

Global

Environmental threats in 2006 highlighted the need for national and international efforts to address global problems. Climate change commanded increased attention, including a number of business initiatives, but policy makers also addressed issues such as marine biodiversity and global chemicals and waste management.

CLIMATE CHANGE: A GLOBAL PROBLEM

Following an ongoing trend since the late 1980s, 2006 was the sixth warmest year since records began in 1880 (NOAA 2006a). There were other signs of increasing climate instability. Chinese officials attributed extreme droughts to climate change—droughts that left millions short of water (Reuters/MSNBC 2006). In East Africa, persistent drought was followed by heavy rainfall and flooding that displaced two million people and took hundreds of lives (Oxfam 2006, CNN 2006).

New research and climate modelling published in 2006 strengthened the case for action on global warming. A new US National Aeronautics and Space Administration (NASA) study found that the world's temperature had increased by about 0.2°C per decade in the past 30 years, reaching the warmest levels since

the end of last ice age nearly 12,000 years ago. It is now within 1°C of the maximum temperature of the past million years, threatening dangerous climate change based on the likely effects of sea level rise and species loss (Hansen 2006) (Figure 1).

New data showed an alarming increase in the human output of greenhouse gases. Figures published in 2006 showed that between 2000 and 2005 carbon dioxide (CO₂) emissions grew by 3.2 per cent—four times faster than in the preceding 10 years, according to researchers at the Global Carbon Project (Le Quéré 2006). Average concentrations of CO₂ in 2005 were measured at 380 parts per million (ppm), up from 377.5 ppm in 2004 (NOAA 2006b).

Among countries with commitments to cut emissions under the Kyoto Protocol only Denmark, France,

Iceland, the UK, Germany, and Norway reported lower emissions in 2004 than in 1990, along with ten formerly communist countries where problems of transition depressed economic activity. These results exclude activities related to land use, land use change, and forestry (UNFCCC 2006a).

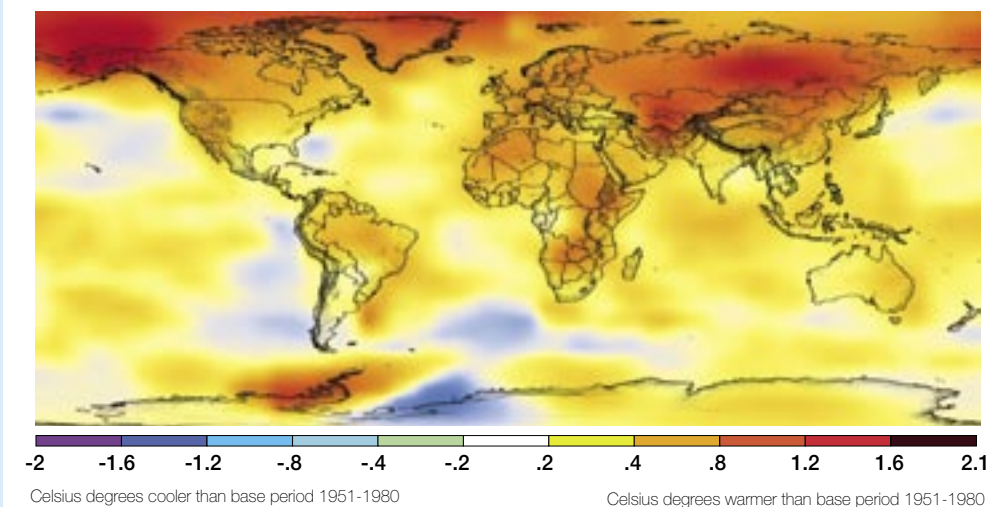
Given the complexity of reducing CO₂ emissions, interest has grown in sequestration. Amid some controversy regarding sequestered CO₂'s potential contribution to ocean acidification, the London Convention on marine dumping was amended in November, making it legal from February 2007 to bury CO₂ in natural structures under the oceans (IMO 2006).

The story for methane has been more encouraging. Atmospheric methane concentrations have remained stable for the past seven years (Simpson and others, 2006). Among 41 Annex I parties to the Kyoto Protocol who reported data, overall methane emissions fell by 18 per cent between 1990 and 2004. In 24 of these countries methane emissions declined by more than 10 per cent and increased by more than 1 per cent in only 8 countries (UNFCCC 2006a).

Ocean surveys are illustrating that the pace of planetary change is variable and not linear. Over time global warming is expected to raise ocean temperatures, but a 2006 study found that the average temperature of the upper ocean fell by 0.03°C from 2003 to 2005, compared with an increase of 0.09°C from 1993 to 2003. The dip was significant, equal to about one-fifth of the heat gained by the ocean between 1955 and 2003 (Lyman and others 2006).

Last year a 30 per cent slowdown was reported in the Atlantic Conveyor currents, which carry warm water from the Gulf of Mexico to Northern and Western Europe (Bryden and others 2005, UNEP 2006c). In 2006 this alarming finding was subject to downward revision and doubt. Readings from the first year of detailed monitoring show a very high variation within the year. Many scientists now suggest that years or decades of monitoring will

Figure 1: Mean Surface Temperature Anomaly 2001-2005



Source: NASA Goddard Institute for Space Studies

be needed to determine if any long term trend in the conveyor is under way (Kerr 2006). Other studies have revealed no sign of a slowdown (Meinen and others 2006, Schott and others 2006).

Meanwhile, the Stern Review on the Economics of Climate Change, released in late 2006, warned that failure to control climate change could cut 5 to 10 per cent annually from the global economy by the end of the century and lead to economic and social disruption on a scale similar to the Great Depression. In the same report, research indicated that tackling climate change could boost economic growth (Stern 2006).

Stakeholders and groups around the globe increasingly voiced their alarm about climate change in 2006. In a recent international survey, at least 80 per cent of respondents in 27 of the 30 countries polled described climate change as either 'very serious' or 'somewhat serious' (Globescan 2006). This heightened concern was paralleled by increased media coverage in many countries, most dramatically in the US (see North America section).

Taking on the climate agenda at multiple levels

Action on climate is being undertaken by private and public actors at all levels. In the business sector, many companies are demonstrating a genuine commitment to addressing the problem, while many more are recognizing that there are promising opportunities to reduce costs and find new sources of profit (Green Money Journal 2006,

LaMonica 2006, Lash 2006, Webb 2006). Rupert Murdoch declared that his News Corporation would become a carbon neutral company (NewsCorp 2006). Lee Scott, president of Wal-Mart, the world's largest retailer, committed to reduce the company's greenhouse gas emissions by 20 per cent over the next seven years and to double fleet fuel efficiency over 10 years (Alter 2006). Virgin Group Chairman Richard Branson pledged to invest US\$3 billion over ten years in renewable energy and to cut greenhouse gas emissions by aircraft (Virgin Atlantic 2006).

For several years, insurance and reinsurance companies have been among the leaders in highlighting the challenges of climate change. Following record damage from extreme events in 2005 (Hurricane Katrina created US\$45 billion in insured losses), the industry announced many new initiatives, including 'green building credits' and incentives to invest in renewable energy (Mills and Lecomte 2006). According to a new report from UNEP's Finance Initiative, disaster losses could reach US\$1 trillion annually by 2040, posing huge challenges to the industry (UNEP 2006d).

At the level of local government, in August mayors belonging to the Large Cities Climate Leadership Group—which includes Cairo, Delhi, Johannesburg, London, Mexico City, New York, and Sao Paulo—announced a partnership with the Clinton Climate Initiative to combat climate change in large urban areas (Blood 2006). Close to 650 local governments now belong to Local Governments for Sustainability (ICLEI),

which promotes action on climate change locally and lobbies for action internationally (ICLEI 2006).

