



Press Kit



ONE NATURE ONE WORLD OUR FUTURE
COP 9 MOP 4 Bonn Germany 2008



The Convention on Biological Diversity

The Convention on Biological Diversity

Opened for signature at the Earth Summit in Rio de Janeiro in 1992, the Convention on Biological Diversity (CBD) is the international framework for the conservation and sustainable use of biodiversity and the equitable sharing of its benefits. With 190 Parties, including the European Community, the CBD has near-universal participation among countries who have committed to preserving life on Earth. The CBD seeks to address all threats to biodiversity and ecosystem services, including threats from climate change, through scientific assessments, the development of tools, incentives and processes, the transfer of technologies and good practices and the full and active involvement of relevant stakeholders including indigenous and local communities, youth, NGOs, women and the business community.

The Cartagena Protocol on Biosafety

The Cartagena Protocol on Biosafety was adopted in January 2000 as a supplementary agreement to the Convention. Its objective is to contribute to ensuring the safe transfer, handling and use of living modified organisms resulting from modern biotechnology that may have adverse effects on biodiversity, taking also into account risks to human health. The Protocol entered into force on 11 September 2003 and to date 143 States as well as the European Community have ratified it.

The CBD Secretariat

The Secretariat of the Convention on Biological Diversity (SCBD), based in Montreal, Canada, was established to support the goals of the Convention. With some 87 staff, its primary functions are to organize meetings, prepare reports, assist member governments in the implementation of the various programmes of work, coordinate with other international organizations and collect and disseminate information.

COP MOP 4

The Conference of the Parties to the Convention on Biological Diversity serving as the meeting of the Parties to the Protocol (COP-MOP) is the governing body of the Cartagena Protocol on Biosafety. Its primary role is to keep under regular review the implementation of the Protocol and to make decisions necessary to promote its effective implementation.

The fourth meeting of the Conference of the Parties serving as the meeting of the Parties to the Protocol (COP-MOP 4) will take place in Bonn, Germany, from 12 to 16 May 2008. Building upon the achievements of the first three meetings held in February 2004 in Kuala Lumpur, Malaysia, May/June 2005 in Montreal, Canada and March 2006 in Curitiba, Brazil respectively, COP-MOP 4 is expected to arrive at decisions on a number of issues to further facilitate the implementation of the Protocol. To date the COP-MOP has held three ordinary meetings and has taken a total of 46 decisions. The meeting will address a number of standing issues on the COP-MOP agenda as well as substantive issues arising from the medium-term programme of work arising and previous decisions of the COP-MOP.

Conference of the Parties (COP)

The Conference of the Parties is the governing body of the Convention and advances implementation of the Convention through the decisions it takes at its periodic meetings. To date the Conference of the Parties has held eight ordinary meetings, and one extraordinary meeting (the latter, to adopt the Biosafety Protocol, was held in two parts). From 1994 to 1996, the Conference of the Parties held its ordinary meetings annually. Since then these meetings have been held somewhat less frequently and, following a change in the rules of procedure in 2000, will now be held every two years. To date the Conference of the Parties has taken a total of 216 procedural and substantive decisions.



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The main negotiating groups are the same as in other United Nations fora, that is five main regional groups: Asia and the Pacific, Africa, Latin America and the Caribbean (GRULAC), the Western and others Group (WEOG), which itself is subdivided in two main components (the European Union and the JUSCANZ). In addition, from time to time the developing countries speak as one voice through the "Group of 77 and China".

Other groups, cutting across regional groups, also exist and/or are created from time-to-time in connection with specific issues. For example, the "Group of Like-minded Megadiverse Countries" brings together 17 States from Africa, Asia and the Pacific and Latin America and the Caribbean in the context of the negotiation of the international regime on access and benefit-sharing. Also, the Group of Small Island Developing Countries (known as SIDS) speaks on the issue of biodiversity and climate change, as well as other issues of special interest to this group of countries. In the framework of discussions on the Cartagena Protocol on Biosafety, the "Group of Like-minded countries" has defended the interests of the main exporters of genetically modified organisms.

