integrate ESG issues into investment processes. *Responsible Investment in Focus: How Leading Public Pension Funds are Meeting the Challenge* features the most advanced and creative responsible investment strategies and practices of leading public pension funds worldwide. The report was launched in London, UK, in April 2007 to coincide with the first year anniversary of the PRI.

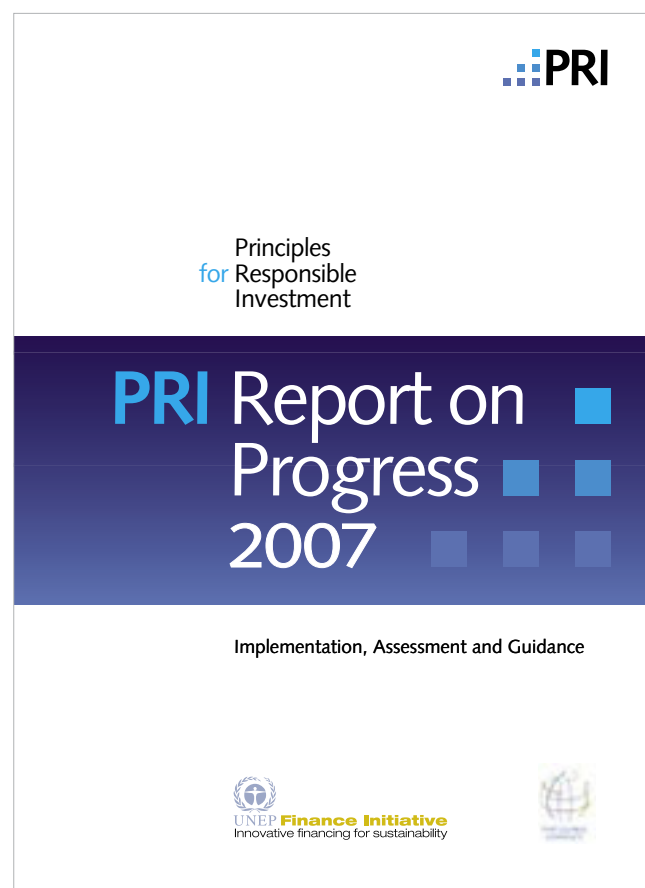
RESPONSIBLE INVESTMENT

Launched in April 2006 by UN Secretary-General Kofi Annan at the New York Stock Exchange (NYSE), the Principles for Responsible Investment have already become a landmark framework for integrating ESG issues in investment decision-making. In early 2005, the UN Secretary-General had invited the world's largest institutional investors to develop a set of Principles for Responsible Investment. Under the joint auspices of UNEP FI and the Global Compact, individuals representing 20 institutional investors from 12 countries formed the Investor Group. Having accepted ownership of the project, the Group was granted the freedom to develop the Principles as they saw fit. The Group was further supported by a 70-person multi-stakeholder Group of Experts, including members of UNEP FI's AMWG and other representatives from the investment industry, intergovernmental and governmental organizations, civil society and academia. The Principles for Responsible

Investment that emerged as a result of this process were made public in April 2006. During 2007, the PRI has grown to 275 signatories representing in excess of US\$13 trillion in assets. The first reporting and assessment process has been completed, with the aggregated results published in the *PRI Report on Progress 2007*.

Launched in October 2007 at UNEP FI's Global Roundtable in Melbourne, the CEO briefing *Responsible Property Investing: What the Leaders are Doing* summarizes key market research carried out by the Property Working Group during 2006-2007. Members of this group are encouraging property investment and management practices that achieve the best possible environmental, social and financial goals, as consistent with fiduciary responsibilities. The collection of case studies presented in the briefing highlights emerging opportunities that investors, asset managers and property managers can implement to improve the ESG performance of a property portfolio, without diluting financial return.

The Principles for Responsible Investment, established under the joint auspices of UNEP FI and the Global Compact, have become a landmark framework for integrating environmental, social and governance issues into investment decision making. During 2007, the PRI has grown to 275 signatories representing more than US\$13 trillion in assets.



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The UNEP FI Global Roundtable attracts hundreds of leading professionals from the global finance industry as it travels from continent to continent. This year's gathering provided an opportunity for bankers, insurers, asset managers and institutional investors from around the globe to discuss new ideas and challenges in the complex arena where finance, insurance, investment and capital markets meet with the sustainability agenda. UNEP FI's global network of Regional Task Forces and partner organizations brought their informed perspective exploring regional and national developments. This year's Global Roundtable in Melbourne was attended by more than 450 participants, among these more than 170 from outside Australia.

HUMAN RIGHTS

Responsibility also means considering human rights. The UNEP FI Human Rights Work Stream is committed to exploring the intricacies between human rights and financial sector practices. Members currently collaborate to de-mystify the language and jargon surrounding the human rights agenda so they can make responsible decisions within their spheres of influence.

UNEP FI signatories joined leading experts in discussing human rights issues pertaining to the financial sector at a consultation with Professor John Ruggie, the Special Representative to the UN Secretary-General on Human Rights and Transnational Corporations and Other Business Enterprises in February at the Office of the High Commissioner for Human Rights, in Geneva. While recognizing the strengths and weaknesses of the Equator Principles in relation to project finance, there was a clear call for development of dialogue surrounding other lending activities. Professor Ruggie's report on Human Rights and the Finance Sector was presented to the Human Rights Council in March 2007.

An online human rights 'signposting' tool has been developed over the course of 2007. The tool is a 'one stop shop' guidance resource, which is commercial, feasible, practical and relevant to the finance sector. It includes background information and context, and a focus on specific issues relating to different industry sectors and geographies. Key questions to assist in impact assessment are included. The online tool is designed to assist frontline business and client officers in the lending

and investment community. It was launched at the UNEP FI Global Roundtable in October 2007.

FINANCE AND AFRICA

The UNEP FI African Task Force (ATF) members range from commercial banks and development banks to asset managers. They are united by a common objective of defining approaches to sustainability for the finance sector in Africa. *Banking on Value: A New Approach to Credit Risk in Africa* was launched at the World Economic Forum in June 2007 by UN Secretary-General Ban Ki-moon and UNEP Executive Director Achim Steiner. The report assists African financial institutions to integrate ESG issues into their lending business activities and credit risk management policies.

Best practice and guidance is based on the approaches of leading South African and Nigerian banks. An online training programme was made available to financial institutions throughout Africa during November and December 2007. The course lasts roughly three weeks and is part of the UNEP FI regional environmental and social risk analysis (ESRA) training initiated in Latin America.

The State of Responsible Investment in South Africa was launched at South Africa's stock exchange in October 2007. The report details how the South African investment community perceives ESG issues and integrates them in decision making and ownership practices. The report is expected to provide the South African investment community clarity on action needed for sustainable long-term investment. A total of 32 pension funds, 19 asset managers and 11 investment service providers were surveyed.

Also in October UNEP FI ATF held its inaugural East African Roundtable on sustainable finance in Nairobi, Kenya. The event, supported by Citigroup, welcomed over 50 financial sector, government and NGO delegates from Kenya. Roundtable discussions focused on concepts of sustainable finance and enabled delegates to deepen an understanding of responses the finance sector can take. It is hoped discussions will provide a fruitful platform from which financial institutions in East Africa can embrace their role in sustainable development.

Work is also under way to provide guidance to overcome barriers and increase commercial microfinance and sustainable micro-enterprise investment in Africa. Africa is the poorest continent. Commercial microfinance could enable millions of African micro-entrepreneurs to lift themselves out of poverty. To date, there has been very little commercial microfinance directed towards this part of the world. With funding from the Gates Foundation a survey is currently going forward to understand how to overcome this. Findings will be launched in a report in early 2008. In September 2007, UNEP FI and the Sustainable Finance team at the World Wide Fund for Nature (WWF) co-hosted an international workshop in Geneva, Switzerland, on Innovative Financing for Sustainable Micro-Enterprises in Africa.

ASIA PACIFIC TASK FORCE

Asia-Pacific was one of the fastest growing regions in terms of new signatories to the UNEP FI in 2007. Since the 2006 AGM, UNEP FI has welcomed 5 new signatories from China, India and Korea. In the past few years, Korea has been the fastest growing country in terms of membership recruitment. The Asia Pacific Task Force (APTF) Outreach Group organizes sustainable finance workshops in the region. A workshop on climate change in Bali, Indonesia on 6 December, in collaboration with the Ministry of Environment, Indonesia, targeted Indonesian financial institutions.

APTF has been involved in two e-learning courses offered by UNEP FI from 2007. The APTF

The online training course *Climate Change: Risks and Opportunities for the Finance Sector* was first run in June 2007.

understanding the impact of environmental and social considerations on financial performance

Course Information

- [Course Introduction and Background](#)
- [Course Goals and Target Audience](#)
- [Course Outline](#)
- [Application Form](#)
- [Fees, Certificates and Pre-Selection](#)
- [Technical Requirements](#)

Registration Now OPEN

UNEP Finance Initiative (UNEP FI) e-Learning Course on Climate Change: Risks and Opportunities for the Finance Sector

Registration for the June 2-23, 2008 course is OPEN.

The United Nations Environment Programme Finance Initiative (UNEP FI) is pleased to announce the re-run of their e-Learning course "Climate Change: Risks and Opportunities for the Finance Sector." The course is supported by the [UNEP FI Climate Change Working Group](#), ANZ, National Australia Bank and Westpac, through the UNEP FI Australasian Credit Risk Advisory Committee, EPA Victoria, Bank of America, and UNITAR.

UNEP FI, leveraging the e-Learning infrastructure of The United Nations Institute for Training and Research (UNITAR), will offer courses on this important issue over the internet with the aim of increased quality and effectiveness in training. It is hoped that this initiative addresses one of the key challenges facing many finance-sector executives from around the globe. A recent survey of UNEP FI's regional taskforce members revealed that knowledge of climate change, its associated risks and opportunities for the finance sector, is quite weak. This hinders the development of effective internal policies and their delivery, and also hampers the take-up and success rate of the Kyoto Protocol flexible mechanisms. Through e-Learning and other outreach activities the collaborating institutions hope to mitigate this situation.

Resource efficiency

Australasia Group's Environmental Credit Risk Advisory Committee and Environment Protection Agency PA Victoria have been key contributors to the development of the online training course *Climate Change: Risks and Opportunities for the Finance Sector* which was first run in June. The Outreach Group also hosts the e-learning programme on environmental and social risk analysis in the Asia-Pacific region. The pilot course of this programme was completed in August and the first course for Asia-Pacific took place in November 2007.

The APTF Japan and Korea Groups have been working on dissemination of the sustainable finance agenda within their respective countries. The Japan Group published its first brochure. As well as providing a summary of the Group's activity until the end of 2006, the bilingual brochure also includes information on Japanese environmental policies relevant to the finance sector. The Group is currently developing the Japanese adaptation of the UNEP FI e-learning course on Climate Change. The Korea Group met in March to discuss the GRI *Financial Services Sector Supplement* and encouraged participation in the GRI reporting and the piloting project.

EUROPE AND NORTH AMERICA

Following the high interest of Greek financial institutions and the steep increase in signatory numbers in Greece, the Central And Eastern Task Force (CEETF) held a workshop on sustainable banking and insurance in January in Athens. The workshop focused on a country

report on sustainable finance based on a survey undertaken among Greek financial institutions and stakeholders. The workshop attracted more than 60 participants and high media interest. Based on the strong presence of Greek financial institutions in the Balkans, the CEETF organized two awareness raising seminars in Romania and Bulgaria in early October 2007. Both events were hosted by CEETF member companies.

A key priority in 2007 for CEETF was implementing the on-line course on environmental and social risk analysis in lending and investment. The course targets risk managers in financial institutions, but is also open to other financial sector stakeholders. Allowing for only 20 participants, the course set-up ensures a high interaction with the tutors as well as excellent understanding and practical knowledge of assessing and dealing with environmental and social risks. A pilot run of the course was held in August 2007. The first fee-paying version of the course was held in November 2007.

The North American Task Force is working to incorporate the principles of sustainable development as normal business practice throughout the North American financial sector. It published the report *Green Financial Products in North America* which examined best practice across the globe and key opportunities for North American financial institutions. The report analyzed product and services development in a number of different sectors, including retail and corporate banking, project finance, asset management and investment banking, and insurance.

In 2007 the UNEP UNESCO youthXchange website was upgraded with sections that detail the work of partners, invite the readers to send feedback and give out postcards, 17 new translations of the guide and other related materials, and an entire new web-site in French. The second edition of the youthXchange guide (in English) has been finalized and is available online and four more translations have been completed or are close to completion: Slovenian, Greek, Japanese and Philippine. UNEP organized youthxchange workshops in France (July), Germany (August) and India (November). Partners organized youthxchange workshops in Korea, Yemen, Oman, Dubai, Peru, Colombia, Algeria, and France.



THE REGIONAL PERSPECTIVE: LATIN AMERICA

The abundance of water, forest, land and biodiversity resources in Latin America and the Caribbean is a crucial factor in achieving the economic and social development goals of the region. However, the contribution this natural wealth can make to achieving social, economic and environmental goals is affected by poverty, growing inequality in income distribution, land-use management problems, particularly in urban areas, and the dependence of many countries in the region on the exploitation of natural resources. These problems place growing pressure on the environment and natural resources.

Faced with this dichotomy of wealth and growing pressure on the ecosystems in the region and the need to address the environmental priorities identified by the Forum of Ministers of the Environment of Latin America and the Caribbean, the UNEP Regional Office for Latin America and the Caribbean (ROLAC), based in Panama City, Panama, oversees a range of regional, sub-regional and national activities that respond to the Latin America and Caribbean Initiative for Sustainable Development (ILAC).

To support implementation of the decisions of the Forum of Ministers, UNEP promotes coordination with the other agencies of the Inter-Agency Technical Committee of the Forum of Ministers—UNDP, the Inter-American Development Bank (IDB), the Economic Commission for Latin America and the Caribbean, and the World Bank. Other UNEP activities in the region to promote capacity building and technology support are carried out in coordination with the Andean Community of Nations, the Caribbean Community and Common Market, the Central American Commission on Environment and Development and the Southern Common Market (MERCOSUR), as well as other UN agencies, such as UN-HABITAT, and the Pan American Health Organization.