On the national front, positive news included China's new energy law committing US\$180 billion to renewable energy (Li 2006).

Internationally, diplomats at the 12th Conference of the Parties of the UN Framework Convention on Climate Change (UNFCCC), held in Nairobi in November, considered how an international climate change regime could look after 2012, when the current commitments come up for evaluation and renewal. Despite mounting scientific evidence and concerns of civil society, multinational commitments regarding GHG emissions cuts were not agreed. However, significant initiatives were launched to help Africa benefit from the international carbon finance market and the Clean Development Mechanism (CDM) (see Africa section). It was also agreed to launch a scientific study of the potential for expanding the CDM to reward developing countries that act to halt deforestation (IISD 2006d) (**Box 1**).

The UN Framework Convention on Climate Change (UNFCCC) was one of four initiatives emerging from the 1992 Earth Summit held in Rio de Janeiro. All of these initiatives continued to guide the global environmental agenda in 2006. The original initiative on Forest Principles has evolved into today's UN Forum on Forests (**Box 2**). There were two other 'Rio Conventions', the Convention on Biodiversity and the Convention to Combat Desertification (**Box 3 and Box 4**).

Box 1: Carbon markets and new technologies

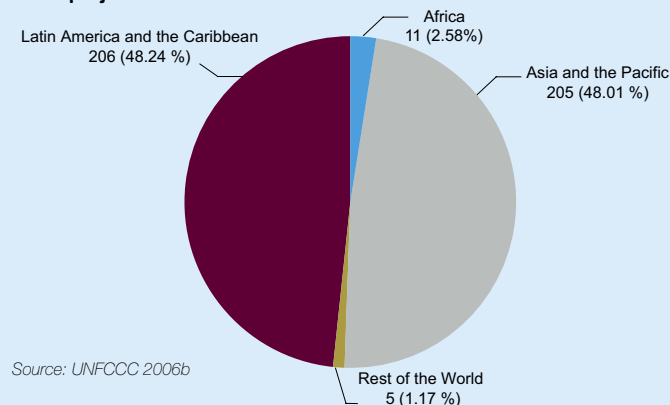
2006 marked a breakthrough year for global and regional cooperation to employ market-based mechanisms and find cost effective solutions in combating climate change. The Kyoto Protocol's Clean Development Mechanism (CDM), which encourages investment from industrialized countries in renewable energy and other emissions reduction efforts in the developing world, also experienced a very rapid increase in support. By early December, more than 1 300 projects were in the pipeline and 427 were fully registered, with the UN's Framework Convention on Climate Change (UNFCCC) estimating that more than 1.5 billion tonnes of emissions reductions would be achieved from the CDM by 2012—the equivalent of the UK and Spain's annual emissions combined.

Emissions trading experienced a surge in popularity. At the regional level, the European Union's Emissions Trading Scheme was expected to generate almost US\$30 billion in trades in 2006—almost a threefold increase on the previous year (see Europe section). Other emissions trading initiatives, such as the Chicago Climate Exchange, the New South Wales Emission Trading Scheme in Australia, and the Regional Greenhouse Gas Initiative in the Northeastern US, also continued to develop. Such mechanisms seem certain to continue growing rapidly and are becoming increasingly interconnected. Given the difficulty of meeting short-term energy demand with renewables, discussions have already started on carbon capture and storage in the context of the UNFCCC and Kyoto Protocol.

Sources: UNFCCC 2006b, Environmental Finance 2006, Point Carbon 2006, Mitchell 2006, IISD 2006b,c

Registered CDM projects by region 2006

Total projects 427



Source: UNFCCC 2006b

Box 2: Illegal logging on the agenda

With less than 10 per cent of the world's forests being managed sustainably, illegal logging remained on the international agenda in 2006. A major achievement early in the year was the completion of negotiations of a successor agreement to the International Tropical Timber Agreement, which now states as an objective the need to address illegal logging and its related trade in tropical timber. While the sixth session of the UN Forum on Forests did not follow suit with an equally decisive decision on illegal logging in February, the Secretariat later announced that the Forum would build on the ongoing efforts of the Forest Law Enforcement and Governance processes to galvanize international and multi-stakeholder commitment to combat the problem of illegal logging and its related trade. In September, the G8 Illegal Logging Dialogue was launched to bring together stakeholders from the G8 and major timber producing nations to develop a plan of action to address illegal logging by focusing on financial transparency, support for progressive companies committed to sustainable production, and the development of a discerning market for legal and sustainable timber in EU and G8 markets.

Additional efforts in 2006 to stem illegal logging included the release by the International Tropical Timber Organization (ITTO) and FAO of guidelines on best practices to improve law compliance in the forest sector. These best practice guidelines support national and regional initiatives in design and implementation of measures to combat illegal logging. Demand-side policies are also playing a role in combating illegal logging. Certification schemes have been used to inspire private sector involvement in this issue. There are now 10.5 million hectares, or three per cent, of natural production forests in ITTO producer member countries where sustainable production practices are certified by independent forestry organizations such as the Forest Stewardship Council. In light of the small percentage of certified tropical forests, consumer country experts have also pointed to public timber procurement policies as a means to reduce their countries' contribution to illegal logging.

Sources: Brack and Saunders 2006, ITTO 2006a,b, UNFF 2006, USTR 2006, World Bank 2006.



FSC timber hauled from certified forest in Amazonas, Brazil. Over 90 per cent of the certified wood from the area is exported to Europe.

Source: Joerg Boethling / Still Pictures

MARINE BIODIVERSITY: GLOBAL RESPONSES AND INSTITUTIONAL INTERLINKAGES

In 2006, scientific information derived from explorations carried out during the previous decade created alarm over the mounting vulnerability of marine biodiversity, particularly in areas beyond national jurisdiction (DOALOS 2006c). There was also concern over the limitations of the current legal system in dealing with scientific and technological advances and humans' expanding impact on the oceans (UNEP and IUCN 2006).

One of the most comprehensive studies of marine biodiversity ever made established that diversity was crucial to productivity. Ecosystems with higher diversity had 80 per cent more biomass and greater system stability than more impoverished ones (Worm and others 2006). The study cast doubt on the feasibility of reaching the 2002 World Summit on Sustainable Development (WSSD) target for the restoration of fish stocks to sustainable levels by 2015. Documenting an alarming decline in marine biodiversity across most marine ecosystems, the authors projected that the last of today's commercial fish and seafood species would collapse by 2050. However, protected areas and fishing closures boosted the biodiversity, measured in species richness, by 23 per cent and led to a fourfold improvement of fishing in neighbouring waters. The report called for the creation of more marine reserves, sustainable management of fishing, and tighter control of pollution (Worm and others 2006).

Contradictory national initiatives in 2006 further highlighted the need for an enhanced international framework. While France announced in June 2006 the creation of a new sanctuary for whales and dolphins in the West Indies, Iceland resumed commercial whaling in October (WWF 2006, Oceana 2006). The International Whaling Commission (IWC) adopted a declaration recognizing that it had failed to complete and implement a management regime to regulate commercial whaling and supporting 'sustainable' whaling in principle (IWC 2006). The United States started work with regional organizations on guidelines for sustainable fisheries practices, while the European Union, rejecting the advice of scientists and conservationists, did not close its cod fisheries in the Eastern Baltic, but instead cut the quota by ten per cent (White House 2006, ENS 2006).