The **ninth meeting of the Conference of the Parties (COP 9)** will be held at the Hotel Maritim in Bonn, Germany, from 19 to 30 May 2008. More than 5,000 participants including 100 ministers, non-governmental organizations, mayors and local authorities, parliamentarians, indigenous and local communities, youth, NGOs, women, media, academia, and the business community, and members of the United Nations System are expected to attend.

The meeting, taking place two years before the end of the Johannesburg target adopted by 110 Heads of State agreed aimed at achieving by 2010, a significant reduction of the current rate of biodiversity loss at the global, regional and national level, will be critical in advancing the review of the 2010 commitments.

The Bonn meeting will be a major event in assessing the progress made for these targets including the finalization of an international regime on access and benefit sharing (ABS) as agreed in Johannesburg at the World Summit on Sustainable Development, by world leaders and the subsequent agreement in Curitiba, to finalize the negotiations on the international regime as soon as possible and no later than 2010.

The meeting will also coincide with the International for Biological Diversity, on 22 May 2008. The Conference of the Parties will be invited to hold a special plenary session to celebrate this event.

COP 9 will include a high-level ministerial segment organized by the host country in consultation with the Secretariat and the Bureau. The high-level segment takes place from 28 to 30 May 2008 at the World Conference Center Bonn. This segment has been designed to invite parties to make concrete commitments for life on Earth which will include the Federal Government of Germany's commitment entitled "Life Web Initiative."



CBD Secretariat Media Contacts

Interviews

To arrange interviews with the Executive Secretary and briefings with CBD officials, please contact:

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When requesting an interview, please indicate which media organization you represent and submit a brief list of questions to be answered.

Important Notice

To arrange for an interview with representatives of the Parties to the Convention, please refer to the list of National focal Points at: www.cbd.int/information/nfp.shtml

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Please note:

Information on media accreditation for CBD meetings is for internal use only and confidential. The CBD secretariat does not distribute media lists.

To arrange interviews with the COP 9 Presidency and briefings with COP 9 Presidency officials, please contact:

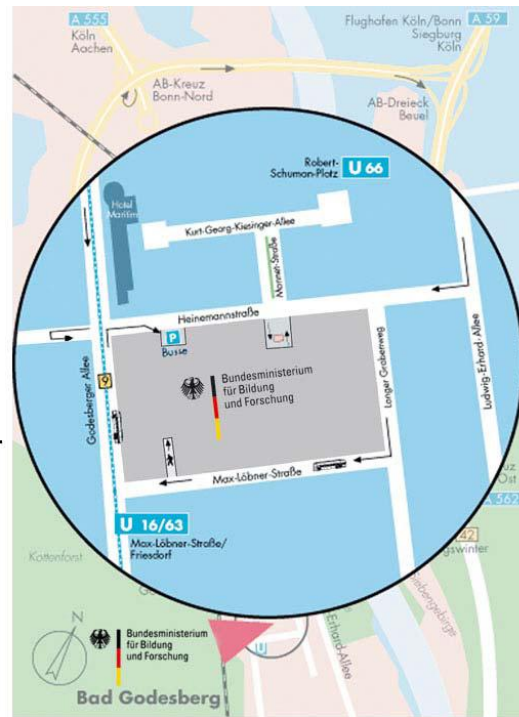
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The press center is located in the Basement of the Federal Ministry of Education and Research (short in German: BMBF), Heinemannstraße 2, D-53175 Bonn.