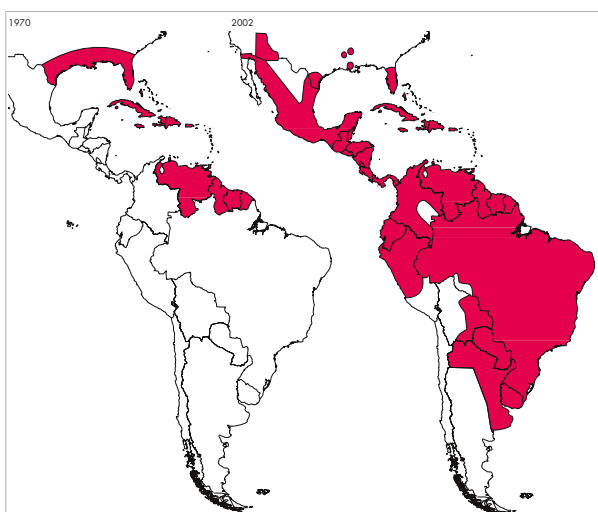
UNEP activities in the region have responded to sub-regional and national requirements and priorities in spheres linked to the promotion of a cross-cutting approach to the environmental perspective in national policies, sustainable urban management, environmental assessment and the use of environmental indicators, and, in general, new environmental challenges, particularly the region's vulnerability in relation to climate change. The institutional development of the countries of the region has been backed through activities in the field of environmental legislation and

through cooperation projects aimed at expanding capacity to fulfill obligations under the multilateral environmental conventions. With the Global Environment Facility (GEF), UNEP is promoting projects linked to the sustainable development of Small Island Developing States, the sustainable use of natural resources and ecosystems, integration of the environmental perspective in development processes and strengthening of the regional environmental agenda. The participation of civil society has contributed significantly to the activities carried out by UNEP in Latin America and the Caribbean, and has enriched the analysis of and search for options to address the environmental problems facing the region.

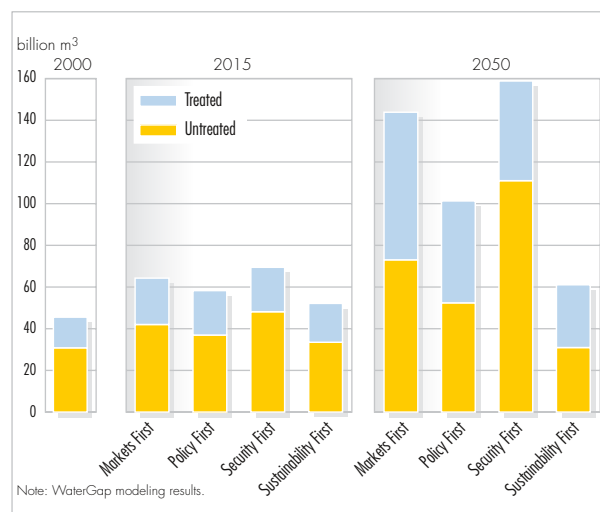
The private sector is playing a significant role. The UNEP Finance Initiatives (FI) Latin American Task Force (LATF) members include a diverse range of banks from commercial banks to development banks and microfinance specialists. They are united by a common objective of defining approaches to sustainability and promoting best practice for the finance sector in Latin America. Activities in 2007 included a Sustainable Finance Introductory Conference for the Mexican Financial Sector, in collaboration with the Mexican Institute of Ecology and HSBC Mexico; an Environmental and Social Credit Risk Training Programme in Mexico, Chile and Venezuela; and the design and piloting of an Online Risk Observatory. The Observatory is an online interactive database of cases and illustrations of environmental and social risk management. By centralizing information on how such risks have been and can be dealt with, the Observatory acts as a desk-top tool for financial analysts.

In Brazil, the Corporate Sustainability Index of the Sao Paulo Stock Market, launched in December 2005 to monitor performance of the 40 Brazilian companies that are most committed toward environmental and social sustainability, receives an annual update. To make the implementation of this index feasible and to promote its continuous improvement, a deliberative board was established. It currently includes the Brazilian Private Pension Fund Association, the Association of Capital Markets Analysts and Investment Professionals, the National Investment Banks Association, the Brazilian Corporate Governance Institute, Ethos Institute for Business and Social Responsibility, the International Finance Corporation and the Brazilian Ministry of the Environment. In March 2007 UNEP joined the board

GEO-4: Re-infestation by *Aedes aegypti* in Latin America and the Caribbean



GEO-4: Treated and untreated wastewater – Latin America and the Caribbean



Focus on BUSINESS

With its history of innovation, the private sector can find solutions to many of the development issues that need to be faced over the coming decades, for instance by finding new approaches to supplying sanitation, fresh water and clean, affordable energy. UNEP's strong relationships with business and industry are helping to incorporate environmentally responsible thinking throughout the sector. Private sector operations are increasingly realizing that social and environmental responsibility can provide both short and long-term rewards, and that ignoring the triple bottom line of sustainable development will ultimately be detrimental to their own business. That is why companies are signing up to programmes such as the UN Global Compact and UNEP's Global Reporting Initiative.

In April, UNEP hosted the first Business for Environment (B4E) Summit in Singapore, in cooperation with the UN Global Compact and with the support of the Government of Singapore, in advance of the UNEP Champions of the Earth award ceremony. Nearly 1,000 business delegates from Asia-Pacific and beyond heard first-hand from senior executives about their approaches to corporate environmental responsibility. Chaired by the UNEP Executive Director, a lively discussion panel on climate change included senior representatives from Dow Chemicals, the Carbon Disclosure Project and Greenpeace. UNEP will repeat the highly successful event with partner organizations in Singapore in April 2008.

UNEP was also closely involved in preparations for the UN Global Compact Leaders Summit, held in July in Geneva, Switzerland. The event was attended by over 1,000 representatives from business and organizations active in the corporate responsibility field. High-level participation from the public sector included the UN Secretary-General, the UNEP Executive Director and other UN agency heads, the UN General Assembly President and ministers from various portfolios participating in a discussion on the role of voluntary measures and government in promoting social responsibility. The event included the launch of the Caring for Climate statement, signed by chief executive officers (CEOs) of 153 companies in an initiative led by the UN Global Compact, UNEP and the World

Business Council for Sustainable Development (WBCSD). Signatories to the statement, including 30 from the Fortune Global 500, commit their companies to "taking practical actions to increase the efficiency of energy usage and to reduce the carbon burden of products, services and processes, to set voluntary targets for doing so, and to report publicly on the achievement of those targets annually."

At the Summit, UNEP launched *Caring for Climate: Tomorrow's Leadership Today*, which provides a collection of case studies of good practices by companies taking climate action. The Summit also saw the launch of *The CEO Water Mandate*, a statement for business action that covers several focus areas, ranging from supply chain and watershed management to community engagement and transparency. It includes a number of references to water-related activities by UNEP.

RESPONSIBILITY AND SUSTAINABILITY

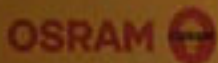
The UNEP 24th annual consultative meeting with business and industry, held in Sao Paulo, Brazil, in October 2007, with the support of Brazilian business and the UN Global Compact, took the form of a 'Business & Industry Global Dialogue'. Over 140 delegates and representatives from business organizations, industry and financing institutions, public institutions and NGOs attended the discussions on new trends, policy developments and UN-business partnership opportunities to address climate change, energy and responsible chemicals management. Speakers participating in the panel discussions included representatives from institutes such as the Pew Centre and the World Resources Institute, The Energy and Resources Institute (TERI) in India, the Council for Scientific and Industrial Research (CSIR) in South Africa, as well as the Chief Executive of the Global Environment Facility (GEF) and the Minister of Environment of Uruguay.

UNEP continued to participate in the ISO 26000 process to develop a new guidance standard on social responsibility, which is expected to be finalized in 2009. During one of the two meetings of nominated experts, UNEP co-organized a

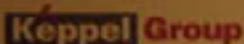


B4E

GLOBAL BUSINESS SUMMIT
FOR THE ENVIRONMENT



SUPPORTING SPONSORS



Achim Steiner, United Nations Under-Secretary-General and Executive Director of United Nations Environment Programme (UNEP) speaks at the opening of the Global Business Summit for the Environment in Singapore, 19 April 2007. More than 600 business executives and experts discussed how the corporate world can help tackle the threat of climate change. The two-day Global Business Summit for the Environment (B4E) was the first major international conference focusing on business and the environment in Asia-Pacific.
© Roslan Rahman/AFP/Getty Images

workshop with public officials on the changing role of government and public institutions in promoting social responsibility. UNEP presented its role in greening the UN system, following a call by the UN Secretary-General for UN headquarters, UN agencies and UN offices worldwide to obtain carbon neutrality and environmental sustainability in their operations.

UNEP continued its role as a Board Member and participant in the Global Reporting Initiative (GRI), and in supporting the GRI Readers Awards that were launched in 2007. UNEP collected reporting from 19 business and industry organizations on actions they are taking to build capacity of company managers and employees in developing countries in the environmental field. This was presented at the event on Industrial Development co-hosted with the International Institute for Sustainable Development (IISD) and with the support of the Governments of Norway and South Africa at the 15th session of the Commission on Sustainable Development

(CSD15) in New York on 7 May. Focusing on responsible management of supply chains and investment, the event speakers included business, labour, public institutions and NGOs such as Consumers International and the Coalition for Environmentally Responsible Economies (CERES).

In 2007 UNEP joined UNDP and IUCN in announcing five new Seed Awards winners, coming from Sierra Leone, Peru, the Philippines, Uruguay and Peru. This formed part of the further development of The Seed Initiative and its promotion of local level partnerships to implement the goals of the Millennium Declaration and the WSSD. It is planned to turn this biennial award into an annual one, and strengthen it with support services and research from partners such as the IISD. In November the initiative also co-hosted a partnerships workshop with past and new Seed Award winners in Pretoria, with the Government of South Africa, represented on the Seed Board by science and technology Deputy Minister Dereck Hanekom.

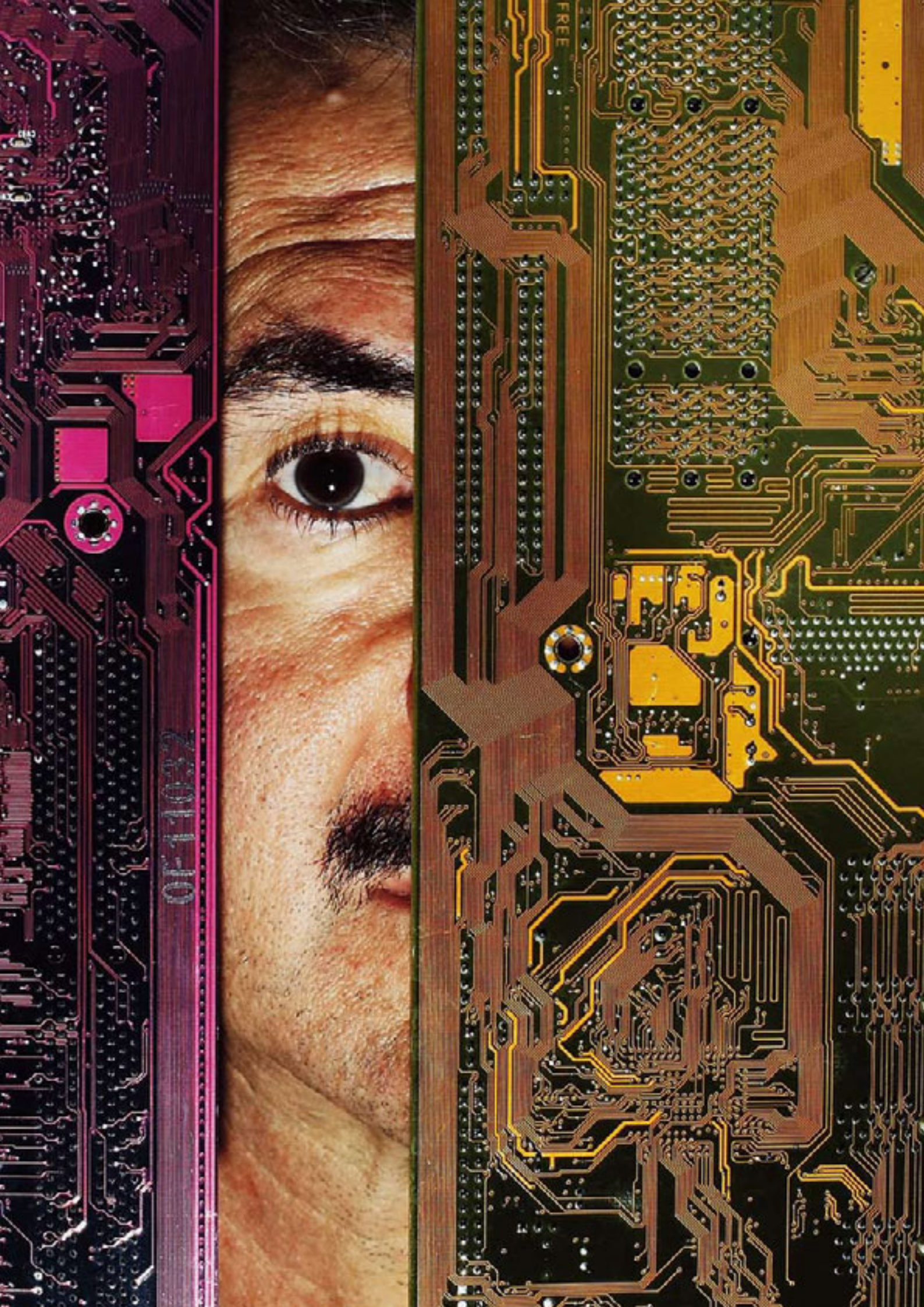
HARMFUL SUBSTANCES AND HAZARDOUS WASTE

UNEP is the main driving force in the UN system for activities related to the sound management of chemicals. The aim of activities is to promote chemicals safety and provide countries with access to information on toxic chemicals. UNEP promotes chemical safety by providing policy advice, technical guidance and capacity building to developing countries with economies in transition, including activities on chemicals related to the implementation of the Strategic Approach to International Chemicals Management (SAICM).

SAICM was adopted in 2006 by the International Conference on Chemicals Management. UNEP hosts the SAICM Secretariat, which supports the implementation of SAICM in all sectors by servicing the International Conference on Chemicals Management and regional intersessional meetings, maintaining a network of stakeholders and facilitating the Quick Start Programme, which assists developing countries and those with economies in transition in their initial implementation of SAICM, including through a UNEP-administered trust fund. In addition, UNEP developed a work plan for implementing the environment-related components of SAICM. The work plan was noted by the Governing Council of UNEP at its 24th meeting. The work plan contains activities related to: capacity building; risk assessment, management and communication; specific chemicals such as mercury, lead and cadmium; and specific multilateral environmental agreements, such as the Stockholm Convention on Persistent Organic Pollutants and the Rotterdam Convention on the Prior Informed Consent for Certain Hazardous Chemicals.