High seas protected areas

The WSSD also set a goal of establishing representative networks of marine protected areas by 2012. Evaluations in



School children watch a Beard's Beaked whale brought to the Japanese port city of Wada 21 June 2006. Beard's Beaked and pilot whales are not subject to the International Whaling Commission's 1986 ban on commercial whaling.

Source: David Guttenfelder/AP Photo

2006 showed that such areas account for only 0.6 per cent of all the oceans—at the current rate of designation, the target will not be reached until 2085 (Cicin-Sain and others 2006). The Review Conference of the UN Fish Stocks Agreement, convened in May 2006, also recognized the role of marine protected areas, but called upon States and regional fisheries management organizations to develop these areas and protect marine biodiversity only on a case-by-case basis (DOALOS 2006b).

Ecosystem approach

The WSSD called for the application of the ecosystem approach for sustainable development of the oceans by 2010. Reports in 2006 confirmed that the ecosystem approach provides the “best available framework for managing multiple threats, ecological uncertainties, human uses and interests,” but is still sparingly applied in open oceans and deep waters (UNU 2006). Enhanced application of the ecosystem approach received widespread support at the international level. The Review Conference of the UN Agreement on Fish Stocks concluded with a commitment to integrate ecosystem considerations in fisheries management (DOALOS 2006b).

The seventh meeting of the UN Open-ended Informal Consultative Process on Oceans and the Law of the Sea, held in June 2006, reached consensus on elements for a definition of the ecosystem approach as it applies to oceans, for implementation tools and principles and for its improved application (DOALOS 2006d).

Competence and institutional collaboration: the high seas as a final frontier

Many biodiversity-oriented and oceans-related instruments and forums have addressed issues related to marine

biodiversity in a sectoral fashion. The UN Food and Agriculture Organization and the International Maritime Organization have dealt with illegal, unregulated and unreported (IUU) fishing; the International Seabed Authority has dealt with the environmental impacts of mining on the deep seabed; the Informal Consultative Process has discussed bioprospecting and destructive fishing practices; and the Convention on Biological Diversity (CBD) has dealt with high seas protected areas (IISD 2006a).

In 2006, the focus of the international community shifted to integrated responses and better institutional coordination at the global level to tackle the multiple threats to oceans. This was particularly evident during the CBD's eighth Conference of the Parties in March 2006, when discussions on marine biodiversity were dominated by the question of the CBD mandate in regards to other international organizations. The Conference concluded that the CBD should concentrate on specific tasks: providing scientific and technical information and advice related to marine biodiversity, advising on the application of the ecosystem and precautionary approaches, and delivering the WSSD target to significantly reduce the current rate of biodiversity loss by 2010 (CBD 2006). This newly defined role was intended—together with



Trawlers in the Elbe River, Germany.

Source: argus / Still

Box 3: Biodiversity threats and conservation hopes

The year brought new evidence of growing threats to global biodiversity—especially to bird species in tropical habitats. However, studies also indicate that conservation efforts such as listing and protection can reverse declines.

A very detailed species-by-species assessment published in 2006 found that the rate of extinctions among birds may be far higher than previously estimated. The extinction rate before human impact was about one extinction per million species per year (E/MSY). The rate since 1800 has been estimated at 26 E/MSY. However, allowing for extinctions before 1800 and probable extinctions not yet recorded, the rate since 1800 may have reached 100 E/MSY. Rates in the last decades are less than 50 E/MSY—but they would have reached 150 E/MSY without conservation efforts.

The researchers conclude that most bird species' extinctions were previously confined to islands but that continent-wide extinctions have been documented recently. They predict that the 21st century rate could reach 1000 E/MSY and that, if the predicted deforestation and transformation of tropical landscapes continues, extinction rates may reach 1500 E/MSY by the end of the century. The scientists attribute extinctions to invasive species, expanding human technologies, and global environmental change. However, the most intriguing—and motivating—result of their inquiry suggests that conservation efforts can work to significantly reduce species loss.

The World Conservation Union (IUCN) issues a biennial Red List of Threatened Species based on criteria including quantitative thresholds of population size, distributional range, rates of decline, and extinction risk. The 2006 Red List provides an accurate measure of progress, or lack of it, in achieving the globally agreed target to significantly reduce the current rate of biodiversity loss by 2010.

The overall number of species considered to be critically endangered increased by seven per cent between 2004 and 2006—from 2 791 to 2 985. The most significant increases in the critical category were among fish species (48 per cent increase), insects (45 per cent), and reptiles (14 per cent).

The percentage of 'described species' which were threatened was highest among vertebrates, ranging from 31 per cent among amphibians and 20 per cent among mammals, to 12 per cent of birds and 4 per cent each of reptiles and fishes. Among gymnosperms such as conifers, 31 per cent were threatened. Mammals, birds, amphibians, and gymnosperms were the first groups to be completely or almost completely evaluated.

Sharks and rays are among the first marine groups to be assessed: 20 per cent of the 547 species listed are threatened with extinction. Freshwater fish are also at risk: 56 per cent of the 252 endemic freshwater Mediterranean fish are threatened.

One species which moved into the threatened categories in the 2006 Red List is the polar bear. There are an estimated 20 000 to 25 000 polar bears left in the Arctic and their survival is severely threatened by the retreat of ice due to global warming. Bears rely on broad expanses of ice to gain access to their food sources. When unstable or absent ice prevents access to food, they will give birth less often to smaller cubs with higher mortality rates. Their slow rate of reproduction means that they are unlikely to develop new behaviour patterns in time to adapt to global warming. The 2006 IUCN assessment projects a population reduction of more than 30 per cent within 45 years—and possible extinction in the wild in 100 years. Other stress factors include pollution, shipping, tourism, oil and gas operations, and traditional hunting by indigenous communities.

Following a 2005 petition from three environmental organizations, the US Fish and Wildlife Service officially announced in December 2006 that it would propose listing the polar bear as a threatened species under the Endangered Species Act (ESA). This decision is highly significant. This would be the first listed species to which global warming is officially acknowledged to be the major threat. Protection under the ESA would require the US government to develop a conservation plan and to ensure that government agencies take

no action that might jeopardize the animal's existence. There follows a 12 month review of threats and options for conservation. While the official announcement downplays any implications for US climate and oil exploration policies, environmental NGOs believe they would be empowered to take legal action over these threats.

Protection and conservation can pay off. A well known example of a species which would be extinct save for conservation is the California condor, which was down to the last nine in the wild before a conservation breeding and release programme began in 1987. Numbers in the wild have now risen to 138. However, the released condors are still highly vulnerable and conservation efforts must remain vigilant. Most of the chicks hatched in the wild have died—some by ingesting trash left by hikers, such as bottle caps and glass fragments. Since 1997, nine condors have died of lead poisoning derived from hunters' ammunition and three hunters have been convicted under the Endangered Species Act and required to pay fines varying from US\$1500 to US\$20 000.

Sources:
Pimm and others 2006, IUCN 2006a, Schliebe and others 2006, US Fish and Wildlife Service 2006, Church and others 2006, CRES 2006.



Polar bear on thin ice

Source: Fred Bruemmer / Still Pictures

other international organizations and processes on biodiversity or oceans—to complement the central role of the General Assembly. The Assembly's capacity to steer ocean and biodiversity related agencies, treaty bodies, and forums towards effective and timely international action to protect marine biodiversity in the deep sea is now to be tested.

CHEMICALS AND WASTE MANAGEMENT: TOWARDS A GLOBAL APPROACH

A number of efforts in 2006 moved the international community towards the 2002 WSSD agreed objective that, by the year 2020, chemicals should be produced and used in ways that minimize significant adverse effects on the environment and human health. The importance of a global approach to chemicals and waste management was closely tied to the globalization of trade in wastes.