How to reach the BMBF in Bonn, Heinemannstraße 2



... By car

A 562 or A 59 motorway to "Bonn-Ost" interchange, continue towards Bad Godesberg, take "Bonn-Rheinaue" exit and follow signs "Zu den Bundesministerien". A 555 motorway to "Bonn-Nord" interchange, take A 565 to Siegburg/Bonn-Beuel junction, then take A 59 to Königswinter as far as "Bonn-Ost" interchange, then A 562 to Bad Godesberg as far as "Bonn-Rheinaue" exit and follow signs "Zu den Bundesministerien". A 565 motorway, take "Bonn-Poppelsdorf" exit and continue along Reuterstrasse, Adenauerallee in the direction of "Autobahn/Rheinaue" (underpass), then Franz-Josef-Strauss-Allee, then "Zu den Bundesministerien".

... By rail

At Bonn-Hauptbahnhof (main rail station) take A-Bahn 16 or 63 to Bad Godesberg as far as "Max-Löbner-Strasse/Friesdorf" (approx. 10 mins), then walk 100 metres to the BMBF pedestrian entrance on Max-Löbner-Strasse. At Bonn-Hauptbahnhof (main rail station) take A-Bahn 66 to Königswinter as far as "Robert-Schuman-Platz" (approx. 10 mins), then walk 300 metres to the BMBF





Press Centre Information

Media-Workspace Area – 198 PAX:

- w-lan in the whole press center
- 42 workspaces for print media without PC (but with electricity)
- 84 workspaces for print media with PC
- 18 Plug 'n Play workspaces with LAN
- 18 Plug' n Play Workspaces with ISDN & LAN
- 36 Plug' n Play Workspaces with Analog-line & LAN
- 2 big Network Printer
- 2 copy-card copier
- 4 Phone Boxes
- 6 Conference-TV-Monitors (CCTV)
- Infrared-headphones for CCTV

IBC (International Broadcast Center) – max. 134 PAX:

- Media Office BMU
- Media Office Secretariat of CBD : 4 Workspaces, 3 PCs, 1 Printer, 4 Telephones, 1 IDD Fax, 1 small copier, 4 Sideboards, 1 Round Meeting Table (1 Cubicle 10x3m)
- Office Bundesnetzagentur
- 3 Cubicles EBU/ WDR (host broadcaster)
- 5 Cubicles WDR
- 30 Cubicles (TV)
- 12 Cubicles with Soundproof Cabine
- 8 Soundproof-Cabin
- 1 CCTV Monitor

During the High-Level-Segment (Global Ministerial Conference, Bonn 2008; 28 – 30 of May) there will be a little Workspace for Press in the WCCB “Pumpenhaus” (Hermann-Ehlers-Straße, Entrance V) with 30 Workspaces with LAN, 2 Printers and CCTV. There also will be a Press-Office S CBD/BMU/City of Bonn with 7 Workspaces 3 PCs, 3 Printers, 2 Phones, 1 Fax.

Please note that all the cubicles are managed by the host-broadcaster WDR and given to media for temporary use on commercial basis and are equipped with monitors and signal-feeds for the use of broadcast purposes. In the event that a cubicle is used as an office is possible, additional costs may be involved.

Please contact:

Service for International TV:
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If additional equipment is needed it can be rented from Modern Times.

For press conference room bookings, please contact presscop9@cbd.int





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Convention on Biological Diversity





Access & Benefit Sharing

Whose biological diversity is it?

The Convention on Biological Diversity recognises the sovereign rights of States over their natural resources in areas within their jurisdiction. This means that countries have the authority to control physical access to their genetic resources--but they also should endeavour to create conditions to facilitate such access for environmentally sound uses. Parties also have the obligation to take appropriate measures with the aim of sharing the results of research and development and benefits derived from their commercial use. This is one of the three fundamental objectives of the Convention.

Genetic resources, whether from plant, animal or micro-organisms, may be used for a variety of purposes ranging from basic research to use in products. Users of genetic resources may include research institutes, universities and private companies operating in various sectors such as pharmaceuticals, agriculture, horticulture, cosmetics and biotechnology.