Tony Domanski, Operations Manager IT and Infrastructure for the Reverse Garbage Co-op, poses with printed circuit boards from a computer undergoing recycling 4 June, 2007 in Sydney Australia. Machines such as computers and personal entertainment devices are being recycled by the Co-op in Sydney's West, preventing them from ending up in landfill sites. The mother-boards and other usable materials are removed and re-used in rebuilt machines, and also sold on to artists for artwork. The so-called 'e-Waste' from such machines is currently growing at over three times the rate of general municipal waste in Australia. The pattern is similar across the globe. In West Asia, e-waste is one of the fastest growing segments of the waste stream. Despite tentative initiatives by some countries, agencies responsible for waste management in the region have inadequate knowledge of e-waste composition and management. In addition, the status of e-waste in most countries in the region is unknown and the region lacks standardized methodologies and guidelines to conduct such an assessment. To address this, the UNEP Regional Office for West Asia is working with the International Telecommunications Union (Arab Region) and the Basel Convention Regional Centre in Cairo, Egypt, to promote e-waste management in West Asia by initiating regional level capacity building through knowledge sharing, in collaboration with governments in the region, expert institutions and relevant agencies. A pilot project for the region will start with a Regional Seminar in March 2008. © Ian Waldie/Getty Images





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FREE

FREE

STRATEGIC APPROACH TO INTERNATIONAL CHEMICALS MANAGEMENT

The year saw the consolidation of the SAICM secretariat's implementation efforts. Regional consultations were organized for the Asia-Pacific region, Arab countries, EU-JUSSCANNZ countries (European Union countries plus Japan, the United States, Switzerland, Canada, Australia, Norway and New Zealand) and Pacific Island countries. A project to develop modalities for reporting on SAICM implementation was initiated under the guidance of an international steering committee. The Executive Board of the SAICM Quick Start Programme adopted a business plan for the programme and, at the time of writing, it was expected that the Quick Start Programme Trust Fund would achieve its 2007 replenishment target of \$6.3 to \$6.6 million. In 2007 the Trust Fund Implementation Committee approved 32 projects for a total funding of approximately \$4 million. The projects will be implemented by 29 governments and three civil society organizations, involving activities in 38 countries, including 13 Least Developed Countries and four Small Island Developing States. During the year, the secretariat was joined by a staff member from the World Health Organization and agreement was reached to hold the next session of SAICM's governing body, the International Conference on Chemicals Management, in conjunction with the World Health Assembly in May 2009.

SAICM recognizes that sustainable development entails sound management of chemicals. However most development plans in developing countries and countries with economies in transition do not prioritize sound chemicals management. The Chemicals Branch of UNEP has therefore developed a partnership programme with UNDP on integration of sound management of chemicals into the development plans of developing countries and countries with economies in transition. Building on the UNEP-WHO health and environment linkages initiative, the aim of the partnership is to assist developing countries to assess their sound management of chemicals regimes relative to the strategic objectives of the SAICM, and put in place a plan to begin addressing gaps in the national regime. It also aims to improve the incorporation of national sound management of chemicals priorities into the national development planning agenda (e.g. Poverty Reduction Strategic Plans, Country

Assistance Strategies, UN Development Frameworks, etc.). The programme started in November 2007 and will be carried out in at least six countries (Uganda, Zambia, Ecuador, Cambodia, the Former Yugoslav Republic of Macedonia and Belarus). Other countries may be included at a later stage depending on available funding.

The facilitation of sound management of chemicals will also depend on the development of national legal and institutional infrastructures in countries. However, most developing countries and many countries with economies in transition have not managed to establish the necessary national legal and institutional infrastructure for sound chemicals management. Based on that, the Chemicals Branch of UNEP has received funding from Sweden to carry out a project on development of legal and institutional infrastructure to support sound chemicals management. The project is in its first phase, which consists of regional workshops with the objective of identifying and assessing needs and non-financial barriers for the development of relevant legal and institutional infrastructure. Regional workshops have been organized in the Central and Eastern European region and the Asia-Pacific region.

ACCESS TO INFORMATION

In a rapidly globalizing economy access to scientific and technical information has a critical role to play in development and the sound environmental management of chemicals, as called for in Chapter 19 of Agenda 21. In line with the objectives of the 2002 World Summit on Sustainable Development of ensuring the sound management of chemicals by 2020, UNEP Chemicals launched the Chemical Information Exchange Network (CIEN) project to improve access to sources of information on chemicals and to facilitate networking at the national and sub-regional levels. Existing projects in 13 African countries were strengthened, with emphasis on building their technical capacity in using CIEN as a base for their reporting mechanism for the implementation of multilateral environmental agreements (MEAs). Following the regional workshops' recommendations concerning strengthening the capacity of the Stockholm Convention, UNEP Chemicals launched several tools to catalyze information exchange. These

include e-learning tools to assist countries in building capacity for environmentally sound management of chemicals through improved access to and use of scientific and technical information on chemicals together with an e-forum to provide a platform for the exchange of information and experience among national stakeholders and other individuals involved in the use and management of chemicals.

In Asia-Pacific, UNEP began implementing the Regional Enforcement Networking Project in June 2007. Funded by the Swedish International Development Cooperation Agency (SIDA), the project aims to initiate regional cooperation between countries in Northeast, South and Southeast Asia. It will enable them to gain better control over their import and export of chemicals—including ozone-depleting substances (ODS), persistent organic pollutants (POPs) and chemical waste—by promoting further regional cooperation for the control of transboundary movement of those chemicals. The project will improve communication channels for informal information exchange and develop common tools for data management and collaboration by extending the existing ODS enforcement network and integrating control on chemicals covered by the Montreal Protocol and the Rotterdam, Stockholm and Basel Conventions. The first Southeast Asia-South Asia Regional Enforcement Network Workshop was held in November 2007 in Bali, Indonesia.

LIFE CYCLE INITIATIVE

The use or misuse of chemicals highlights the fact that for many of us—consumers and producers alike—our ability to think beyond the immediate horizon of a product's purpose back to its genesis or forward to its disposal is lacking. Together with the non-profit Society of Environmental Toxicology and Chemistry (SETAC), UNEP runs the Life Cycle Initiative, promoting practical approaches for evaluating the environmental, social and economic opportunities, risks and trade-offs associated with products and services over their entire life cycle, and preventing negative impacts.

In 2007, the Life Cycle Initiative launched Phase II (2007–2010) with 10 projects dealing with methodologies for life cycle approaches, life cycle management for business, capability development



Most consumers and producers lack the ability to think beyond the immediate horizon of a product's purpose back to its genesis or forward to its disposal. The UNEP Life Cycle Initiative seeks to address this.

and life cycle approaches for resources, materials and consumer products. These projects include the roundtable with the World Business Council for Sustainable Development, the LCA Award 2008, an open data format converter of Life Cycle Inventories, the global Life Cycle Inventory database registry, the improvement of characterization factors in Life Cycle Impact Assessment of eco-toxicity, and methodologies for various aspects within Life Cycle Assessment, such as social aspects, water use and consumption, indoor exposure, etc. One hundred and fifty international experts are collaborating with the Initiative and more than 100 countries are represented in this life cycle community.

One of the main outcomes of 2007 was the electronic library on Life Cycle Management and the publication *Life Cycle Management: A Business Guide to Sustainability* which presents over 20 business case studies, from small-size enterprises to corporations, which have in common the implementation of life cycle approaches in their daily practices, including design for sustainability, issues on supply chain management and life cycle costing. The Life Cycle Assessment 2007 Award ceremony of best

Harmful substances and hazardous waste

life cycle projects coming from non-OECD countries highlighted 14 successful projects, with the top six presented by South Africa, Zimbabwe, Brazil, Ghana and Taiwan.

WASTE MANAGEMENT

With support from the Norwegian Government, supplemented with Japanese Trust Fund and Environment Fund money, UNEP's International Environmental Technology Centre (IETC) continued the implementation of three pilot demonstration projects on Integrated Solid Waste Management in Wuxi New District of the People's Republic of China, Pune City in India and Maseru City in Lesotho. A fourth pilot project is being implemented in Penang, Malaysia, on waste exchange. Integrated Solid Waste Management plans cover all waste sources, including municipal and industrial, and all the stages of the waste management chain including waste minimization, waste segregation for reuse and recycling, collection and transportation, sorting for material recovery, treatment and energy recovery and final disposal with landfill gas utilization. In line with the Bali Strategic Plan, the emphasis is on capacity

building of local partners, so they can undertake similar projects for other cities in their countries and regions.

Training materials have been developed for each activity, such as quantification and characterization of waste, assessment of current waste management systems and identification of gaps, target setting for Integrated Solid Waste Management, identification of stakeholders' concerns, development of an Integrated Solid Waste Management Plan with appropriate policies and technologies, preparation of an implementation strategy, and establishing a monitoring and feedback system. The knowledge and experience gained from this project is being used to develop a training package for policy makers and practitioners to enable them to develop Integrated Solid Waste Management plans.

New waste streams, such as e-waste, are becoming very important, especially to waste pickers and waste recyclers, due to their economic value. However, they also contain quantities of hazardous substances. To reduce the risks and to increase the recycling of e-waste, two manuals

In Nairobi, Kenya, where UNEP is headquartered, solid waste management is a long neglected problem. Most of the waste generated by over four million people living in the Kenyan capital ends up at the 30-acre Dandora dumpsite, which receives an estimated 2,000 tonnes of rubbish every day, including hazardous waste, ranging from toxic chemicals to medical sharps.



have been prepared to assist policy makers and practitioners to assess the quantities and composition of e-waste and to develop e-waste management plans focusing on minimizing risks and maximizing recycling.

In 2007, UNEP commissioned a study on the environmental and public health impacts of the Dandora dumpsite in Nairobi, Kenya. The study, carried out in collaboration with a medical team from Nairobi's Kenyatta Hospital and the St. John's Informal School, examined 328 children and adolescents living close to the dumpsite and found high levels of contamination with heavy metals such as lead, cadmium and mercury, often exceeding internationally accepted levels. Almost half were suffering from respiratory diseases, such as chronic bronchitis and asthma.

At the launch of the report which took place just metres away from the Dandora dumpsite, UNEP Executive Director Achim Steiner pledged UNEP's support to Nairobi City Council in developing an Integrated Solid Waste Management system in collaboration with other UN agencies. Soon after the launch, the City Council announced that, after 30 years, the Dandora dumpsite will be closed and rehabilitated, and a modern waste landfill site will be created elsewhere. UNEP is now working with the NCC officials to develop next steps for the Dandora dumpsite and, more broadly, an improved waste management system in Nairobi, which should take into account environmental and socio-economic concerns.

ENVIRONMENT AND HEALTH

Issues of chemicals and hazardous waste highlight the profound risk to human health from inadequate management and disposal of these substances. As part of the World Health Organization (WHO)-led European Ministerial Conference on Environment and Health, UNEP, through its Regional Office for Europe, participates in the European Environment and Health Committee, a unique coalition that brings together representatives from health ministries, environment ministries, intergovernmental organizations and civil society organizations, to oversee coordination and follow-up of the outcomes of the Environment and Health process in the European region. The Committee helps to promote reporting on the implementation of commitments made at a previous conference

where the Ministers committed to develop policies and actions to achieve a safe environment in which children could reach the highest attainable level of health.

The main outcomes of the last conference in 2004 was the Children's Environment and Health Action Plan for Europe containing four Regional Priority Goals aimed at protecting the health and well-being of children from environmental hazards linked to water and sanitation, accidents and injuries, outdoor and indoor air pollution, and exposure to hazardous chemicals and physical and biological agents. UNEP attended the intergovernmental midterm review meeting in Vienna, Austria, in June 2007. The next Ministerial Conference on Environment and Health will take place in Italy in November 2009.

In Asia-Pacific, the First Ministerial Regional Forum on Environment and Health, was held in August 2007. Ministers and high-level officials of environment and health in Southeast and East Asian countries endorsed the Bangkok Declaration on Environment and Health in a collective effort to reduce the estimated 6.6 million deaths in Asia each year attributable to environmental health risks. The object is to strengthen cooperation between ministries responsible for environment and health within countries and across the region.

The Bangkok Declaration will provide a mechanism for sharing knowledge and experiences, improve policy and regulatory frameworks at the national and regional level, and promote the implementation of integrated environmental health strategies and regulations. Incorporated in the Bangkok Declaration is a regional Charter aimed at helping Southeast and East Asian countries develop joint policies and programmes on environment and health. The regional Charter identified six environmental and health priorities over the next three years, namely: (i) air quality, (ii) water supply, hygiene and sanitation, (iii) solid and hazardous waste, (iv) toxic chemicals and hazardous substances, (v) climate change, ozone depletion and ecosystem change, and (vi) contingency planning, preparedness and response to environmental health emergencies. A regional thematic working group has been established for each priority area, and a second Ministerial Regional Forum is planned in 2010 to review progress.

PERSISTENT ORGANIC POLLUTANTS

Technical support to the Parties and secretariat of the Stockholm Convention on Persistent Organic Pollutants for its implementation is provided by UNEP Chemicals, with particular emphasis to the POP substances that represent high environmental risks, such as polychlorinated biphenyls (PCBs) and releases of dioxins and furans. Additional support is provided through projects and events targeting alternatives to and sound management of POP pesticides. An example is the CD and web publication of the Resource Tool on the Sound Management of Pesticides.