During 2006, cases involving the transboundary movement of wastes confirmed the need for a globally accepted life cycle approach to chemicals and waste. The Secretariat of the Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal was asked to become involved in two prominent cases of this type. The first involved a retired French aircraft carrier en route to Alang, India, to be dismantled. Several non-governmental organizations protested that the departure violated the Basel Convention. The Secretariat encouraged India and France, both Parties to the Convention, to resolve the issue bilaterally (Basel 2006a). The ship was eventually ordered back to France. The Secretariat was also involved when a foreign ship delivered toxic material to Abidjan, Côte d'Ivoire, in August (see Africa section). As of late December 2006, donor contributions of US\$15 million were still being sought to meet clean-up costs.

Problems associated with electronic equipment waste raised international attention due to both the escalating levels of e-waste and the growing tendency to export it for disposal to countries other than the country of production or use. According to one report, 20 to 50 million tonnes of e-waste are produced each year, much of it containing toxic materials (Economist 2006). In response, beginning on 1 July 2006, Europe began limiting the use of particular substances—including lead, mercury, and cadmium—in new electronic products. On the same date California began requiring mobile phone retailers to take back and recycle old phones. The Conference of the Parties

to the Basel Convention took up this issue for the first time at its November-December meeting in Nairobi. Delegates recommended phasing out technologies that are not environmentally sound and agreed to develop a plan on the environmentally sound management of e-waste, focusing on the needs of developing countries and countries with economies in transition (IISD 2006e).

Amid the growing need for a global approach to chemical waste, negotiations on the Strategic Approach on International Chemicals Management (SAICM) were completed in February 2006, bringing a new policy framework for international action on chemical hazards to the three legally binding multilateral instruments that currently govern chemicals issues: the Stockholm Convention on Persistent Organic Pollutants (POPs), the Rotterdam Convention on the Prior Informed Consent Procedure for Certain Hazardous Chemicals and Pesticides in International Trade (PICs), and the Basel Convention. SAICM is a voluntary agreement that covers issues from risk assessments of chemicals and harmonized labelling to elimination of obsolete and stockpiled products. It includes provisions for establishing national centres to help countries, especially in the developing world, to train staff in chemical safety, including dealing with spills and accidents.

The three legally binding convention bodies considered a global approach to chemicals and waste management through the use of a life cycle or 'cradle-to-grave' approach, and addressed the possibilities of coordinating and combining their activities. All three conventions agreed in 2006 to establish an ad hoc joint working group to consider options—such as establishing a common Executive Secretary and core

management functions for the three conventions or integrating administrative support, implementation, and technical assistance—with the Parties to the Stockholm Convention calling for cooperation and coordination among the three conventions (UNEP 2006a, IISD 2006e).

LOOKING TOWARD 2007

Developments in 2006 suggest a few encouraging trends in addressing sustainable development concerns. Multilateral efforts to enhance the coordination among, and to rationalize the different inputs of, international institutions and natural resource management were underway at a number of levels. At the same time, there is a growing recognition of the importance of addressing cross-cutting issues in a holistic manner and developing global partnerships between international institutions and non-State actors.

The High-Level Panel on UN System-Wide Coherence in the areas of Development, Humanitarian Assistance, and the Environment, along with consultations on international environmental governance within the General Assembly, delivered options to improve coordination among UN agencies. The High-Level Panel recommended an independent assessment of international environmental governance within the UN system. It also recommended that any duplications should be eliminated and that UNEP should be upgraded and have real authority as the environmental policy pillar of the UN system (UN 2006).

However, 2006 was not a 'breakthrough year' in key negotiations such as climate change. The issue will require some countries to act as champions if the world is to act in a timely manner. Efforts must be made to



Boy hired to haul electronic scrap from Alaba market in Lagos, Nigeria to this nearby informal dump sitting on a swamp. Imported scrap televisions and computers that could not be repaired are burned.
Source: Basel Action Network

link the environment and economics—as pioneered by the UN Economic Commission for Europe's Recommendations on Payments for Ecosystem Services in Integrated Water Resources Management, which offer international guidance for the establishment of payment for ecosystem services at the local, national, and transboundary levels (UNECE 2006). All stakeholders will need to be involved if emerging issues are to be dealt with from a sustainable development perspective—and sustainable development will need to move from the periphery to the center of decision-making considerations.

Box 4: Priorities for Action on Deserts and Desertification

The UN's designation of 2006 as the International Year of Deserts and Desertification (IYDD) sought to focus international attention and action on the situation of approximately 500 million people who live in deserts and desert margins, totaling eight per cent of the global population. An average of 68 per cent of the species found in the desert biome are endemic, but the pressures and impacts of agriculture and other human land use, fragmentation associated with infrastructure, and climate change may cause biodiversity losses that could decrease this average of original species to 58.3 per cent by 2050.

IYDD-related events identified actions to address the issue in relation to migration, scientific options, and sustainable water and land management among other matters. Several studies released in 2006 further identified approaches to manage the water crisis in drylands. *Global Deserts Outlook* stressed the need to discourage wasteful water consumption as well as to combine new technologies such as drip irrigation, micro-sprinklers, and fog harvesting in coastal deserts, with traditional water-efficient management techniques. The Comprehensive Assessment of Water Management in Agriculture identified improving agricultural water management in developing countries as a key priority, particularly on rain-fed farms on Africa's savannas, and recommended building more water storage, installing better irrigation systems, and developing drought-resistant crops. The 2006 *UN World Water Development Report* emphasized modifying water demand and usage through increased awareness, education and water policy reforms, and adopting Integrated Water Resources Management (IWRM) and water efficiency plans. Ministers at the 4th World Water Forum in Mexico City in March 2006 reaffirmed their commitment to achieve internationally agreed IWRM goals of access to safe drinking water and basic sanitation agreed upon in Agenda 21, the Millennium Declaration, and the Johannesburg Plan of Implementation.

Sources: CA 2006, National Water Commission of Mexico 2006, UNEP 2006b, World Water Assessment Programme and UNESCO 2006, and UNESCO 2006