Benefits derived from genetic resources may include the results of research and development carried out on genetic resources, the transfer of technologies which make use of those resources, participation in biotechnological research activities, or monetary benefits arising from the commercialisation of products based on genetic resources.

Why it is important:

- An international regime can ensure that biodiversity-rich developing countries obtain a fair and equitable share of benefits arising out of the utilization of genetic resources originating from their territory by setting out a clear and transparent framework for access and benefit-sharing.
- The sharing of benefits, through technology transfer, research results, training and profits can contribute to poverty reduction and sustainable development in biodiversity rich developing countries.
- Access to genetic resources in exchange for fair and equitable sharing of benefits can contribute to further research and development contributing to human well-being through their use in pharmaceuticals, cosmetics, agriculture and many other sectors.
- Access to genetic resources is also essential to ensure a better understanding of the world wide web of life by encouraging taxonomic research.

What the CBD is doing:

At its fifth meeting, in 2000, the Conference of the Parties established a subsidiary body, the Ad Hoc Open-ended Working Group on Access and Benefit-sharing (ABS), with the mandate to develop guidelines and other approaches to assist Parties with the implementation of the access and benefit-sharing provisions of the Convention.



The Bonn Guidelines on Access to Genetic Resources and Fair and Equitable Sharing of the Benefits Arising out of their Utilization were adopted in 2002 to assist Parties when establishing administrative, legislative or policy measures on access and benefit-sharing and/or when negotiating contractual arrangements for access to genetic resources and benefit-sharing.

In 2004, the Conference of the Parties mandated the Ad Hoc Open-ended Working Group on Access and Benefit-sharing to elaborate and negotiate an “international regime on access to genetic resources and benefit-sharing” in order to effectively implement the relevant provisions of the Convention. In 2006, the Working Group was urged to complete the negotiation of the international regime as soon as possible and no later than 2010. At its ninth meeting, the Conference of Parties (COP 9) is expected to agree on a road map for the adoption of the international ABS regime at COP 10, in Nagoya, Japan, to be held in 2010.

For more information:

ABS: www.cbd.int/abs

COP decisions: www.cbd.int/abs/decisions.shtml

International regime www.cbd.int/abs/regime.shtml

Bonn Guidelines www.cbd.int/abs/bonn.shtml



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Climate Change & Biodiversity

The New Great Threat to Biodiversity

Climate change is defined as a variation either in the mean state of the climate or in its variability, persisting for an extended period, typically decades or longer. It encompasses temperature increases, and its impacts include sea-level rises, changes in rainfall patterns and increases in the frequency of extreme weather events. Biodiversity and climate change are closely linked, and each impacts upon the other: biodiversity is threatened by human-induced climate change, but biodiversity resources can also moderate the impacts of climate change on people and ecosystems.

According to the UN Intergovernmental Panel on Climate Change (IPCC), the average global temperature increased by about 0.76°C from 1850 to 2005, and global mean sea level rose by 12 to 22 cm during the last century. These changes affect the entire world, from low-lying islands in the tropics to the vast Polar regions. The IPCC projects a further increase in average temperatures between 1.4°C and 5.8°C by 2100. Possible impacts include: a further rise in global mean sea level and more people at risk from dangerous “vector-borne diseases,” such as malaria.

Why it is important:

- Scientific evidence indicates that climate change affects biological diversity.
- Climate change, according to the Millennium Ecosystem Assessment¹, is likely to become the dominant direct driver of biodiversity loss by the end of the century.
- Climate change is already forcing biodiversity to adapt either through shifting habitat, changing life cycles, or the development of new physical traits.
- Biodiversity plays a role in climate change adaptation and its mitigation. For example, the conservation of habitats can reduce the amount of carbon dioxide released into the atmosphere. Currently, deforestation is estimated to be responsible for 20 per cent of human-induced carbon dioxide emissions. Moreover, conserving mangroves and drought-resistant crops, for example, can reduce the disastrous impacts of climate change, such as flooding and famine.
- The poorest communities would find it most difficult to adapt to climate change and would thus be most vulnerable.