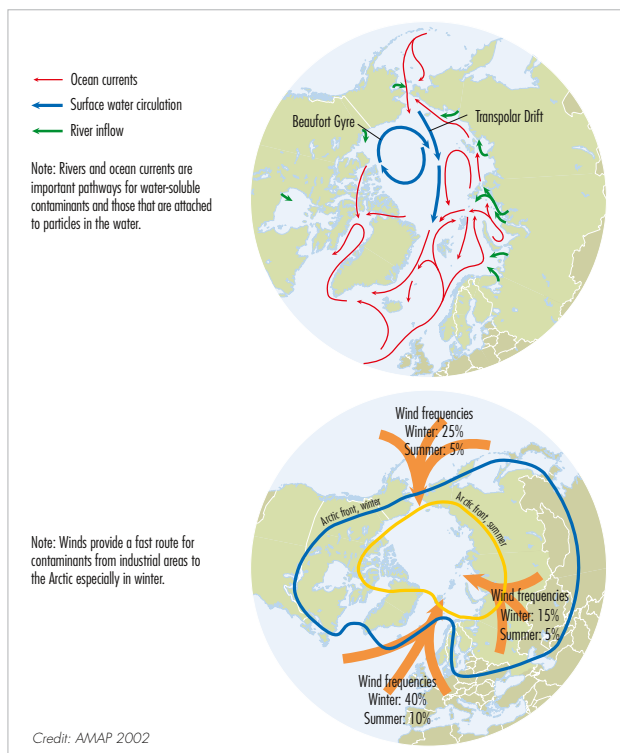
The third Conference of the Parties to the Stockholm Convention on POPs adopted an open and transparent process to update and improve UNEP’s *Standardized Toolkit for the Identification and Quantification of Dioxin and Furan Releases*. The elements are jointly implemented by the Convention Secretariat and UNEP Chemicals and include Toolkit Expert Meetings and projects to close gaps in the Toolkit. Since May 2007, UNEP Chemicals, with funding from the Swedish government through SIDA and the Chlorine Chemistry Division of the American Chemical Council, has been implementing a project to determine emission factors of unintentional POPs from open burning of waste in developing

countries, such as Mexico and China. Another project on emission factors from burning of sugar cane and forest fires has been developed.

The UNEP-GEF project on ‘Assessment of Existing Capacity and Capacity Building Needs to Analyze POPs in Developing Countries’ has developed guidelines for the analysis of POPs and nine developing country laboratories have participated in inter-laboratory comparison studies. An online databank, containing detailed information from approximately 190 POPs laboratories worldwide has been launched. Also, in collaboration with the Secretariat of the Basel Convention, UNEP has supported the development of national inventories and national action plans for PCB and PCB-containing equipment on a regional basis, and is elaborating on this work to assure continuation of initial progress. Examples include a project in seven countries in Central America which will be expanded to the Latin America and Caribbean region.

In collaboration with the World Health Organization (WHO) and the Stockholm Convention secretariat UNEP Chemicals developed and launched the DDT Information System to facilitate the exchange of information and experience on issues related to the use and replacement of DDT for the control of vector-

GEO-4: Pollutant paths to the Arctic



Persistent Organic Pollutants share four main properties. They are stable and last for years or decades in the environment. They are toxic and accumulate in the fatty tissues of humans and wildlife, with adverse health effects. They biomagnify through the food chain, and they can evaporate and travel long distances through air and water. The global community has agreed to phase out an initial list of 12 POPs.

borne diseases such as malaria. Cooperation between UNEP-GEF and the WHO Roll Back Malaria Programme was systematically extended to introduce DDT alternatives for vector control in affected regions worldwide. In Central America, eight countries have reported that with the implementation of the vector control model without using DDT the level of malaria cases was reduced in demonstration areas by an average of 60 per cent for the whole sub-region. Similarly, UNEP Chemicals has developed and launched the Termiticide Information System, one product of the efforts between UNEP and the Global Expert Termite Group, established in 2000 by UNEP and the UN Food and Agriculture Organization (FAO). This web resource collates information on multiple aspects of termite control to facilitate the elimination of termiticides which are POPs.

OZONE DEPLETING SUBSTANCES

The Montreal Protocol on Substances that Deplete the Ozone Layer celebrated its 20th anniversary in September 2007. Under this innovative and highly successful multilateral agreement, countries worldwide are taking specific, time-targeted actions to reduce and eliminate the production and consumption of man-made chemicals that destroy the stratospheric ozone layer, Earth's protective shield. These ozone depleting substances (ODS) include chlorofluorocarbons (CFCs), halons, methyl bromide, carbon tetrachloride, methyl chloroform, and hydrochlorofluorocarbons (HCFCs). September also witnessed a historic agreement negotiated by the 189 Parties to the Protocol in Montreal, which accelerates the phase out of HCFCs by capping production and consumption levels in developing countries by 2013, bringing forward the final phase-out date of these chemicals by ten years. Although HCFCs have considerably lower ozone-depleting potential than CFCs, they are nonetheless harmful to the ozone layer. In addition, many HCFCs have high global warming potential—up to 2,000 times that of carbon dioxide. By supporting the replacement or avoidance of HCFCs in developing countries, the decision will therefore contribute to protection of both the stratospheric ozone layer and the global climate system.

Indeed, most ODS are also potent greenhouse gases, and a key scientific study in 2007 quantified the significant impact the implementation of the Montreal Protocol is having in protecting

Earth's climate system. This message has been an inspiring factor for countries to take accelerated action to phase out ODS. The UNEP DTIE OzonAction Branch and its regionalized Compliance Assistance Programme (CAP) helps mainstream such messages as it assisted developing countries and countries with economies in transition to achieve and sustain compliance with the Montreal Protocol. With the programme's assistance, countries are able to make informed decisions about alternative technologies and ozone-friendly policies.

COMPLIANCE ASSISTANCE

Compliance with the Protocol is the key overall indicator of success for UNEP and the other members of the Montreal Protocol family of institutions. When a country is in danger of not meeting a specific obligation under this multilateral environmental agreement (MEA), OzonAction and the other members of the Montreal Protocol family mobilize to provide proactive support to that country to enable them to avoid being in non-compliance or to quickly return to compliance. In 2007, the CAP teams provided special assistance to numerous countries through missions, South-South cooperation and informal advisory group discussions during Regional Network meetings. CAP worked closely with the other Implementing Agencies—UNDP, the UN Industrial Development Organization (UNIDO), the World Bank—plus the Ozone Secretariat, the Multilateral Fund Secretariat and other implementation partners.

Thanks to these efforts, 16 developing countries that benefited from Regional Networking services provided by the regional CAP teams returned to compliance as of 14 September 2007, in addition to 25 Article 5 countries that returned to compliance as of December 2006. CAP services benefited 40 Article 5 countries to effectively follow the action plans those countries submitted to the Implementation Committee. The CAP team also provided assistance to countries with regard to data reporting.

OzonAction also developed an important mechanism to build regional capacity in support of MEA compliance. Throughout 2007, CAP provided assistance to different countries to help address specific compliance-related issues. This varied assistance included, for example,



Nobel Laureates Frank Sherwood Rowland and Mario Molina receiving a standing ovation at the opening of the 20th anniversary meeting of the Montreal Protocol of the Vienna Convention for the Protection of the Ozone Layer, 17 September 2007, Montreal, Canada. Their findings which were instrumental in calling attention to the negative impacts of CFCs on the ozone layer. This highly successful multilateral environmental agreement is held up as a model of environmental governance. Under the principle of common but differentiated responsibility, it has brought nations together and mobilized the private sector to work towards a common cause. Its innovative financing system, the Multilateral Fund, and its emphasis on building capacity, ensures that all countries can meet their obligations. The result: a near-complete phase-out of ozone depleting substances, to the benefit of human and ecosystem health. © IISD

organizing five sub-regional thematic meetings on Total Phase-out Management Plans, involving about 35 countries in the Africa region. CAP facilitated assistance by Republic of Korea to Afghanistan on setting up training centres for refrigeration and air conditioning technicians, and also helped the University of Chapingo in Mexico assist Ecuador in adopting alternatives to methyl bromide in the horticulture sector. Georgia and Kyrgyzstan provided country-to-country assistance to Turkmenistan concerning the phase-out of methyl bromide consumption in the post-harvest sector.

CAPACITY BUILDING

Whenever the focal point for an MEA changes, there is a need to quickly build the knowledge and skills of the new officer to enable her or him to effectively manage the National Compliance Programme. In 2007, CAP continued its ongoing work to strengthen such National Ozone Officers through South-South cooperation, Regional Ozone Network meetings, bilateral advisory support, information materials and regional training programmes. This included assistance to Afghanistan, Bhutan, Burkina Faso, Comoros, Cameroon, and Iran. Kuwait, Malawi, Maldives, Montenegro, Romania and Serbia.

CAP also accorded special attention to countries that recently became Party to the Montreal Protocol. For example, the UNEP Regional Office for Asia and the Pacific (ROAP) CAP gave assistance to Afghanistan and Bhutan on implementation of their National Phase-out Plan and Total Phase-out Management Plan, respectively. CAP helped Eritrea and Equatorial Guinea on data reporting to meet their reporting requirement in 2007 and also in preparation of a Country Programme and Total Phase-out Management Plan to ensure compliance with the phase-out schedule. Montenegro, a newly independent country, was invited to participate in relevant activities of the Europe and Central Asia Regional Network and UNEP and UNIDO cooperated to prepare the country's National Phase-out Plan. Similar efforts were made for East Timor and Iraq, which ratified the Vienna Convention in 2007.

To strengthen the fight against illegal trade in ODS, DTIE OzonAction helped members of the Regional Ozone Network for South Asia and the Pacific to develop mechanisms for information exchange between major ODS producing countries in the region and importing countries. OzonAction, the World Customs Organization's Regional Intelligence Liaison

Office, and Asia-Pacific Governments cooperated to complete 'Project Sky-Hole-Patching', which conducted intensive control actions on trans-boundary movements of ODS and hazardous waste and resulted in increased awareness on environmental crime and improved information sharing on intelligence. Currently, 20 customs and environment authorities from 18 countries in the region are participating in the project. In China, in collaboration with the State Environmental Protection Administration, UNEP organized a Project Sky-Hole-Patching workshop for 40 custom officers from around the country. Experts and custom officers from Hong Kong, India, Kyrgyzstan, Mongolia, Thailand, Environmental Investigation Agency and the US analyzed the illegal ODS trade, shared their experience and lessons learned, discussed regional cooperation and offered recommendations for implementation in China.

OzonAction, in close cooperation with Environment Canada, also launched the Latin America Custom Enforcement Network Project, a project supported by the Multilateral Fund of the Montreal Protocol, involving 20 participating countries. OzonAction also organized sub-regional workshops for different regions (for example the English-speaking Caribbean) for the prevention and control of illegal trade in ODS. At the annual meeting of the WCO Regional Intelligence

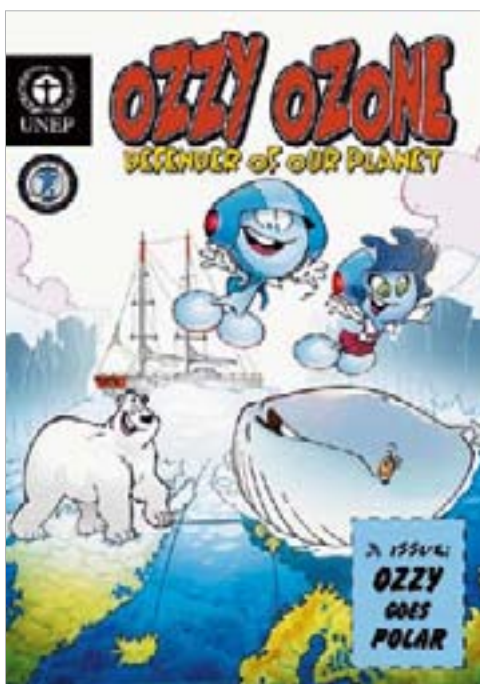
Liaison Office-Commonwealth of Independent States, OzonAction and representatives of the National Ozone Units contributed perspectives on enforcement and trade issues related to ODS and the Montreal Protocol.

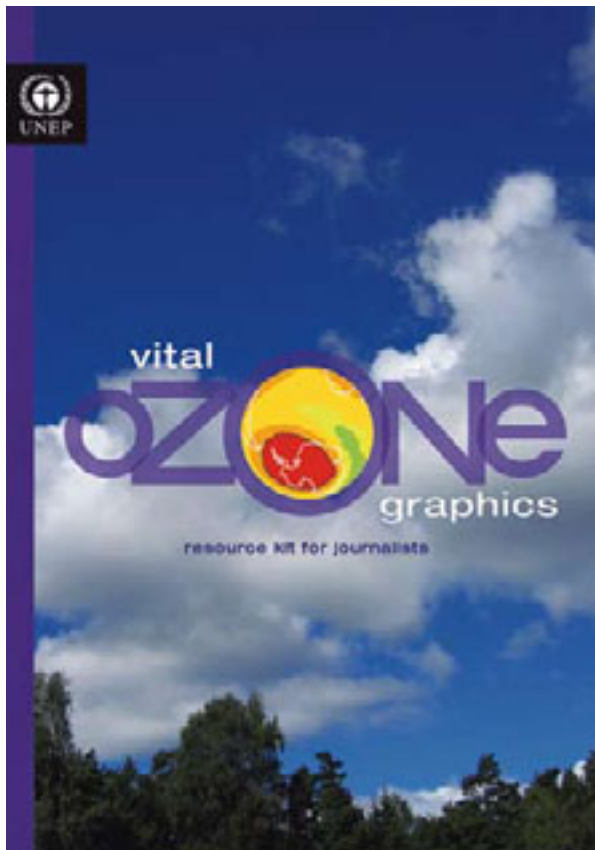
In West Asia, Iraq remains at the top of CAP priorities. CAP continued communicating with different authorities in Iraq and responded to many policy and technical inquiries. In cooperation with the League of Arab States, CAP started developing a special capacity building programme to both Iraq and the National Palestinian Authority on monitoring the use and trade of ODS. CAP also continued to provide technical assistance for phasing out activities in the refrigeration servicing sector to Jordan, Kuwait, Bahrain, Qatar and Saudi Arabia. Similarly, technical support with regarding halon management programmes and projects was provided to Bahrain, Jordan, Kuwait and Oman.

INFORMATION EXCHANGE

The OzonAction Information Clearinghouse developed and distributed a suite of information services to National Ozone Units and other stakeholders in support of national celebrations of the International Day for the Protection of the Ozone Layer and the 20th Anniversary of the Montreal Protocol. This included: *Vital Ozone*

The *Ozzy Ozone Snakes and Ladders Board Game* and other *Ozzy Ozone* products support National Ozone Units in their national ozone awareness campaigns about ozone depletion, climate change and persistent organic pollutants.





Vital Ozone Graphics, the youngest product in a series of Vital Graphics on environmental issues produced by UNEP/GRID-Arendal, features 30+ new graphics explaining physical, technical, economic and political aspects of ozone destruction in the atmosphere and the action that has been taken to stop the process. It also sheds light on the challenges still remaining and the links between ozone depletion and climate change. It is designed as a practical tool for journalists who are interested in developing stories related to ozone depletion and the Montreal Protocol.