REFERENCES

- Alter, L. (2006). It's Getting Harder to Hate Wal-Mart. *Treehugger*. http://www.treehugger.com/files/2006/05/its_getting_har.php [Accessed December 3]
- Basel Convention (2006a). *Press Note from the Basel Convention Secretariat on the Ship Clemeanceau*. <http://www.basel.int/press/prClemeanceau.doc> [Accessed 24 August 2006]
- Basel Convention (2006b). *Update on the Abidjan Hazardous Wastes Crisis*. <http://www.basel.int/press/pr120906.doc> [Accessed 3 October 2006]
- Blood, M. (2006). Bill Clinton, Global Mayors Form Alliance on Climate Change. *Climate Initiative/Associated Press*. <http://www.clintonfoundation.org/080106-nr-cf-cci-ve-bill-clinton-global-mayors-form-alliance-on-climate-change.htm> [Accessed 27 August 2006]
- Brack, D. and Saunders, J. (2006). *Demand-side options: Policies and measures for reducing imports of illegal timber products to consumer countries*. Chatham House, London
- Bryden H., Longworth, H.R., and Cunningham S. (2005). Slowing of the Atlantic meridional overturning circulation at 25°. *Nature*, 438, 655-657
- Church, M. E., Gwiazda, R., Risebrough, R. W., Sorenson, K., Chamberlain, C. P., Farry, S., Heinrich, W., Rideout, B. A., Smith, D. R. (2006). Ammunition is the Principal Source of Lead Accumulated by California Condors Re-Introduced to the Wild. *Environ. Sci. Technol.*, 40(19), 6143-6150. doi: 10.1021/es060765s
- Cicin-Sain, B., Vandeweerd, V., Bernal, P.A., Williams, L.C. and Balgos, M.C. (2006). Meeting the Commitments on Oceans, Coasts, and Small Island Developing States Made at the 2002 World Summit on Sustainable Development: How Well Are We Doing? Co-Chairs' Report—Volume 1. In: *Third Global Conference on Oceans, Coasts and Islands, June 2006*. <http://www.globaloceans.org/globalconferences/2006/pdf/WSSDRReport.pdf> [Accessed 9 November 2006]
- CNN (2006). *Nearly 2 million flee floods in East Africa*. 17 November 2006. http://www.cnn.com/2006/WORLD/africa/11/17/africa.floods.ap/index.html?ref=rss_world [Accessed 25 November 2006]
- CA (2006). *Water for Food, Water for Life: the Comprehensive Assessment of Water Management in Agriculture*. Comprehensive Assessment of Water Management in Agriculture. In print
- Convention on Biological Diversity 2006. *Conference of the Parties Decision VIII/24 "Protected areas"* (UNEP/CBD/COP/8/31). <http://www.biodiv.org/doc/meetings/cop/cop-08/official/cop-08-31-en.pdf> [Accessed 10 October 2006]
- CRES (2006). *Milestones in California Condor Conservation*. Conservation and Research for Endangered Species. http://cres.sandiegozoo.org/projects/sp_condors_milestones.html [Accessed December 1 2006]
- DOALOS (2006a). *Report of the Ad Hoc Open-ended Informal Working Group to study issues relating to the conservation and sustainable use of marine biological diversity beyond areas of national jurisdiction (A/61/65)*. UN Division for Ocean Affairs and Law of the Sea, New York. http://www.un.org/Depts/los/general_assembly/general_assembly_reports.htm [Accessed 10 October 2006]
- DOALOS (2006b). *Report of the Review Conference on the Agreement for the Implementation of the Provisions of the United Nations Convention on the Law of the Sea of 10 December 1982 relating to the Conservation and Management of Straddling Fish Stocks and Highly Migratory Fish Stocks, Annex "Outcome of the Conference."* (A/CONF.210/2006/15). UN Division for Ocean Affairs and Law of the Sea. http://www.un.org/Depts/los/convention_agreements/review_conf_fish_stocks.htm [Accessed 5 October 2006]
- DOALOS (2006c). *Report of the Secretary-General on Oceans and the Law of the Sea to the 61st Session of the General Assembly Addendum 1 (A/61/63/Add.1)*. UN Division for Ocean Affairs and Law of the Sea. http://www.un.org/Depts/los/general_assembly/documents/a61_63_add_1_advance.pdf [Accessed 5 December 2006]
- DOALOS (2006d). *Report on the work of the United Nations Open-ended Informal Consultative Process on Oceans and the Law of the Sea at its seventh meeting (A/61/156)*. UN Division for Ocean Affairs and Law of the Sea. http://www.un.org/Depts/los/consultative_process/consultative_process.htm#A/61/156 [Accessed 5 October 2006]
- Economist (2006). How green is your Apple?: Not very, according to Greenpeace. *The Economist*, 25 August. [Accessed 11 November 2006]
- Environmental Finance (2006). *Single EU-wide emissions cap proposed for post-2012*. World Business Council on Sustainable Development. <http://www.wbcsd.org/plugins/DocSearch/details.asp?type=DocDet&Objectid=MTk2NzU> [Accessed 28 August 2006]
- ENS (2006). Experts Call for Ban on North Sea Cod. *Environment News Service*, 18 October. <http://www.ens-newsire.com/ens/oct2006/2006-10-18-01.asp> [Accessed 12 November 2006]
- Globescan (2006). *30-Country Poll Finds Worldwide Consensus that Climate Change is a Serious Problem*. http://www.globescan.com/news_archives/csr_climatechange.html [Accessed 24 August 2006]
- Green Money Journal (2006). *Global Climate 100 Index Marks First Year Milestones*. <http://www.greenmoneyjournal.com/article.php?newsletterid=38&articleid=499> [Accessed 26 August 2006]
- Hansen, J., Sato, M., Ruedy, R., Lo, K., Lea, D. W. and Medina-Elizade, M. (2006) Global temperature change. *Proceedings of the National Academy of Sciences*. doi:10.1073/pnas.0606291103. <http://www.pnas.org/cgi/content/full/103/39/14288> [Accessed 1 December 2006]
- ICLEI (2006). *ICLEI provides report to CSD-15*. International Council for Local Environmental Initiatives, Toronto. [http://www.iclei.org/index.php?id=1487&tx_ttnews\[backPid\]=1566&tx_ttnews\[pointer\]=2&tx_ttnews\[news\]=420&tx_ttnews\[hash\]=e810f16b69](http://www.iclei.org/index.php?id=1487&tx_ttnews[backPid]=1566&tx_ttnews[pointer]=2&tx_ttnews[news]=420&tx_ttnews[hash]=e810f16b69) [Accessed 27 August 2006]
- ISD (2006a). Analysis of the Working Group on Marine Biodiversity Beyond Areas of National Jurisdiction: 13-17 February 2006. *Earth Negotiations Bulletin*, 25(25). International Institute for Sustainable Development. <http://www.iisd.ca/download/pdf/enb2525e.pdf> [Accessed 27 September 2006]
- ISD (2006b). When will carbon dioxide capture and storage be acceptable? *Earth Negotiations Bulletin: Special Report on Selected Side Events at SB 24 International Institute for Sustainable Development*. <http://www.iisd.ca/climate/sb24/enbts/pdf/enbts1204e.pdf> [Accessed 27 August 2006]
- ISD (2006c). SB 24 Highlights: Saturday, 20 May 2006. *Earth Negotiations Bulletin*, 12(301). International Institute for Sustainable Development. <http://www.iisd.ca/download/pdf/enb12301e.pdf> [Accessed 27 August 2006]
- ISD (2006d). Report of the 12th Conference of the Parties to the UNFCCC and Second Meeting of the Parties serving as the Conference of the Parties to the Kyoto Protocol. *Earth Negotiations Bulletin*, 12(318). International Institute for Sustainable Development. <http://www.iisd.ca/download/pdf/enb12318e.pdf> [Accessed 25 November 2006]
- ISD (2006e). Summary of the Eighth Conference of the Parties to the Basel Convention: 27 November - 1 December 2006. *Earth Negotiations Bulletin*, 20(25). International Institute for Sustainable Development. <http://www.iisd.ca/vol20/enb2025e.html> [Accessed 6 December 2006]