What the CBD is doing:

The impacts of climate change are of great concern to the Convention on Biological Diversity. At its fifth meeting, the Conference of the Parties (COP) highlighted the risks of climate change, in particular, to coral reefs and to forest ecosystems, and drew attention to the serious impacts of biodiversity loss on these systems and their associated livelihoods.

¹ The Millennium Ecosystem Assessment (MA) is an international work program designed to meet the needs of decision makers and the public for scientific information concerning the consequences of ecosystem change for human well-being and options for responding to those changes. Launched by United Nations' Secretary-General Kofi Annan in June 2001, it was completed in March 2005. Its findings and recommendations will help to meet assessment needs of the [Convention on Biological Diversity](#), Convention to Combat Desertification, the Ramsar Convention on Wetlands, and the Convention on Migratory Species, as well as needs of other users in the private sector and civil society.



In 2001, the Subsidiary Body on Scientific, Technical and Technological Advice (SBSTTA) established an Ad Hoc Technical Expert Group (AHTEG) to assess the interlinkages between biodiversity and climate change.

At the seventh meeting of the COP, Parties were encouraged to manage ecosystems so as to fortify their resilience to extreme climate events helping to adapt to climate change. SBSTTA was requested to provide guidance for promoting synergy among activities to address climate change, combating desertification and land degradation, and activities for the conservation and sustainable use of biodiversity by seeking collaboration with the Conference of the Parties to the United Nations Framework Convention on Climate Change (UNFCCC) and the United Nations Convention to Combat Desertification (UNCCD). Hence, in 2006, the AHTEG on biodiversity and adaptation to climate change produced a technical report providing such guidance to countries.

In 2006, at its eighth meeting, the COP highlighted the importance of integrating biodiversity considerations into all relevant national policies, programmes and plans in response to climate change, and to rapidly develop tools for the implementation of biodiversity conservation activities that contribute to climate change adaptation. The COP also noted the need to identify mutually supportive activities to be conducted by the secretariats of the three Rio Conventions (UNFCCC, UNCCD, and CBD), Parties and relevant organizations.

A number of activities have been implemented, with the generous contribution of the Government of Canada. These activities aim to provide technical and scientific guidance on the integration of biodiversity considerations within adaptation planning, the links between the conservation of forest biodiversity and climate change, including within the framework of reducing emissions from deforestation, and the links between biodiversity, water, wetlands and climate change.

For more information:

Climate change and biodiversity: <http://www.cbd.int/climate>

CBD COP decisions on climate change: <http://www.cbd.int/climate/decision.shtml>

Tools and guidelines: <http://www.cbd.int/climate/tools.shtml>

Adaptation: <http://adaptation.cbd.int>

Documents: <http://www.cbd.int/climate/documents.shtml>



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Business & Biodiversity

Involving business in the implementation of the Convention

All businesses, irrespective of their size, sector and location, ultimately depend on biodiversity. Business is referred to in the Convention text, in Conference of the Parties (COP) decisions, and in the Convention's Strategic Plan. At its eighth meeting in 2006, the COP adopted the first decision focusing exclusively on business engagement. This decision covers, in particular, the engagement of Parties with the business community when developing and implementing national biodiversity strategies and action plans; the participation of business in Convention meetings; the compilation, dissemination and strengthening of the 'business case' for biodiversity; and the compilation and development of good biodiversity practice.

Why it is important:

- Businesses possess biodiversity relevant knowledge, technical resources and managerial skills
- How companies manage biodiversity is, increasingly, seen as relevant to their bottom line performance

The importance of business was highlighted this past year by the Potsdam Initiative. Adopted in March 2007 by the Group of Eight (G8) and Brazil, China, India, Mexico and South Africa, the Potsdam Initiative included a focus on the business community and market incentives.