Layer Graphics, two 30-second *Public Service Announcement* videos—*The Drummer* and *A Kid's Dream*—that raise awareness of the work that has been done during the last 20 years by the international community with regard to ozone layer protection. They also reveal the urgency for the coming years to continue working on these endeavours. An *Ozzy Ozone Snakes and Ladders Board Game*, that supports National Ozone Units by providing an information tool to be used in their national ozone awareness campaigns was also distributed, along with *Ozzy Goes Polar*, the third issue of the children's illustrated booklet designed to increase awareness about ozone depletion, climate change and persistent organic pollutants.

CAP also provided information and guidance to the Beijing Organizing Committee for the Games of the XXIX Olympiad (BOCOG) to

further include the Montreal Protocol and ozone protection into the agenda of the 2008 Beijing Olympic Games. This is being done within the framework of the UNEP-BOCOG Memorandum of Understanding, for which the OzonAction Programme helped to introduce the ozone protection issue. BOCOG has pledged to deliver an '*Ozone-Friendly Olympic Games*' by avoiding using ODS in Games facilities and venues and in equipment such as air conditioning, refrigeration units and fire fighting equipment. Carbon tetrachloride and methyl chloroform—two further ozone-damaging substances—have been prohibited for uses such as laundry and electronic circuit board cleaning, while suppliers such as Coca Cola and McDonald's have also committed to an ozone-friendly Games. For example Coca Cola will supply 4,000 bottle coolers that use natural refrigerants.

In recognition of its achievement, the Secretariat of the Vienna Convention for the Protection of the Ozone Layer presented BOCOG with a public awareness award on the occasion of the 20th anniversary of the Montreal Protocol in September 2007. The Secretariat also recognized the work of UNEP DTIE. Its OzonAction Branch and staff received a total of 27 awards in the following categories: Outstanding Contributors, Implementers, Partners, Implementing Agency and Staff, and Exemplary Projects undertaken Pursuant to Article 10 of the Montreal Protocol.

Regional Network Coordinator for South Asia for UNEP's DTIE OzonAction Programme, Atul Bagai, was also recognized by the United States Environmental Protection Agency when it presented him with their Stratospheric Ozone Protection Award in May in Washington D.C. The award was for his work in assisting countries in the region to comply with their international commitments under the Montreal Protocol on Substances that Deplete the Ozone Layer. The US EPA also recognizing his work in "designing strategic approaches on development and implementation, of institutional mechanisms and innovative capacity building activities in the countries." Also recognized was Mr. Zhou Bin, Intelligence Analyst of the Regional Intelligence Liaison Office for Asia and the Pacific for cooperation with UNEP in combating illegal trade in ODS.

THE REGIONAL PERSPECTIVE: NORTH AMERICA

The North American region comprises Canada and the United States of America, two of the largest countries in the world, which wield considerable economic and political influence. The region is home to many outstanding environmental, academic, and scientific institutions. The economy has global reach and its commercial sector is creative, vibrant and open to experimenting with new ways of doing business.

The mission of UNEP's Regional Office for North America (RONA), based in Washington, D.C., USA, is to promote effective responses to international environmental challenges, and to foster cooperation on environmental issues between North America and the broader international community. To achieve this mission, RONA forges collaboration between UNEP and all sectors of North American society, including US and Canadian governmental institutions, the private sector and civil society groups.

UNEP also has a Liaison Office in New York Office to represent UNEP at UN Headquarters. It serves as a vital link with governments (through their Permanent Missions to the UN and their delegations to various intergovernmental meetings in New York), with UN system agencies, funds and programmes, and with departments of the UN Secretariat, notably the Offices of the Secretary-General and the Deputy Secretary-General. The Office ensures, through its participation in intergovernmental meetings, that UNEP's voice and guidance on environmental policy issues are taken into account in the deliberations and recommendations of the General Assembly and the Economic and Social Council and its subsidiary bodies, as well as in other special UN summits and conferences.

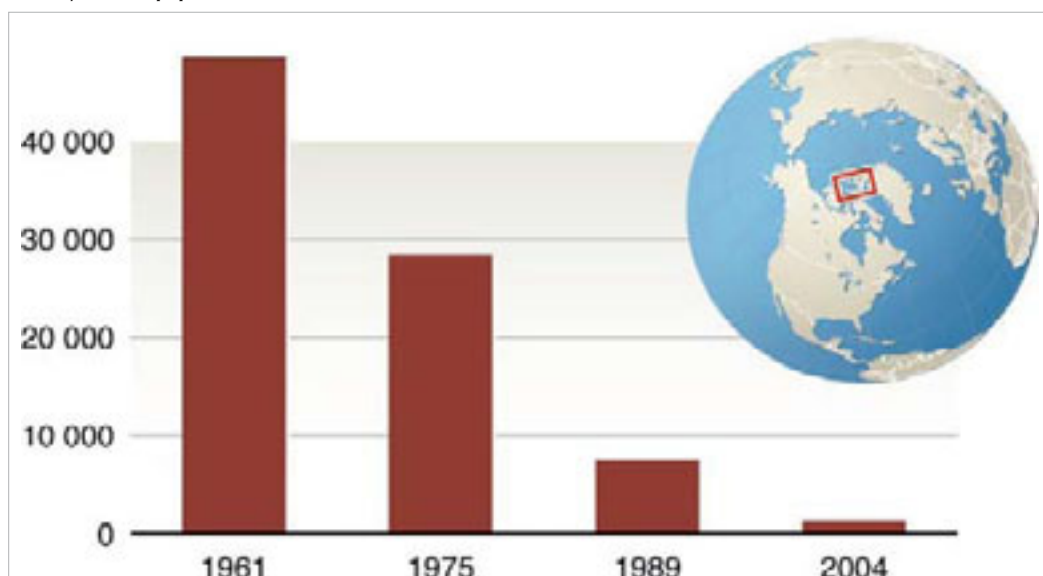
UNEP's role in the coordination of UN system-wide activities in the field of the environment is ensured by the New York Office's participation in major inter-agency meetings (particularly the UN System Chief Executives Board (CEB) for Coordination and the UN Executive Committees), and the work of the Environmental Management Group (EMG). The Office also undertakes substantive collaborative initiatives with partners in the UN system, for example with the United Nations Children's Fund (UNICEF) and the World Health Organization (WHO) in the field of children's environmental health.

UNEP's strategic approach in North America includes the development of new North American partnerships and adding contributors to existing UNEP partnerships, thereby engaging the technological, intellectual and financial resources of the region to serve UNEP's important work around world; facilitating contacts with the private sector to increase participation by North American institutions in UNEP's industry-specific initiatives and programmes; mobilizing the dynamic North American-based NGO sector to encourage them to take a more active role in UNEP's policy processes and overall activities; and enhancing the profile of UNEP in North America through outreach.

Through UNEP GRID-Sioux Falls and the Division of Early Warning and Assessment, UNEP has forged an exciting new partnership with the Internet giant Google. Following the highly successful ongoing collaboration with Google Earth based on the UNEP *Atlas of our Changing Environment*, whereby users can fly around a 'virtual planet Earth', zooming in on environmental hotspots and comparing today's crisis zones with yesterday's areas of natural beauty, the UNEP-Google Earth partnership continues to spearhead projects for local action on a global scale. In 2007, people around the world were able to share their efforts to restore their environment with millions of people on the Internet. During International Cleanup Weekend on 13 and 14 October, community groups and individuals on every continent took action to clean their local parks, beaches, streets and neighbourhoods. Under the UNEP-Google Earth partnership, a global platform was given to every local initiative which chose to post its activities as photos and videos onto Google Earth.

In another partnership initiative, *Discovery Networks*, the parent company of the well known *Discovery* and *Animal Planet* channels, offered the UNEP Executive Director a seat on the Board of Advisors of their new channel *Planet Green*. The partnership represents a unique opportunity for UNEP to influence the programme content of this major media initiative, whose mission is to educate, enable and inspire individuals to live greener lives. Discovery Networks will be investing considerable financial and human resources to position *Planet Green* as the most comprehensive and trusted global media voice in the field of environmental sustainability. UNEP has been asked to play a prominent role in this development through various activities, including the provision of technical experts, the development of educational programmes for youth and general information sharing.

Decline in the Peary caribou population of the Arctic islands of North America



In northwestern North America, recent warming has led to a dramatic increase in the number of days of temperatures above freezing during the migration period for the Peary caribou Rangifer tarandus. Thawing and subsequent re-freezing of snow results in ice layers which hinder travel and make it harder to find food. Catastrophic declines in the Peary caribou population on the Arctic islands of North America means they are now considered endangered. © Hugo Ahlenius, UNEP/GRID-Arendal Appears for Global Outlook for Ice and Snow

Focus on: MERCURY AND OTHER HEAVY METALS

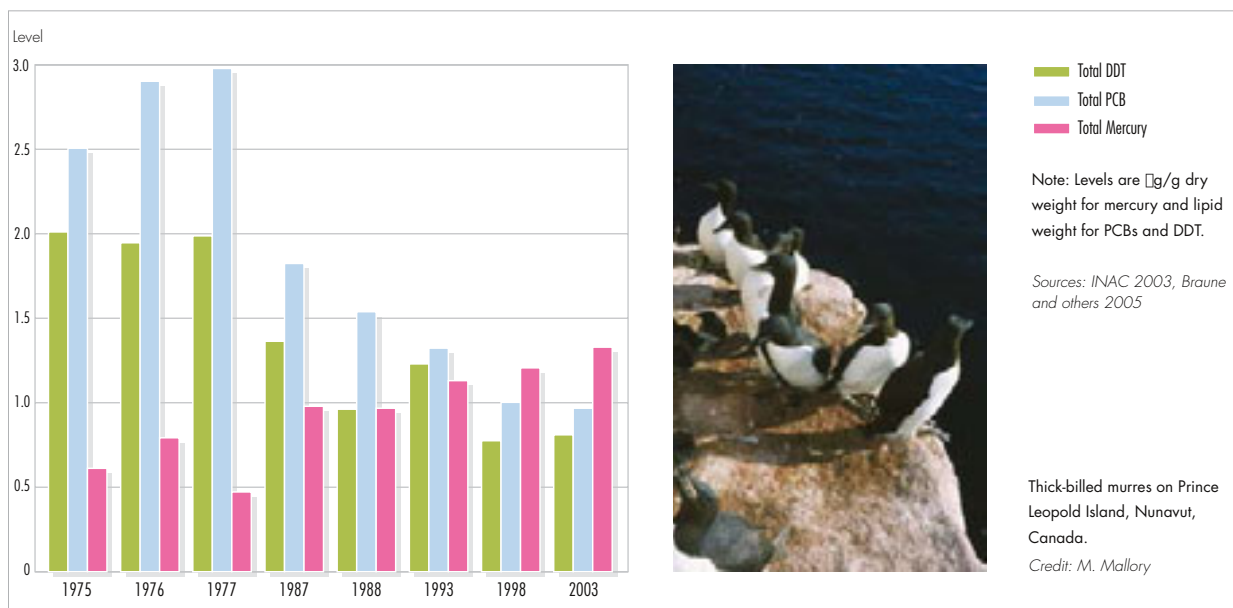
At its 24th meeting in February 2007, the UNEP Governing Council acknowledged the progress made to address the global mercury issue. It also recognized that current efforts to reduce risks from mercury are not sufficient, and that further international action is required. It agreed that there was a need for updated information on global mercury emissions, and asked UNEP to undertake the responsibility of collecting it. Mercury is linked with a wide range of health effects, including irreversible damage to the human nervous system and the brain, and scientists have concluded there is no safe limit when it comes to mercury exposure. Every person alive today is thought to have at least trace levels of the heavy metal in their tissues. According to GEO-4, coal burning and waste incineration account for about 70 per cent of total quantified mercury emissions. Scientists are also testing suggestions that climate change may be triggering releases of new deposits of mercury and re-activation of old deposits as a result of rising lake temperatures; erosion and the accelerated melting of permafrost, ice sheets and icebergs at the poles.

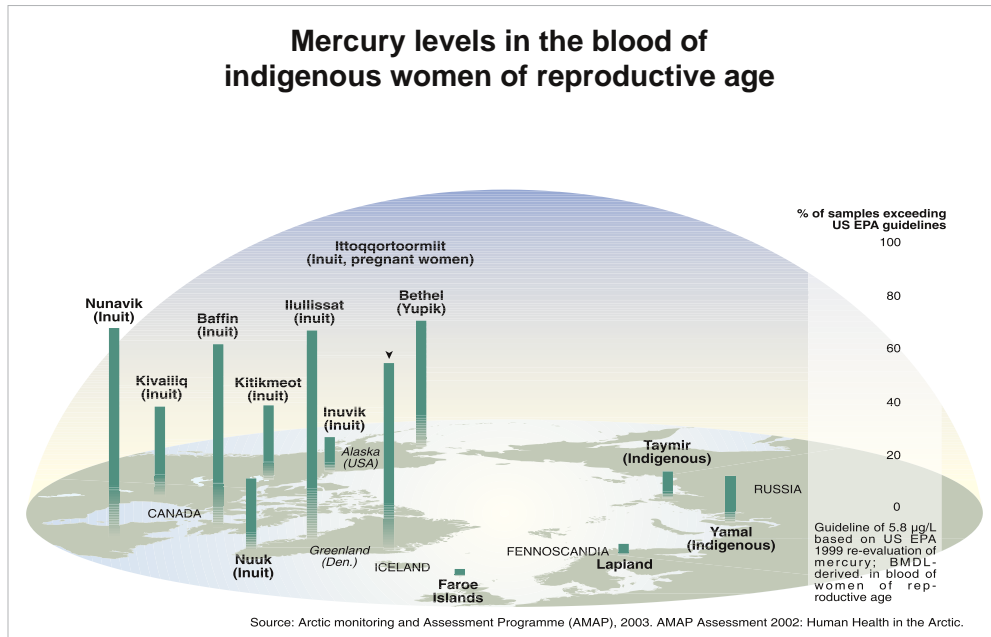
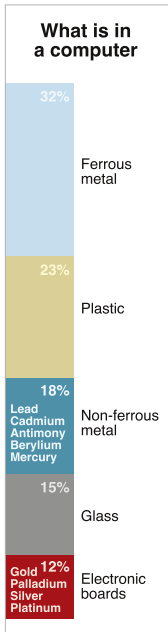
The work to address the mercury challenge has been undertaken using two main approaches. The first is to strengthen the mercury partnerships programme. Governments at the UNEP Governing Council meeting agreed to promote 'best available techniques' for reducing mercury emissions from

chemical factories and other industrial sites and to develop partnerships between governments, international organizations, NGOs and the private sector to reduce mercury pollution, with the first pilot projects to be in place by September 2007. Examples of partnerships include ones to reduce emissions of mercury from coal fired power stations, from chlor-alkali plants and from pollution linked with gold mining. Discussions are under way to develop an overarching framework for the partnership programme, including the development of formal business plans and the identification of clear goals for each of the partnership areas. These will be discussed at a meeting of partners and stakeholders early in 2008, where further discussions will also be held on operational guidelines for the partnership programme and clear overall goals. In addition to the original five partnership areas, the development of new partnerships on vinyl-chloride monomer production, non-ferrous metals mining and cement production and waste combustion is also underway. These areas will be integrated in the overall partnership programme following further discussions.