- IMO (2006). *New international rules to allow storage of CO2 in seabed adopted*. IMO Briefing. International Maritime Organization. http://www.londonconvention.org/documents/c72/CO2_sequestration_press_release_8-11-06.doc [Accessed 1 December 2006]
- ITTO (2006a). *Most Extensive Survey Ever of World's Remaining Tropical Forests Reveals Upward Trend in "Sustainable" Management Yet 95 Percent of Tropical Forests Remain at Risk*. International Tropical Timber Organization News release, 25 May 2006. <http://www.itto.or.jp/live/PageDisplayHandler?pagelid=217&id=1262> [Accessed 23 August 2006]
- ITTO (2006b). *Status of Tropical Forest Management report launched in Council*. International Tropical Timber Organization News Release, 2 June. <http://www.itto.or.jp/live/PageDisplayHandler?pagelid=213> [Accessed 23 August 2006]
- IWC (2006). *Chair's Summary Report for the 58th Annual Meeting: St. Kitts and Nevis Declaration*. International Whaling Commission. <http://www.iwcoffice.org/documents/meetings/ChairSummaryReportWC58.pdf> [Accessed 3 December 2006]
- IUCN (2006). *The IUCN Red List of Threatened Species: Summary Statistics for Globally Threatened Species*. IUCN - the World Conservation Union. <http://www.iucnredlist.org/info/stats> [Accessed 1 December 2006]
- Kerr, R. (2006). False Alarm: Atlantic Conveyor Belt Hasn't Slowed Down After All. *Science*, 314(5802), 1064
- LaMonica, M. (2006). Smart money eyes climate change. *CNET News.com*, 10 July http://news.com.com/Smart+money+eyes+climate+change/2100-11746_3-6091772.html [Accessed 26 August 2006]
- Lash, J. (2006). *Stories to watch in 2006: Private sector leadership*. World Resources Institute: President's Letter. <http://jash.wri.org/letters.cfm?ContentID=3936> [Accessed 26 August 2006]
- Le Quéré, C. (2006). Global Carbon Budget. http://gmacweb.enr.uea.ac.uk/lequere/co2/carbon_budget.htm [Accessed 25 November 2006]
- Li, Z. (2006). China's Renewable Energy Law Takes Effect. *Renewable Energy Access*. <http://www.renewableenergyaccess.com/realnews/story?id=41932> [Accessed 27 August 2006]
- Lyman, J. M., Willis, J. K. and Johnson, G. C. (2006). Recent cooling of the upper ocean. *Geophysical Research Letters*, 33, L18604. doi:10.1029/2006GL027033
- Meinen, C. S., Baringer, M. O. and Garzoli, S. L. (2006). Variability in Deep Western Boundary Current transports. *Geophysical Research Letters*, 33, L17610. doi:10.1029/2006GL026965
- Mills, M. and Lecomte, E. (2006). *From Risk to Opportunity: How Insurers Can Proactively and Profitably Manage Climate Change*. CERES. http://www.ceres.org/pub/docs/Ceres_Insurance_Climate_Report_082206.pdf [Accessed 24 August 2006]
- Mitchell, J. (2006). *A New Era for Oil Prices*. Chatham House, London. <http://www.chathamhouse.org.uk/pdf/research/sdp/Oilprices0806.pdf> [Accessed 27 August 2006]
- NewsCorp (2006) *The asian renaissance: economic and political challenges of the 21st century*. News Corporation Ltd. http://www.newsincorp.news.news_321.htm#top
- NOAA (2006a). *October Global Temperature 4th Warmest On Record*. National Oceanic and Atmospheric Administration. <http://www.noaanews.noaa.gov/stories2006/s2741.htm> [Accessed 1 December 2006]
- NOAA (2006b). *Mauna Loa CO2 monthly mean data*. National Oceanic & Atmospheric Administration. http://www.cmdl.noaa.gov/projects/web/trends/co2_mm_mlo.dat [Accessed 1 December 2006]
- National Water Commission of Mexico (2006). *Final Report of the 4th World Water Forum*. <http://www.worldwaterforum4.org.mx/files/report/FinalReport.pdf> [Accessed 4 October 2006]
- Oceana (2006). *According to Oceana, Iceland cannot sell its whale meat, but is still hunting*. http://www.oceana.org/index.php?id=327&no_cache=1&tx_pressrelease_pi1%5Bpointer%5D=0&tx_pressrelease_pi1%5BshowUid%5D=532 [Accessed 12 November 2006]
- Oxfam 2006. *From Droughts to Floods, Ethiopians Struggle With an Array of Challenges*. http://www.oxfamamerica.org/whatedo/where_we_work/homofafrica/news_publications/feature_story.2006-10-30.0998672916/print.html [Accessed 25 November 2006]
- Pimm, S., Raven, P., Peterson, A., Sekercioglu, C. H. and Ehrlich, P. R. (2006). Human impacts on the rates of recent, present, and future bird extinctions. *PNAS*. doi: 10.1073/pnas.0604181103 [Accessed 1 December 2006]
- Point Carbon (2006). *Record-high volumes and values in global carbon market*. http://www.pointcarbon.com/getfile.php/fileelement_82898/4_August_2006_Record-high-volumes_and_values_in_H1_2006.pdf [Accessed 24 August 2006]
- Reuters/MSNBC 2006. *China sees warning behind extreme weather*. 29 August 2006. <http://www.msnbc.msn.com/id/14571193/> [Accessed 25 November 2006]
- Schliebe, S., Wiig, Ø., Derocher, A. and Lunn, N. (2006). *Ursus maritimus*. In: 2006 *IUCN Red List of Threatened Species*. IUCN - the World Conservation Union. <http://www.iucnredlist.org/search/details.php/22823/summ> [Accessed 27 December 2006]
- Schott, F. A., Fischer, J., Dengler, M., and Zantopp, R. (2006). Variability of the Deep Western Boundary Current east of the Grand Banks. *Geophysical Research Letters*, 33, L21S07. doi:10.1029/2006GL026563
- Simpson, I. J., Rowland, F. S., Meinardi, S. and Blake D. R. (2006). Influence of biomass burning during recent fluctuations in the slow growth of global tropospheric methane. *Geophysical Research Letters*, 33, L22808. doi:10.1029/2006GL027330
- Stern, N. (2006). *Stern Review: The Economics of Climate Change*. Cambridge University Press. December. http://www.hm-treasury.gov.uk/independent_reviews/stern_review_economics_climate_change/sternreview_index.cfm [Accessed 25 November 2006]
- UN (2006). *Delivering as One: Report of the Secretary-General's High-Level Panel*. United Nations. <http://www.un.org/events/panel/resources/pdfs/HLP-SWC-FinalReport.pdf> [Accessed December 4]
- UNECE (2006). *Recommendations on Payments for Ecosystem Services in Integrated Water Resources Management*. UN Economic Commission for Europe. <http://www.unece.org/env/water> [Accessed 5 December 2006]
- UNEP (2006a). *Report of the Conference of the Parties of the Stockholm Convention on Persistent Organic Pollutants on the work of its second meeting, UNEP/POPS/COP.2/30, 15 May 2006*. United Nations Environment Programme. http://www.pops.int/documents/meetings/cop_2/report/advance%20K0651526%20COP2%20reort.doc [Accessed 29 August 2006]
- UNEP (2006b). *Global Deserts Outlook*. United Nations Environment Programme. <http://www.unep.org/geo/GDO/outlook/> [Accessed 21 August 2006]
- UNEP (2006c). *GEO Year Book 2006*. United Nations Environment Programme, Nairobi
- UNEP (2006d). *Adaptation and Vulnerability to Climate Change: The Role of the Finance Sector*. United Nations Environment Programme Finance Initiative. http://www.unepfi.org/fileadmin/documents/CEO_briefing_adaptation_vulnerability_2006.pdf [Accessed 25 November 2006]
- UNEP and IUCN (2006). *Ecosystems and Biodiversity in Deep Waters and High Seas. UNEP Regional Seas Report and Studies*, No.178. United Nations Environment Programme, Nairobi