What the CBD is doing:

The Secretariat is currently compiling information on the 'business case' for biodiversity and examples of good biodiversity practice in different sectors, for posting on the Clearing House Mechanism.

It publishes a newsletter on business and biodiversity.

At COP 9, Parties will consider "further ways and means to promote business engagement in the implementation of the Convention, with a particular emphasis on the Convention's role in facilitating such engagement."



For more information:

Guide to Business Events at COP 9: www.cbd.int/business/COP-9.shtml

Business and biodiversity: www.cbd.int/business

COP decisions: www.cbd.int/decisions/?m=COP-08&id=11031&lg=0

Business, 2010 Newsletters: www.cbd.int/business/newsletter.shtml

Potsdam Initiative www.bmu.de/english/international_environmental_policy/g8/doc/38948.php



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Biodiversity of Dry and Sub-humid Lands

Biodiversity under Pressure

Dry and sub-humid lands, which encompass some 47% of the Earth's terrestrial area, include many fragile environments that need priority attention to avoid irreversible biodiversity loss. These lands also include areas of extraordinary endemism — species found exclusively in a certain place, such as the Mediterranean Basin, home to some 11,700 endemic plant species. To date 2,311 known species in dry and sub-humid lands are endangered or threatened with extinction due to pressures caused by habitat conversion, climate change, grazing, introduced species, changes in fire regimes, changes in water availability, over-harvesting and soil management.

The largest areas of dry and sub-humid lands, which include arid and semi-arid regions, grasslands, savannahs, and Mediterranean landscapes, are found in Australia, China, Russia, the United States and Kazakhstan. There are six countries with at least 99% of their area classified as dry and sub-humid lands: Botswana, Burkina Faso, Iraq, Kazakhstan, the Republic of Moldova and Turkmenistan.

Why it is important:

- Dry and sub-humid lands are home to around two billion people, 35% of the global population, and encompass approximately 44% of the world's cultivated systems.
- 90% of people inhabiting dry and sub-humid lands live in developing countries.
- Dry and sub-humid lands have great biological value and are the original source of many of the world's food crops and livestock, including wheat, barley and olives.
- Conservation and sustainable use of dry and sub-humid lands biodiversity is central to livelihood development and poverty alleviation.
- The biodiversity of dry and sub-humid lands is of particular significance because it includes many unique biomes. Wetland areas in drylands, for instance, are often crucial to migratory bird species as well as local species.

What the CBD is doing:

Parties to the CBD have endorsed a series of measures aimed at promoting the conservation and sustainable use of dry and sub-humid lands biodiversity. This work has been supported by a number of regional and international efforts, including the New Partnership for Africa's Development (NEPAD) environment initiative and the United Nations Development Programme (UNDP) Drylands Development Centre. The CBD is also working with the United Nations Convention to Combat Desertification as parties to both conventions have acknowledged that biodiversity loss can be both a cause and a consequence of desertification. The joint work programme seeks to address the multiple and increasing threats to dry and sub-humid lands biodiversity, including climate change.

At COP 9, Parties to the CBD will review progress in assessing the status, trends and threats to biodiversity in dry and sub-humid lands and in working with relevant partners in order to fill gaps in



information and data that will be needed to measure achievement towards the 2010 target of reversing the global decline in biodiversity.

For more information:

Dry and sub-humid lands biodiversity: <http://www.cbd.int/drylands>

CBD COP decisions on dry and sub-humid lands: <http://www.cbd.int/drylands/decisions.shtml>

Tools and guidelines: <http://www.cbd.int/drylands/tools.shtml>

Documents: <http://www.cbd.int/drylands/documents.shtml>



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Inland Waters Biodiversity

Source of food, income and livelihood

Inland waters biodiversity refers to biodiversity associated with inland water ecosystems. The diversity of this ecosystem is very complex and includes both aquatic and terrestrial influences.