Within the structure of the partnerships' work, a number of country projects are underway, with the main focus on the development of mercury inventories. The *Toolkit for Identification and Quantification of Mercury Releases* is being

GEO-4: Trends in POPs and mercury in eggs of Thick-billed murre





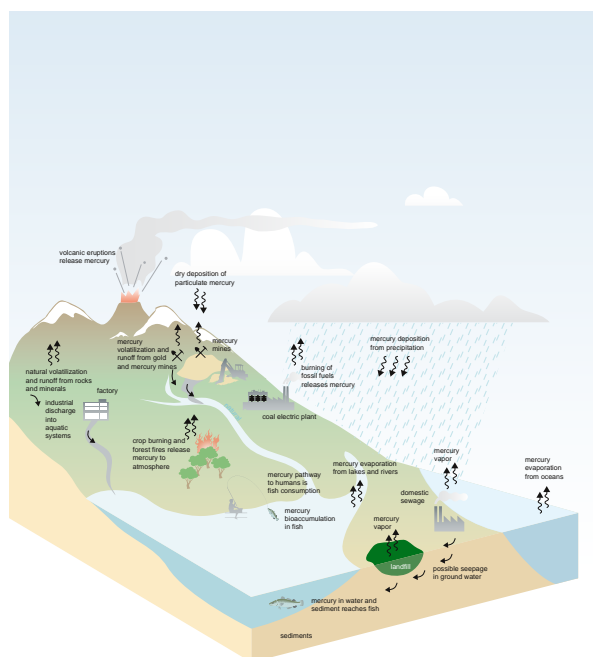
© UNEP/GRID-Arendal

pilot tested by countries in Africa, Asia and Latin America. These inventory projects will lead to the development of national plans for managing identified mercury problems, and it is intended that further activities will be built on the outcomes of these and future inventory projects. Work on encouraging using non-mercury products in healthcare and other sectors is ongoing in a number of regions. Work with the Basel Convention secretariat has continued during 2007, with guidelines on environmentally sound management of mercury-containing waste available as an initial draft.

The second approach to the mercury challenge identified by the Governing Council is the need to review and assess the options of enhanced voluntary measures and new or existing international legal instruments. An ad hoc Open Ended Working Group was established by the Governing Council to undertake this task. The first meeting of the Working Group was held in November in Bangkok, Thailand. The group considered a paper prepared by UNEP entitled *Analysis of Possible Options to Address the Global Challenges to Reduce Risks from Releases of Mercury*. Discussions at the meeting focused mainly on possible response measures to deal with mercury, and the meeting developed a programme of intersessional work to contribute to the work of the second meeting, which will be held in October 2008.

Interim reviews of lead and cadmium were also considered at the 2007 Governing Council, and work has begun to gather information to address identified data gaps and to compile an inventory of existing risk management measures. The draft revised reviews will be available for comment by the UNEP Governing Council in 2008.

Mercury life cycle. © UNEP/GRID-Arendal



NATURAL DISASTERS AND POST-CONFLICT RESPONSE

When UNEP first began assessing the environmental dimensions of conflicts in 1999, few imagined that these services would be in high demand from Member States. Today, however, after eight years of assessment and capacity building activities in some 25 crisis-affected countries, these activities are one of the core pillars of UNEP. To further enhance the organization's expertise and capacity in crisis management, UNEP's Post-Conflict and Disaster Management branches were merged into a single entity in January 2007. As a result, work is intensifying in traditional areas of operation such as crisis response and recovery, as well as expanding into the challenging fields of disaster risk reduction and environmental peacebuilding.

The UNEP Post-Conflict Disaster Management Branch extends UNEP's work in areas of the world where the environment is impacted by conflicts and disasters, or where the environment is a factor contributing to conflicts and disaster impacts. In this context, UNEP has worked in post-conflict settings such as Afghanistan, Sudan, Iraq and Lebanon, as well as in countries affected by major disasters, such as Pakistan, Indonesia, Sri Lanka and Maldives.

Because conflicts and disasters are so closely intertwined with the environment, proper environmental management and governance is essential for long-term peace, stability and security in any conflict- or disaster-prone country. UNEP conducts environmental assessments in crisis affected countries and strengthens national environmental management capacity through institution building, promoting regional cooperation, technical legal assistance, environmental information management and integrating environmental concerns and risk reduction measures in reconstruction programmes.



SUDAN

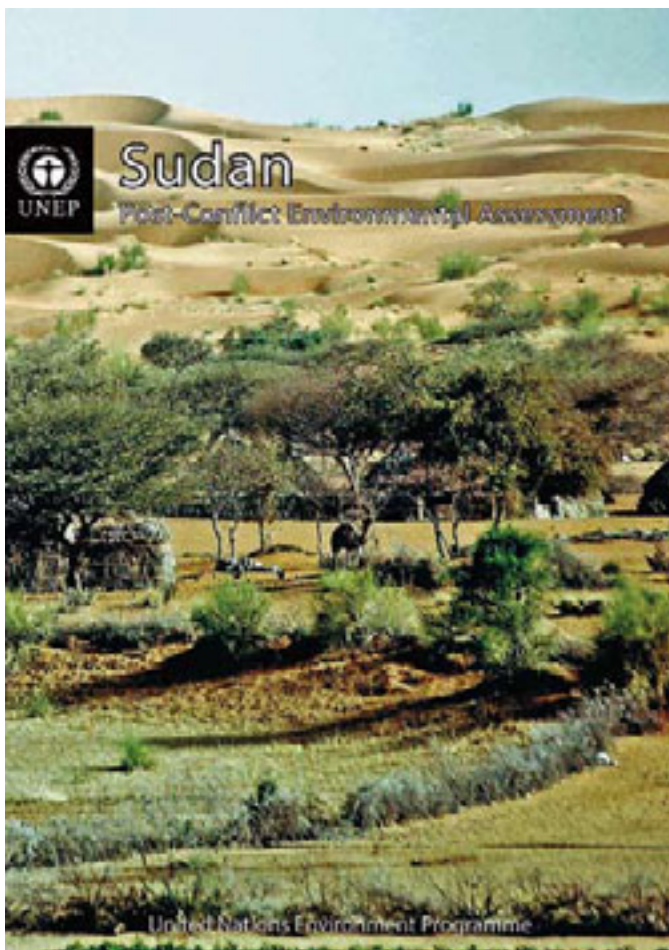
A major event in 2007 was the publication and launch of the *Sudan Post-Conflict Environmental Assessment* report in June 2007, marking the successful completion of the largest post-conflict assessment ever conducted by UNEP, covering the entire territory of the country, including Darfur. Together with national experts, UNEP staff conducted ten separate field missions, travelling



some 12,000 kilometres within the country, and interviewing more than 2,000 people. Following an editorial by the UN Secretary-General linking the current conflict in Darfur with ecological decline and climate change, the report received extensive press coverage and strongly contributed to the ongoing debate on environment as an underlying factor of conflict in Sudan. Development specialist Jeffrey Sachs urged anyone interested in peacebuilding, poverty reduction and Africa's future to read it.

A bicycle burns on an unattended property near Del Dios Highway in the Rancho Santa Fe area of San Diego, California, 23 October, 2007. Wildfires stoked by fierce winds burned unchecked across Southern California, with 300,000 people in San Diego alone evacuated as flames destroyed or threatened homes. Statistics from UNEP Finance Initiative partners indicate that natural disasters predominantly attributable to climate change and other environmental changes are exacting an increasing economic toll each year. The work of UNEP's Post-Conflict and Disaster Management Branch ranges from environmental disaster response to post-conflict recovery, and is expanding into the challenging fields of disaster risk reduction and environmental peacebuilding.

© Mario Anzuoni/Reuters



Abu Shouk camp for internally displaced people, North Darfur, Sudan. Sudan has suffered protracted armed conflict for most of the past 50 years, including a long civil war between the North and South and ongoing violence in Darfur. A Comprehensive Peace Agreement signed in 2005 ended the North-South civil war and opened the prospect of a wider resolution of Sudan's conflicts. However, conflict over scarce natural resources—fertile land, trees and water—remains a destabilizing influence in many parts of the country. Many challenges remain to be addressed to ensure long-term peace, food security and sustainable development for the Sudanese people. These include desertification and regional climate change, increased vulnerability to natural disasters, the environmental impacts of population displacement and the return process, the devastating impact of land degradation on the population's livelihoods, deforestation, rapid urbanization and a rapidly growing oil sector. UNEP's Post-Conflict and Disaster Management Branch has established a Sudan programme to contribute to bringing peace and stability to Sudan by helping the international community, government institutions at all levels and civil society tackle the environmental challenges of Sudan. © UNEP/PCOB

UNEP's report delivers a clear message: Sudan now faces a broad array of environmental issues that threaten the livelihoods of its people, as well as their prospects for long-term peace and food security. These include water scarcity, desertification, management of the developing oil industry, deforestation and climate change. If these challenges are not addressed, they could undermine the peace process by causing further displacement and conflict.

UNEP's independent assessment, which was requested and endorsed by the Government of National Unity and the Government of Southern Sudan, makes wide-ranging recommendations, including investment in environmental management, capacity building of national and local government, and the integration of environmental concerns in all UN relief and development projects. The report outlines a detailed government action plan with a total estimated national cost of \$120 million over three to five years.

As a follow-up to the report, UNEP was requested to implement an environmental programme at the national level, in Southern Sudan and in Darfur. The programme aims to build the capacity of national authorities and UN colleagues for the sustainable use of natural resources and the rehabilitation of degraded areas. Five major projects have been designed in partnership with the UN Development Programme (UNDP), the UN Children's Fund (UNICEF) and the UN Food and Agricultural Organization (FAO). Although still early in the programme, significant progress has already been achieved in Darfur, where deforestation is so severe that displaced populations resort to digging under the earth for roots to burn for fuel. In addition to expanding the use of fuel-efficient stoves in camps for internally displaced people (IDPs), UNEP aims to plant some three million trees in community forests and woodlots during the first season of 2008, as part of a two-year project to assist displaced populations and conflict-affected communities to obtain and use fuel wood in a sustainable manner.

AFGHANISTAN AND LIBERIA

During 2007, in its fourth year of operation, UNEP's Capacity Building Programme for Afghanistan continued to provide support to the National Environmental Protection Agency

(NEPA) and Ministry of Agriculture. Following a major post-conflict environmental assessment in 2002–2003, UNEP's key successes have included establishing a solid institutional structure and mandate for NEPA, developing a framework environmental law and associated sector laws on forests, water and rangelands, as well as regulations on environmental impact assessments, providing office and technical equipment to NEPA and delivering more than one hundred training sessions on various topics.

In 2007, the programme also implemented six community-based natural resources management pilot projects, on themes ranging from reforestation to irrigation to solar electrification. For example, more than 2,000 m² of traditional irrigation was rehabilitated to deliver water to 7,500 saplings planted in newly established fruit and nut orchards. In addition, UNEP oversaw the installation of 80 solar panels on homes in the villages of Bamiyan and Badakshan, in cooperation with its NGO partner Norwegian Church Aid. The programme represents the most concrete example of UNEP working together with UN, government and civil society partners at the country level to build national capacity for environmental management. To support the third phase of UNEP's programme in Afghanistan, the European Commission confirmed in December 2007 that it had blocked \$8.8 million for the period 2008–2010.

A wide range of successful awareness and capacity building activities has also been carried out by UNEP in Liberia since 2005, when it established a project office in Monrovia. In 2007—in its final year—the programme continued to provide practical capacity building and training support to the Environmental Protection Authority (EPA), for example by offering two training workshops on the basics of environmental inspection techniques to some 50 local laboratory personnel.

As part of a technical assistance package agreed with key government, international community and civil society stakeholders, UNEP supported the development of environmental legislation and the implementation of environmental impact assessment provisions. The Environmental Law Institute (ELI) was an important technical partner in the legal work. Consultations were also initiated with the UNDP-UNEP Poverty

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and Environment Initiative on the provision of technical support for the development of Liberia's first Poverty Reduction Strategy. In addition, UNEP's programme office in Monrovia worked to build capacity on environmental monitoring, biodiversity conservation and waste management.

IRAQ

In Iraq, UNEP continued with the project 'Support for Environmental Management of the Iraqi Marshlands' in 2007. Funded by the UN Trust Fund for Iraqi Reconstruction and by bilateral funding from the governments of Italy and Japan, the project has commenced its third phase of activities with additional contributions from the Government of Japan. UNEP, the Iraqi Ministry of Municipalities and Public Works, and Thi-Qar University carried out field surveys to address the gap in data and information available on demographic, social and economic conditions in 199 villages where the inhabitants displaced by the drying-out of the marshlands have been struggling to re-establish their livelihoods. The Survey generated information necessary to address the needs of basic services such as drinking water, sanitation, health, education etc., which are found to be seriously lacking.

Another survey on solid waste management was conducted in nine cities and towns of southern Iraq. The project has built capacity in Iraqi institutions to carry out such surveys and generated baseline data necessary for improving environmental conditions. The project has also supported data collection on water resources and environment, and translation of information from Arabic to English and vice-versa, as well as dissemination through the Marshland Information Network (MIN). Hardware for the MIN system was provided and training was completed.