UNESCO (2006). *International Scientific Conference, Declaration on research priorities to promote sustainable development in drylands*. United Nations Educational, Scientific, and Cultural Organization, Paris http://www.unesco.org/mab/ecosyst/drylands/docs/E_Tunisdeclaration.pdf [Accessed 21 August 2006]

UNFCCC (2006a). *National greenhouse gas inventory data for the period 1990–2004*. UN Framework Convention on Climate Change. FCCG/SBI/2006/26 <http://unfccc.int/resource/docs/2006/sbi/eng/26.pdf> [Accessed 3 December 2006]

UNFCCC (2006b). *Emission reductions from Kyoto Protocol's Clean Development Mechanism pass the one billion tonnes mark*. UN Framework Convention on Climate Change http://unfccc.int/files/press/news_room/press_releases_and_advisories/application/pdf/20060608_cdm_1_billion_tonnes-english.pdf [Accessed 27 August 2006]

UNFF (2006). *Informal Newsletter by the UN Forum on Forests Secretariat. May/June 2006*. United Nations Forum on Forests, New York <http://www.un.org/esa/forests/n-mayjun06.html#art1> [Accessed 23 August 2006]

US Fish and Wildlife Service (2006). *Interior Secretary Kempthorne Announces Proposal to List Polar Bears as Threatened Under Endangered Species Act* <http://www.fws.gov/home/feature/2006/12-27-06polarbearnews.pdf> [Accessed 27 December 2006]

USTR (2006). *USTR Portman and Indonesia Trade Minister Pangestu Launch Negotiations on Landmark Illegal Logging Initiative*. Office of the United States Trade Representative Press Release, 4 April 2006 http://www.ustr.gov/Document_Library/Press_Releases/2006/April/USTR_Portman_Indonesia_Trade_Minister_Pangestu_Launch_Negotiations_on_Lmark_Illegal_Logging_Initiative.html [Accessed 23 August 2006]

Virgin Atlantic (2006). *Virgin Atlantic Chairman Sir Richard Branson Unveils Plans to Cut Carbon Emissions from Aviation by up to 25%*. Press release, 27 September <http://www.virgin.com/news/default.asp?sy=2003&ey=2006&sm=6&em=10&cid=0&nr=12&p=1&kwd=-&newsId=800&pst=-> [Accessed 6 October 2006]

Webb, T. (ed.) (2006). *Corporate Environmentalism – Stop seeing green as a burden*. Ethical Corporation. <http://www.ethicalcorp.com/content.asp?ContentID=4441> [Accessed 27 August 2006]

White House (2006). *Statement on Protection of Sustainable Fisheries*. Washington, DC. <http://www.whitehouse.gov/news/releases/2006/10/20061003-1.html> [Accessed 12 November 2006]

World Bank (2006). *Major Forest Governance Initiative Launched*. News Release No: 2007/85/SDN. 16 September <http://web.worldbank.org/WBSITE/EXTERNAL/TOPICS/EXTARD/EXTFORESTS/0,,contentMDK:21055714~menuPK:985797~pagePK:64020865~piPK:149114~theSitePK:985785,00.html> [Accessed 5 October 2006]

World Water Assessment Programme and UNESCO (2006). *Water – A shared responsibility: The United Nations World Water Development Report No 2*. United Nations Educational, Scientific and Cultural Organization (UNESCO) and Berghahn Books, Paris and New York. <http://unesdoc.unesco.org/images/0014/001454/145405E.pdf> [Accessed 21 August 2006]

Worm, B., Barbier, E.B., Beaumont, N., Duffy, J.E., Folke, C., Halpern, B.S., Jackson, J.B.C., Lotze, H.K., Micheli, F., Palumbi, S.R., Sala, E., Selkoe, K.A., Stachowicz, J.J. and Watson, R. (2006). Impacts of Biodiversity Loss on Ocean Ecosystem Services. *Science*, 314, 787–790

WWF (2006). *France announces creation of new sanctuary for whales and dolphins in the West Indies*. World Wide Fund for Nature. http://www.panda.org/about_wwf/what_we_do/species/news/ndex.cfm?uNewsID=73140 [Accessed 12 November 2006]

Calendar of selected events in 2006

PHOTIE Brandelet Dider / Still Pictures



JANUARY

1 January The United Nations launches the International Year of Deserts and Desertification to raise global public awareness of advancing deserts, which cover 41 per cent of the earth's surface.

1 January A voluntary mechanism to exchange information about registered importers of chlorofluorocarbons (CFCs) before issuing import/export licenses is piloted in countries of South and South East Asia.

4 January The Framework Convention on the Protection and Sustainable Development of the Carpathians enters into force. The convention provides key principles for cooperation on conservation, agriculture, forestry, transportation, and infrastructure among the Czech Republic, Hungary, Poland, Romania, Serbia, the Slovak Republic, and Ukraine.

11-12 January The first ministerial meeting of the Asia-Pacific Partnership on Clean Development and Climate adopts a charter document and a work plan.

8 February The Strategic Approach to International Chemicals Management is adopted at the International Conference on Chemicals Management, to ensure that chemicals are used and produced in ways that minimize adverse effects to health and the environment.

13-24 February Delegates at the sixth session of the UN Forum on Forests agree on a successor agreement to the International Agreement on Forests. There are four global objectives: to prevent forest degradation; enhance forest benefits and their contribution to international development goals; increase the area of forests; and increase official development assistance for sustainable forest management.

MARK EDWARDS / Still Pictures



MARCH

6-9 March The Africa Ministerial Conference on Hydropower and Sustainable Development commits to working together to unlock Africa's hydropower potential. Ministers recognize the need for sound environmental and social impact assessments, for investing in capacity building, and for ensuring that affected local communities derive positive sustainable benefits.

14 March The World Meteorological Organization's first annual Greenhouse Gas Bulletin reports that globally averaged concentrations of carbon dioxide (CO₂), methane (CH₄) and nitrous oxide (N₂O) in the planet's atmosphere reached their highest ever recorded levels in 2004.

H. Wroblek/UNEP / Still Pictures



26 April 20th anniversary of the world's largest ever nuclear accident, at Chernobyl in Ukraine. The effects continue to affect the lives of people in Ukraine, neighbouring Belarus and Russia, and across the northern hemisphere.

PHOTIE Brandelet Dider / Still Pictures



MAY

16 May The African Union, World Bank, FAO, and the World Wildlife Fund launch an Africa-wide partnership with the aim of restoring depleted fish stocks and reducing poverty. This partnership establishes a Sustainable Fishing Investment Fund—the first of its kind—focussing on fisheries in Africa's large marine ecosystems.

Ron Cling / Still Pictures



JULY

3 July The Millennium Development Goals Report 2006 finds that developing countries have made progress in providing access to clean water and schooling, but efforts to achieve other internationally agreed targets are falling behind schedule.

/ Still Pictures



7 July The World Conservation Union (IUCN) announces that despite improvements in conservation of most of Africa's black and white rhinoceros sub-species, the West African black rhinoceros (*Diceros bicornis longipes*) is now feared extinct mainly due to poaching for rhino horn. Wild northern white rhino (*Ceratotherium simum cottoni*) populations have reached an all time low.

15-17 July Leaders at the G8 Summit, hosted by Russia, issue a Global Energy Security Statement in which they agree that ensuring sufficient, reliable, and environmentally responsible supplies of energy at prices reflecting market fundamentals is a challenge for G8 countries and for mankind as a whole.

4 September The creation of the first international organization to reduce the negative impacts of soy production is announced at the second Conference of the Roundtable on Responsible Soy in Asunción, Paraguay. An initiative of soy producers, processors, traders, financial institutions, and non-governmental organizations, it will develop principles, criteria, and indicators for the responsible production, processing, and trade of soy.