Inland waters include lakes, rivers, ponds, streams, groundwater, springs, cave waters, floodplains, as well as bogs, marshes and swamps, which are traditionally grouped as inland wetlands. Inland water systems can be fresh or saline within continental and island boundaries.

The biodiversity of inland waters is an important source of food, income and livelihood, particularly in rural areas in developing countries. Other values of these ecosystems include: water supply, energy production, transport, recreation and tourism, maintenance of the hydrological balance, retention of sediments and nutrients, and provision of habitats for various fauna and flora.

Why it is important:

- Life as we know it can neither survive nor evolve without water. Water supports all life on Earth — including the entire human population, both rich and poor. It is the most important resource on the planet.
- Water is our most abundant resource, but most of it is salt water in the oceans. Of the world's total water resources, less than 3% is represented by fresh water, and less than 1% of that occurs in the Earth's liquid surface fresh water.
- The fraction of water available on Earth as fresh water supports a stunningly and disproportionately high level of biodiversity, which includes not only life living within water, but that which depends upon inland water habitat.
- Inland water biodiversity is critically important to poverty reduction and the achievement of human development targets, and provides food security for countless millions of the world's poor.
- The broader ecosystem services provided by inland water biodiversity, such as climate regulation, flood mitigation, nutrient recycling, water purification and waste treatment, are critical to human welfare and development.

What the CBD is doing:

Adopted as a CBD thematic area in 1998, the inland waters programme of work identifies actions that countries need to carry out to halt biodiversity loss, including monitoring, assessment and evaluation of biological diversity of inland water ecosystems, conducting environmental impact assessments of water development projects, development of pollution prevention strategies, choosing and using appropriate technology, and promoting transboundary cooperation, ecosystem-based management and the involvement of local and indigenous communities.

In order to achieve a more comprehensive coverage of components of biodiversity through the designation of Ramsar sites, the Conference of the Parties (COP) to the Convention on Biological Diversity (CBD) invited the Ramsar Convention's Secretariat and its Scientific and Technical Review



Panel , in collaboration with the Executive Secretary of the CBD and its Subsidiary Body on Scientific, Technical and Technological Advice (SBSTTA), to further elaborate the guidelines on existing criteria for various features, consider the development of additional criteria and to develop guidelines on the geographical scale at which criteria should be applied.

At COP 9, the Parties will consider how to address the needs for improved international cooperation on transboundary water allocation and management, the extent to which criteria for Ramsar site designation meet the requirements for coverage of elements of biodiversity under the CBD, ways and means to further improve Ramsar–CBD synergy and cooperation, and the new joint work programme between the two Conventions.

For more information:

Inland waters biodiversity: www.cbd.int/waters/about.shtml

COP decisions on inland waters biodiversity: www.cbd.int/waters/decisions.shtml

Documents: www.cbd.int/waters/documents.shtml



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Cities & Biodiversity

Threat or Opportunity for Biodiversity?

Biodiversity is being lost at an unprecedented rate, up to 1,000 times the normal rate of extinction. Cities occupy only 2.8 per cent of the Earth's surface, but urban dwellers control the use of 75 per cent of the planet's natural resources. Cities consume resources that may be thousands of miles away. This is both a threat and an opportunity for biodiversity - cities can make a difference

The fight for biodiversity will ultimately be won by working with cities. The growing urban world is one of the most dramatic changes experienced by humanity in recent history. More than half of today's world's population lives in cities, and urban population is expected to reach 70 per cent by 2030.

Why it is important:

- Cities have critical mandates in some areas essential to biodiversity:
 - land use planning by creating urban protected area networks to achieving a balance of conservation and sustainable use
 - watersheds and water use (cities can avoid expansion into critical watersheds and can work with partners to conserve ecosystems where water is sourced)
 - licensing of businesses and guidelines to businesses (cities enforce norms for sustainable consumption of biodiversity resources)
 - promoting sustainable consumption (stopping the use of illegal timber and endangered species, promoting networks of gardens, supporting reforestation, reducing use of biodiversity resources)
- Cities are very efficient partners, maximizing resources, and fostering innovative public private sector partnerships
- Local authorities are recognized as critical stakeholders for the conservation of biodiversity
- Considered an essential partner for the CBD to achieve its objectives
- Incorporating biodiversity issues into urban planning and development can be an effective way of addressing the threats of biodiversity loss.