In partnership with a local NGO and the University of Basrah, UNEP has conducted awareness raising workshops targeting women in marshland villages to educate them about practical means to protect health and the environment, the environmental importance of the marshlands and its link to the economy and human health, and impacts of people's actions on the marshlands. A total of 712 women from 15 marshland villages in the Governorates of Thi-Qar, Missan and Basrah participated in the workshops. In each village, workshops were held for four to five days through

lectures, demonstrations and providing kits for health. The villages were visited again one month after the workshops to assess how the women had utilized the information and tools provided in their daily lives. Workshops were well received by the communities, many of which have never received any assistance from the UN or support agencies, and they have requested similar activities targeting children. Following the successful installation of environmentally sound technologies (EST) for drinking water provision in six villages and their transfer to Iraqi ownership, work to improve access to safe drinking water in a seventh village of 3,000 persons that suffers from unreliable supplies has commenced. Monitoring and evaluation of EST applications of sanitation and marshlands management informed the potential of wider application in the marshlands.

UNEP also held a high-level meeting to discuss environmental priorities in Iraq and to assess the progress of the Iraqi Marshlands Project with the Iraqi delegation headed by the Iraqi Minister of Environment, in April 2007. The Minister, who lauded the Iraqi Marshland project as a model of international cooperation in Iraq, expressed her appreciation to UNEP for the project and its impacts on the ground, and discussed the development of further initiatives in Iraq. Project activities and lessons learned are disseminated through a trilingual project website in English, Arabic and Japanese. A publication on UNEP involvement and its contribution to the improvement of environment in Iraq, including lessons learned, will be released in early 2008.

NIGERIA

Following a request by the Federal Republic of Nigeria in 2006, the year saw the development of a project to assess more than 300 oil-impacted sites in the Ogoni region of the Niger Delta. As a major public-private partnership with UNDP, the Federal Government of Nigeria, the Government of Rivers State, the four Ogoni Local Government Areas and the Shell Petroleum Development Company of Nigeria, the Ogoniland environmental assessment project is the first of a kind for UNEP. As such, it presents several new challenges, including coordinating a wide range of stakeholders and working in close cooperation with local staff and communities. As part of the broader government-led peace and reconciliation process in Ogoniland, the project could lead to



Following a request by the Federal Republic of Nigeria, UNEP has developed a project to assess more than 300 oil-impacted sites in the Ogoni region of the Niger Delta. © Leslye Wood

substantial benefits in terms of peacebuilding, stabilization and economic development in the Niger Delta, which has been wracked with violence and conflict for over two decades.

With the planning phase now completed, fieldwork is expected to commence in the early part of 2008. The project aims to assess the environmental damage caused by oil exploration and extraction in Ogoniland, and to make detailed, site-specific recommendations for clean-up and environmental rehabilitation. Teams of international and local experts will conduct field investigations in more than 300 sites to evaluate the impacts of oil on land, water, agriculture, fisheries and air—as well as the direct and indirect effects on biodiversity and human health. This will involve the collection and analysis of thousands of samples of water, soil, sediment, flora and fauna. In addition, the environmental assessment will comprise a comprehensive inventory of the entire oilfield infrastructure in Ogoniland. Depending on the findings and stakeholder response, the assessment could be followed by a major clean-up exercise, which UNEP would assist in supervising.

IN THE PIPELINE


A series of planning missions were conducted throughout the year to discuss and develop environmental assessments and other early recovery activities to be carried out in the Democratic Republic of Congo, Rwanda and Nepal during 2008.


As part of follow-up on the Great Lakes Process, UNEP participated in several consultative meetings, including the Regional Parliamentary meeting on Peace, Security, Democracy and Development in the Great Lakes Region. The meeting was held in Kinshasa, Democratic Republic of Congo (DR Congo) in February 2007. An initiative was started to help the country better manage its nature-based assets. In September 2007, a UNEP mission to DR Congo met with the Minister for Environment, senior government officials in the Office of the President and the Office of the Prime Minister as well as heads of relevant departments. The purpose was to identify the scope of potential areas for environmental assistance to DR Congo.

UNEP mission to the DR Congo

Period 16-26 September 2007

Participants:
Nehemiah Rotich, David Jensen,
Johannes Refisch, Franck Attere




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The illegal or unsustainable exploitation of natural resources, such as felling forests for charcoal, and the high level of insecurity due to the presence of various rebel armed groups, is causing environmental degradation in the Virunga National Park, Democratic Republic of Congo. As part of follow-up on the Great Lakes Process, UNEP is working with the DR Congo authorities to strengthen capacity for sustainable management of the country's natural heritage. © UNEP PCOB

The mission provided an opportunity for a number of concerned government departments and UN agencies to discuss possible ways of improving cooperation with UNEP on issues pertaining to the security, management and conservation of the environment in DR Congo, particularly fragile ecosystems within and outside protected areas, especially the Virunga National Park. Killings of gorillas, the illegal or unsustainable exploitation of natural resources causing environmental degradation in the Virunga National Park, and the high level of insecurity due to the presence of various rebel armed groups, demand that new concrete steps are taken to salvage this unique world heritage. UNEP is preparing to launch activities in the areas of environmental

legislation, post-conflict assessment and capacity building for the conservation and management of environmental resources in DR Congo in 2008. The activities will also provide environmental support to the UN Country Team and the UN peacekeeping mission (MONUC).

An environmental assessment is also in preparation for Rwanda. Although it is now more than 10 years since the conflict, a forward-looking environmental assessment will facilitate an analysis of land use patterns, urbanization and the sustainable management of natural resources in the country. The project will also contribute to the 'One UN' process in Rwanda, and ensure that environmental needs are fully integrated

into the development agenda. In Nepal, UNEP has established a partnership with key NGOs including WWF, IUCN, ICIMOD and the National Trust for Nature Conservation, to address the country's most pressing environmental needs following the recent civil war. The recommended programme includes an environmental assessment focused on integrating sustainable resource use and community-based management in the peacebuilding agenda, the development of a national early recovery plan, fundraising, and interim practical actions.

UNEP is also working in the legal arena on military activities and the environment. A Regional Meeting on the Application of Environmental Norms by Military Establishments was held in Nairobi, in October 2007 to promote further implementation of chapter 20 of Agenda 21, concerning environmentally sound management of hazardous wastes, as well as to further implement the Montevideo Programme for the Development and Periodic Review of Environmental Law for the First-decade of the Twenty-first Century, which contains a session concerning military activities and the environment. The meeting was addressed to African States and focused on the application of environmental norms by military establishments, to provide a forum for African States to exchange information and share experiences to address the issues arising from military/defence-related activities during peacetime. These include: a national environmental policy for the military/defence sector; national activities to ascertain that military establishments in the country conform to their national environmental norms in the treatment and disposal of hazardous wastes; the contribution of the military sector in the achievement of national environmental policies, goals and objectives; and assessments of damage as well as the need for and feasibility of cleaning up and restoring areas where damage to the environment has been caused by military activities.

DISASTER RESPONSE

Continuing UNEP's long-standing partnership with the UN Office for the Coordination of Humanitarian Affairs (OCHA), the Joint UNEP/OCHA Environment Unit responded to emergencies in a wide range of locations in 2007, including Mozambique, Indonesia, Suriname, the Occupied Palestinian Territories, Mongolia,

Kuwait, Kosovo, Macedonia, Swaziland, Nepal, Haiti, the Dominican Republic, Honduras and Nicaragua. In addition, experts were deployed as part of UN Disaster Assessment and Coordination (UNDAC) teams to assess flooding impacts in Madagascar and Uruguay, earthquake damage in Peru, as well as the impacts of the oil spills in the Black/Azov Sea in Ukraine and the Yellow Sea off the western coast of the Republic of Korea. While in the majority of cases, no acute environmental risks were identified, the rapid environmental assessment in Peru led to clean-up of debris and medical waste that was of immediate concern for human health. Together with the European Commission, UNEP will also conduct follow-up assessments of the oil spills in Ukraine and the Republic of Korea during 2008.

In the aftermath of the 2004 Indian Ocean tsunami, when the severe damage was compounded by extensive pre-existing environmental degradation due to the felling of trees for charcoal, development of shrimp ponds and oil palm plantations, it became clear that coastal vegetation plays a crucial role in protecting communities from natural hazards. Together with the World Conservation Union (IUCN) and Wetlands International, UNEP has been coordinating projects to rehabilitate mangroves on Huraa Island in the Maldives, in Banda Aceh in Indonesia, and in Ampara District in Sri Lanka. These projects have been linked with 'Mangroves for the Future', a multi-agency, multi-country initiative launched by President Bill Clinton for the long-term conservation and restoration of coastal ecosystems to sustain human livelihoods, increase resilience and reduce vulnerability among coastal communities in the Indian Ocean region.

A UNEP-GEF project in collaboration with the United States Geological Survey (USGS) 'An Assessment of Mangrove forest distributions and dynamics (1975-2005) in the Tsunami-impacted regions of Asia', has been collecting data on the dynamics of mangrove degradation. More than 750 Landsat satellite images were used to assess the distribution, rate and causes of deforestation and fragmentation of mangrove forests in the tsunami-impacted areas of Asia between 1975 and 2005. The study revealed that the studied region lost 12 per cent mangrove forests between 1975 and 2005. Annual deforestation was highest in Myanmar at approximately 1 per cent and lowest in Sri Lanka (0.1 per cent), while the mangrove

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density in India and Bangladesh remained unchanged or gained a small percentage. The major causes of deforestation were agricultural expansion (81 per cent), aquaculture (12 per cent) and urban development (2 per cent).

BUILDING BACK BETTER

At the request of the Aceh and Nias Rehabilitation and Reconstruction Agency (BRR) and the local environment office in Banda Aceh, Indonesia, UNEP supported the Ministry of Environment to build capacity on eco-house design in Banda Aceh. UNEP supported a topography survey, site planning, and site preparation and a 'Comprehensive Master Plan' for a village that will be built on 50 hectares of land secured by the BRR. The BRR plans to construct more than 1,000 houses in the area based on different models of demonstration eco-houses to be designed and constructed with additional support from UNEP. The construction of the new demonstration eco-houses was completed in December 2007. As an additional concrete contribution to 'building back better', UNEP published *After the Tsunami: Sustainable building guidelines for South-East Asia* in August 2007, a manual designed to help project managers choose appropriate design and construction methods, as well as sustainable materials and technologies to protect natural resources, and reduce energy consumption and pollution.

Also in Indonesia, UNEP's International Environmental Technology Centre (IETC) implemented a project on the application of Environmentally Sound Technologies (ESTs) in the forestry sector in Banyumas District, Central Java, Indonesia. The project aimed to implement ESTs to ensure sustainable forestry management and thus the growth of the local economy based on forest products and wastes. The project also sought to identify appropriate and sustainable solutions for the use of wastes from timber and non-timber production and services, and to design sound sustainable forest management practices and measures to prevent and mitigate the negative impacts of disasters such as flooding, landslides and on-going forest exploitation.

Assessment of potential environmental impacts of forestry waste management was carried out, including the creation of a comprehensive database on existing condition and trends (social,



As a contribution to 'building back better', UNEP published *After the Tsunami: Sustainable building guidelines for South-East Asia*.

economic and environmental) based on GIS and spatial/remote sensing data, especially on land use and land cover changes and deforestation. A Policy Gap Analysis to promote forest waste management and thus contribute to disaster prevention and other socio-economic policy goals (including eco-tourism) was carried out with a set of recommendations for action to be undertaken at the national and local level. Several EST applications were identified in the project area, including renewable energy systems (micro-hydro, solar), non-timber forest processing units, compost processing unit and the use of organic fertilizers. Capacity building of the local government and local community to implement the policies and ESTs was an integral part of the project.

Another project, 'Demonstrating ESTs for Building Waste Reduction in Indonesia' (DEBRI), funded by EU continued in 2007. A report was prepared on baseline data of the tsunami debris, describing the various types of debris generated during the disaster and implications for technologies that will be needed for their processing. The study was followed by a comprehensive technology identification and

selection process, based on the 'Sustainability Assessment Tool (SAT)' that UNEP has developed. A catalogue of technologies used in the handling of construction and demolition wastes was prepared, and each technology option was assessed and ranked against a set of sustainability criteria covering strategic, operational, financial and socio-cultural factors. The 'most preferred' options generated by the above exercise enabled the local stakeholders in Indonesia, the Ministry of Environment, BAPEDALDA and the Cleansing Department to choose an appropriate technology for reusing and recycling construction and demolition wastes.

RISK REDUCTION

UNEP's collaboration with the UN International Strategy for Disaster Risk Reduction (ISDR) system aims to ensure that environmental management concerns are addressed in the implementation of the internationally agreed Hyogo Framework for Action. This involves using the natural buffering functions of ecosystems to reduce vulnerability from natural hazards.

As the leader of the Environment and Disaster Working Group within the ISDR system, UNEP played a role in the first session of the Global Platform for Disaster Risk Reduction, which was held in Geneva, Switzerland, in June 2007. Attended by over 600 representatives of governments, UN agencies, international financial institutions, regional bodies, civil society, the private sector, and the scientific and academic communities, the meeting was convened as a forum for all parties involved in disaster risk reduction to exchange experiences and access information on how other countries addressed particular challenges in implementing the Hyogo Framework for Action.

In addition, to support advocacy, capacity building and training programmes, and to facilitate the design and implementation of environmentally sound solutions to the challenges posed by natural hazards, UNEP and ISDR published *Environment and Vulnerability: Emerging Perspectives*. The paper illustrates the connections between the state of the environment and disaster risk, and identifies areas of action where environmental managers could be engaged to reduce disaster risk.

Responding to the need of the Central Africa sub-region and with financial assistance from the Government of the People's Republic of China, UNEP initiated a Central Africa Disaster Management Centre in Congo Brazzaville. The centre aims to strengthen the capacity of the countries of the sub-region in the area of disaster management. To this end, a training of a three-member team from Congo Brazzaville in charge of the Centre was organized by UNEP in March 2007 in Nairobi. A number of activities were also undertaken as a follow up to the dumping of toxic waste in Côte d'Ivoire in 2006 and the decision of the eighth Conference of the Parties to the Basel Convention requesting parties to provide technical and financial assistance to Côte d'Ivoire to help it implement its emergency plan. Efforts to mobilize financial resources continue to be undertaken. Several consultations were also held with the Government of Côte d'Ivoire.

AWARENESS AND PREPAREDNESS

Within the ongoing cooperation with the Joint UNEP/OCHA Environment Unit, UNEP co-organized the seventh meeting of the Advisory Group on Environmental Emergencies in association with the Awareness and Preparedness for Emergencies at Local Level (APELL) Programme, in June 2007 in Rosersberg, Sweden. In many developing countries, small and medium-sized enterprises (SMEs) form the backbone of the industrial sector where hazardous chemicals are handled. To set up effective chemical safety management approaches, UNEP initiated a two-year capacity building project in October 2006 aiming at fostering chemical safety management and chemical risk information in SMEs along the value chain through stakeholder engagement and communication. UNEP is also initiating the development of a flexible framework for addressing major chemical accidents under the wider scope of the Strategic Approach to International Chemicals Management (SAICM).