28 September UNEP awards the 2006 Sasakawa Prize to two grassroots initiatives—Mauritania's Tenadi Cooperative Group and Rodrigo Vivas Rosas of Colombia—for their achievements in combating desertification and land degradation. The Tenadi Cooperative developed immersed borehole pumps for drinking water and reforested 80 hectares around the boreholes to stabilize dunes.

OCTOBER

By October 2006, Avian flu is found among poultry in Niger, Cameroon, Cote d'Ivoire, Burkina Faso, Egypt, and Sudan. In 2006 ten people died in Egypt, nine in Europe. The largest number of cases continues to occur in East and South East Asia, with 45 deaths in Indonesia alone. Vietnam and Thailand—first to be affected in the recent outbreak—have zero and three deaths respectively in 2006.

© PHOTIE Fremo J.P. / Lab... / Still Pictures



5 October The Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) decides to suspend exports of 60 tons of elephant ivory from Botswana, Namibia, and South Africa. Permission for the sales is conditional on the Monitoring of Illegal Killing of Elephants (MIKE) system establishing comprehensive baseline data on elephant poaching and population levels, which has not yet been achieved.

26 October The European Commission proposes legislation to ban all European Union exports of mercury beginning in 2011.

30 October The Stern Review on the Economics of Climate Change by the head of the UK's Economic service, Sir Nicholas Stern, calculates that the costs of unabated climate change range from 5-20 per cent of GDP or more while the costs of action to avoid the worst impacts of climate change can be limited to approximately one per cent of global GDP per year.

NOVEMBER

6-17 November UN Climate Change Conference in Nairobi fails to result in commitments for the post-Kyoto era that begins in 2012, or in a timetable for negotiating new targets.

10 November Environment ministers of the Association of South East Asian Nations (ASEAN) endorse a Plan of Action to implement the ASEAN Agreement on Trans-boundary Haze Pollution, signed in 2002.

9 November The High-Level Panel on UN System-wide Coherence in the Areas of Development, Humanitarian Assistance, and the Environment recommends consolidating all UN country-level programme activities, upgrading UNEP into the lead UN agency for environment with a renewed mandate and improved funding, and increasing the resources of the Global Environment Facility.

15-17 January The first World Assembly on Labour and the Environment proposes adding environmental rights such as access to water and energy to workers' traditional rights of freedom of association and collective bargaining.



Enrico Barolucci / Still Pictures

FEBRUARY

6 February The deadly H5N1 bird flu virus is detected for the first time in Africa—on a large commercial chicken farm in Nigeria.

7-9 February Environment ministers at the ninth special session of UNEP's Governing Council/Global Ministerial Environment Forum discuss issues related to energy and environment, environmental governance, and approve an agreement on international chemicals management.

20-31 March The eighth Conference of the Parties to the Convention on Biological Diversity adopts an island biodiversity work programme, reaffirms a ban on field testing of genetic use restriction technologies, and rejects case-by-case risk assessments.

27 March The world's largest Forest Stewardship Council tropical forest, totalling 570,000 ha, is certified in Guyana.

27-29 March The Third International Conference on Early Warning calls for more funds and emphasizes the importance of local communities in readiness training and the need to integrate early warning into disaster risk reduction strategies in national development frameworks.

16-22 March The fourth World Water Forum is attended by almost 20 000 participants. The adopted Ministerial Declaration calls for international action on water and sanitation issues.

APRIL

1 April The International Association of Antarctica Tour Operators reports that over 26 000 visitors travelled to the Antarctic region from November 2005 through March 2006, the austral summer period. This is a record number and a threefold increase since 1992.

20 May Final concrete is poured for the Three Gorges Dam's main wall amid controversy over costs and benefits, including environmental costs. It is the largest hydroelectric dam in the world. Designed for power generation as well as flood control, when operating at full capacity now scheduled for 2008, the project's 26 hydropower turbines are expected to produce 18.2 million kilowatts, up to one-ninth of China's electricity output.

25 May The International Tropical Timber Organization, in an analysis of the state of tropical forestry in 33 countries in Asia, the Pacific, Latin America, the Caribbean, and Africa, reports that over 90 per cent of tropical forests are not being managed sustainably.



FFREE/ENS Pool / Track / Still Pictures

JUNE

9 June- 9 July The 2006 FIFA World Cup goes carbon-neutral. Greenhouse gas emissions are cut drastically, partly by encouraging half of the estimated 3.2 million fans to take public transport. FIFA also offsets the carbon produced by financing alternative energy projects in India and South Africa.

12-16 June The first session of the Governing Body of the International Treaty on Plant Genetic Resources for Food and Agriculture adopts a standard Material Transfer Agreement, implementing the Treaty's multilateral system of access and benefit-sharing. Recipients who commercialize plant material without making it freely available for further research and breeding will pay a percentage for activities to help small farmers in developing countries.

28 July A new US federal rule takes effect protecting over 95.83 million hectares of ocean floor around Alaska from bottom trawling to help save Alaska's rare coral gardens.

AUGUST

12 August The Framework Convention for the Protection of the Marine Environment of the Caspian Sea enters into force. It will coordinate efforts by Azerbaijan, Iran, Kazakhstan, Russia, and Turkmenistan to reverse an environmental crisis of habitat destruction, industrial pollution, and over-exploitation of fish and other marine life.

28 August The Global Environment Facility (GEF) Council, led by its new CEO/Chair Monique Barbut, endorses the outcome of the long-negotiated fourth replenishment of the GEF Trust Fund at a level of US\$3.13 billion for 2006-2009 to finance environmental projects over the next four years.

30 August California, the 12th largest carbon emitter in the world, passes the first bill in the United States to cap CO₂ emissions. It aims to cut them by about 25 per cent, back to 1990 levels by 2020.

SEPTEMBER

1 September 'Project Sky-Hole Patching' is launched—a far-reaching operation to curb illegal trade in ozone-depleting substances and dangerous waste by 20 national customs administrations in Asia and the Pacific. Customs authorities will cooperate with environmental agencies to monitor suspicious shipments of ozone-depleting chemicals and dangerous commodities.

5 October A draft bylaw of the Arab Union for Wildlife Sanctuaries is ratified in Riyadh, Saudi Arabia. The Arab Union aims to provide technical support and consultation to member-countries in the establishment and management of wildlife sanctuaries.



AETE/LAFRED / Still Pictures

24 October WWF's Living Planet Report 2006 calculates that humanity's Ecological Footprint—the demand we place upon the natural world—has exceeded the Earth's sustainable capacity by about 25 per cent. Measures such as carbon sequestration and emission reductions due to energy conservation or new technologies would improve the situation.



S. Zeeb / Still Pictures

26 October – 3 November The first Meeting of Contracting Parties to the London Protocol decides to allow burial of CO₂ in natural structures under the oceans from February 2007, despite concerns over the potential for leakage that would exacerbate ocean acidification dangers.



17 November The US National Oceanic and Atmospheric Administration releases its State of the Arctic report, highlighting continued warming in the Arctic. On average, global temperatures have been steadily warming for decades but the Arctic appears to be warming twice as fast as the rest of the world.

22 November Five Central Asian countries endorse the Framework Convention on Environmental Protection for Sustainable Development to more effectively address common and transboundary environmental issues.



Peter Huth / Still Pictures

DECEMBER

13 December EU Member States approve Registration, Evaluation and Authorisation of Chemicals (REACH), the much debated law on toxic chemicals. REACH will enter force in June 2007 requiring companies to prove that new or existing substances in every-day products like cars, clothes, and paint are safe.