In 2007, UNEP finalized the Community Vulnerability Reduction project in Sri Lanka and Morocco, aiming at improving prevention and preparedness for disaster reduction in three industrial sites. Integrated emergency plans were produced following the APELL process for emergency preparedness through multi-stakeholder engagement. Project outputs include a training package with a multi-hazard approach

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to risk reduction. This project was financed by the French Ministry of Environment, and included the strong involvement of the national governments, opening the path for project replication within the countries.

ATOMIC RADIATION

At its 55th session, the Vienna-based UN Scientific Committee on the Effects of Atomic Radiation (UNSCEAR), whose secretariat is provided through UNEP, reconfirmed that there was no need to change its overall risk estimates for the cancer and hereditary effects of radiation exposure. The Committee also reviewed documents on routine and accidental radiation exposures of the public, workers and patients, on the health effects due to radiation from the Chernobyl accident, and on effects on non-human biota, for submission to the General Assembly in 2008.

Together with seven other international organizations, UNEP was a sponsor of Fundamental Safety Principles that constitute the basis for establishing standards for protection against exposure to ionizing radiation under the IAEA's safety standards programme. The fundamental safety objective—to protect people and the environment from harmful effects of ionizing radiation—applies to all circumstances that give rise to radiation risks. UNEP is now participating in the secretariat for the revision of the International Basic Safety Standards for Protection against Ionizing Radiation and for the Safety of Radiation Sources. These standards are used around the world by Governments to establish legislation and regulations to control radiation exposure.

ENVIRONMENT AND PEACEBUILDING

Natural resources often lie at the heart of wars and civil strife. Between 1990 and 2002, at least seventeen major conflicts—nine of which occurred in Africa—were driven by the exploitation of natural resources. Civil wars such as those in Liberia, Angola and DR Congo have centred on high-value resources such as timber, diamonds and oil. Other conflicts, including those in Darfur, Nepal and in the Middle East, involve control of scarce resources such as land and water. As the global population continues to rise, and the demand for resources continues to grow, there is significant potential for conflicts over natural

resources to multiply in the coming decades. Climate change may be a further compounding factor, in particular where it increases water scarcity, turns fertile landscapes into deserts, or where coastal communities are submerged by rising sea-levels.

The UN Security Council acknowledged the role played by natural resources in armed conflict during its debate in June 2007, and recommended that the mandates of UN peacekeeping operations consider helping the governments of resource-rich countries prevent their illegal exploitation from fuelling further violence. Having gained significant expertise in assessing the environmental consequences of conflict, UNEP is now developing capacity to address the environmental causes of conflict, as well as to promote the use of shared natural resources as tools for cooperation and peacebuilding between and within conflict-affected nations. In this capacity, UNEP proposes to provide technical support to the Peacebuilding Commission and associated UN entities, including the UN Development Group (UNDG), the Department of Peacekeeping Operations (DPKO) and the Department of Political Affairs (DPA) to ensure that environmental causes of conflict are fully assessed and integrated in the development and implementation of strategies for peacemaking, peacekeeping and peacebuilding.

Under its Environment, Conflict and Peacebuilding programme, UNEP will provide environmental expertise and analysis on four main issues: i) the direct and indirect linkages between environment and conflict; ii) risks to peace from ineffective environmental governance; iii) potential opportunities for peacebuilding through environmental cooperation; and iv) identification and sequencing of environmental priorities that can contribute to the peace process. To support the programme, UNEP and the International Institute for Sustainable Development (IISD) have established an Expert Advisory Group on Environment, Conflict and Peacebuilding. The group, which consists of the leading academics, think-tanks and NGOs working on the interface between environment, conflict and peacebuilding, will be used by UNEP to develop tools, conduct research and be deployed on UNEP teams to client countries of the Peacebuilding Commission. Finally, UNEP is seconding a senior environmental expert to the Peacebuilding Commission Support Office in New York for a period of two years.

THE REGIONAL PERSPECTIVE: EUROPE

The European region as defined by the UN comprises 54 highly diverse countries (including Israel) and various regional groupings. The enlargement of the European Union from 12 to 27 Member States between 1990 and 2007, led to the implementation of common environmental regulations across most of western and central Europe. As seven countries of southeastern Europe and Turkey prepare for accession, these countries' environmental policies are increasingly driven by efforts to align their legislation with EU rules. The EU also promotes cooperation on environmental issues with its immediate neighbours through the European Neighbourhood Policy. In addition, EU-Russia Strategic Partnership provides an umbrella for strengthening cooperation on environmental issues, in particular transboundary issues. Meanwhile the enlargement of the membership of the European Environment Agency to 32 member countries in 2007 (the latest additions being Turkey and Switzerland) ensures a shared perspective on environmental issues.

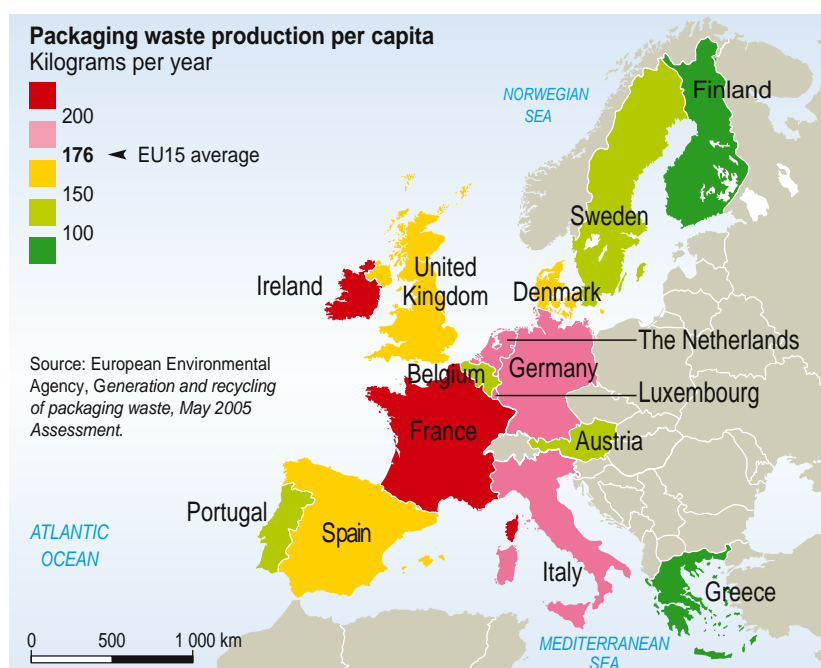
The UNEP Regional Office for Europe (ROE) represents UNEP in the major policy dialogues in the UN Economic Commission for Europe (UNECE) region, including the Environment for Europe process, the Health and Environment process, and the Ministerial Conference on the Protection of Forests in Europe. It promotes intergovernmental policy dialogue and regional cooperation, and works to enhance national capacity for environmental management and response to emergencies, particular in countries with economies in transition. UNEP-ROE also works to raise awareness on environmental issues and enhance information exchange. It also helps to translate global policies into regional action.

UNEP-ROE is based in Geneva, Switzerland, with out-posted offices in Brussels, Moscow and Vienna. The Brussels liaison office promotes policy exchange between UNEP and the European institutions, as well as other Brussels-based organizations, such as the Africa Caribbean and Pacific (ACP) Secretariat. UNEP and the ACP Secretariat signed an MoU in May 2007 on six areas of cooperation: Management of Natural Resources, Desertification and Drought, MEAs, Water and Sanitation, Energy and Cross-cutting issues (such as education and awareness raising). Key issues of common concern between the EU and UNEP include climate change and energy, chemicals management, sustainable consumption and production, protection of the marine environment, the implementation of MEAs, and environment and security.

The objectives of UNEP's Moscow Office include promoting UNEP and its programmes in the Russian Federation by strengthening cooperation with the Government, the Parliament, the non-governmental community and the science and business sectors; supervising and assisting in implementing UNEP and UNEP-GEF projects in Russia; gathering and analyzing information on environmental and related political affairs in the country; and supporting Russia in its environmental cooperation with countries of the region. The role of the UNEP office in Vienna is to provide the interim secretariat to the Carpathian Convention, serve as the UNEP focal point in the Secretariat of the Mountain Partnership, and serve as focal point and host of the sub-regional desk for South Eastern Europe of the ENVSEC Initiative and support the implementation of UNEP projects in the ENVSEC portfolio in South Eastern Europe.

One of ROE's unique initiatives is the Geneva Environment Network (GEN). This Swiss-funded project of UNEP is a cooperative partnership between more than 50 environment and sustainable development organizations and units based in Blocks 1 and 2 of the International Environment House and elsewhere in the Geneva area. The partnership contributes to raise awareness on major international environmental treaties, and to improve information dissemination and public outreach. As one of its main activities, GEN organizes roundtables and workshops that bring together UNEP Geneva-based offices, other Geneva-based UN agencies, NGOs, industry, embassies and missions, to discuss emerging issues related to the environment and to sustainable development. These roundtables also function as converging points for the coordination of strategies for international conferences and meetings as well as for specific environmental issues.

Along with the City and Canton of Geneva, GEN co-organizes the Sustainable Development Fair every June in Geneva. In 2007, the fair on the theme of Sustainable Living, had over 20,000 people attend. The objective was to sensitize the public on actions they can take to protect biodiversity and fight climate change. GEN also publishes the *Geneva Green Guide*, a practical guide for Geneva-based organizations working on the environment and sustainable development.



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Focus on: ENVIRONMENT AND SECURITY IN EUROPE

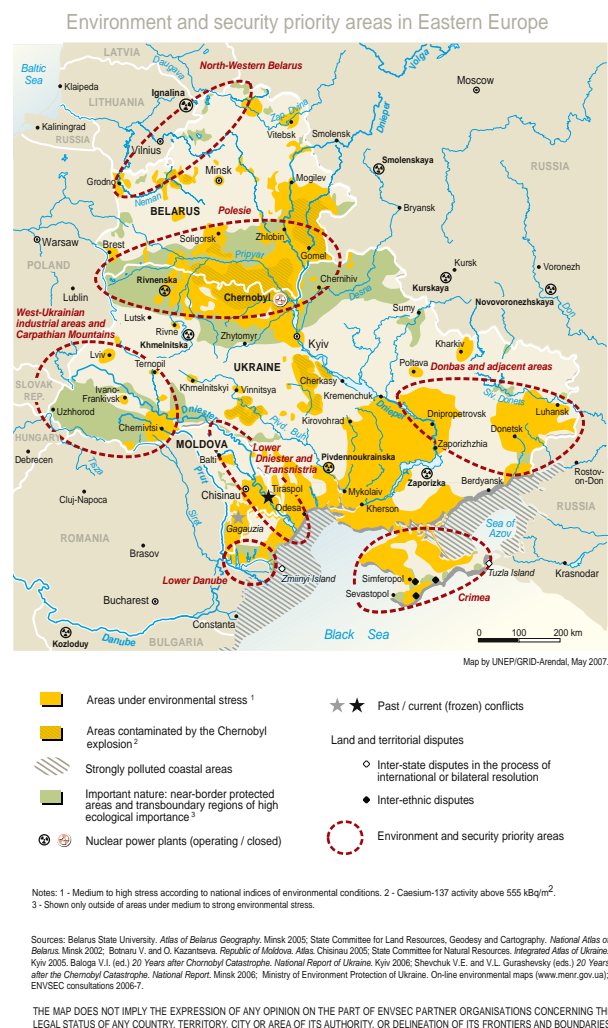
In 2007, the Environment and Security Initiative (ENVSEC), continued to implement projects in the sub-regions of Southern Caucasus, Central Asia, South Eastern and Eastern Europe. At the request of Belarus, Moldova and Ukraine, the ENVSEC partners initiated an environment and security assessment in the Eastern European sub-region 2006–2007. The ENVSEC assessment report, launched at the Economic and Environmental Forum of the Organization for Security and Cooperation in Europe (OSCE) in May 2007, highlights the importance of recognizing the region’s geopolitical positioning between the EU and the Russian Federation, improving energy security without jeopardizing the environment, cleaning up obsolete military infrastructure and chemicals stocks, addressing the Transnistrian conflict in Moldova, and strengthening cooperation over shared rivers and ecosystems. Shared natural resources offer an excellent opportunity for regional cooperation, as is demonstrated by the ENVSEC-facilitated agreement on Dniester river basin cooperation developed between Moldova and Ukraine. The report has been published in both English and Russian and is available online.

The ENVSEC Initiative shows that the environment can act as a bridge for cross-boundary cooperation. Joint assessments and information exchanges have identified common interests, improved mutual understanding, and built foundations for agreements on transboundary environmental management. The partnership approach on which ENVSEC is based brings explicit benefits of improved coordination and a cost-effective comprehensive approach to regional cooperation, as well as enhanced synergies and coherence with other donor initiatives at the country and sub-regional level. A work programme including over 70 projects stemming from region-specific priorities related to the need for further assessments, policy development, institution and capacity building as well as technical cooperation has been elaborated for 2007–2009.

ENVSEC is a partnership between UNEP and UNDP, OSCE, the UN Economic Commission for

Europe (UNECE) and the Regional Environment Centre for Central and Eastern Europe (REC). The North Atlantic Treaty Organization (NATO) has joined the Initiative as an associated partner. The Initiative works to assess and address environmental problems, which threaten or are perceived to threaten security, societal stability and peace, human health and/or sustainable livelihoods, within and across national borders in conflict-prone regions. Over 50 projects have been launched and implemented with total funds amounting to \$12.8 million, covering 19 countries in the Southern Caucasus, Central Asia and Southeastern and Eastern Europe.

Environment and security priority areas in Eastern Europe. Environmental problems often compound external security tensions and worsen internal security challenges in Eastern Europe. Of particular concern are environmental hazards concentrated along national borders (including the borders with the EU, Russia and borders between the three countries). © UNEP/GRID-Arendal



UNITED NATIONS ENVIRONMENT PROGRAMME (UNEP)

All UNEP Divisions are located at UNEP Headquarters with the exception of DTIE. Internet access to all UNEP Divisions and additional e-mail addresses are available from the UNEP web site www.unep.org.

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