What the CBD is doing:

Aware of the critical mandate of local authorities and particularly cities, the Secretariat of the CBD is working with networks of cities, international organizations and other UN Agencies to encourage Parties to support cities making a difference, and to provide governments at all levels with the tools and technology to allow cities to fully incorporate biodiversity issues into urban planning and development.

At the initiative of Mayor Richa of Curitiba, a meeting was held in Curitiba, Brazil, on 26-27 March 2007. Over 34 mayors or their representatives attended, and participants adopted the Curitiba Declaration on Cities and Biodiversity. The Declaration reaffirms the Mayor's commitment to contribute actively to the implementation of the three objectives of the CBD and to the achievement of the 2010 Biodiversity Target. A task force was established with the Secretariat of the CBD, ICLEI and its Local Action for Biodiversity Programme, UNEP, UN-HABITAT, IUCN's Countdown 2010, and UNESCO, as well as the mayors of Curitiba, Bonn, Nagoya, Montreal and Johannesburg.



At COP 9 Brazil will propose a draft COP decision on Cities. This is included in document UNEP/CBD/COP/9/21/Rev1 (www.cbd.int/COP9/doc/), which will be examined in Working Group I on 20 May, under agenda item 4.13.

Three events on Cities will feed into the COP discussion on the issue:

- A side event on 26 May (Reger Salon) at 1:15 PM, on Cities and Biodiversity, featuring the Minister of National Development of Singapore, and the mayors of Curitiba, Nagoya, Montreal, Bonn and Durban, on progress in the initiative since the Curitiba Declaration.
- The Mayor's Conference on Local Action for Biodiversity will take place in the Westsaal of the Ministry of Foreign Affairs, from 26-28 May, with the attendance of over 80 mayors and senior city officials. Information available at www.iclei.org/biodiv-bonn2008.
- During the high-level segment of the CBD COP, Mayors will address the session on 27 May in the morning.

Background is also provided through information document UNEP/CBD/COP/9/INF/10.

For more information:

Local authorities www.cbd.int/authorities

Documents www.cbd.int/COP9/doc



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Communication Education & Public Awareness (CEPA)

Making the Case for Biodiversity

There is no shortage of interest in biodiversity, judging from the universal popularity of zoos, aquariums, botanical gardens and nature programs on television. Yet beyond “showcase” species, there is still a yawning gap in public awareness about the huge role that biodiversity plays in providing water, food and the essentials for survival. The Convention on Biological Diversity stresses the importance of public awareness on biodiversity issues and the Convention Secretariat is mandated to help Parties explain and communicate the scientific and technical work of the Convention to many different groups, and to integrate biodiversity into the education systems in all Parties to the Convention.

Why Communication, Education and Public Awareness is important:

- Public awareness is central to building support for implementation of the Convention
- Provides tools to Parties to explain the importance of biodiversity to various audiences
- Integration of biodiversity into formal and non-formal education is key to the creation of future generations of citizens and managers.

What the CBD is doing:

The Secretariat is actively engaged in promoting understanding about biodiversity and the Convention:

- A communications toolkit has been produced in cooperation with IUCN and is available on the website of the Secretariat www.cbd.int/cepa. It has been used in workshops on National Biodiversity Strategies to show how communication tools can be used to impact on policy outcomes
- The Secretariat organizes the annual celebrations for the International Day for Biological Diversity on 22 May. Information materials related to the theme are prepared each year and distributed to Parties.
- The Secretariat issues a variety of publications including newsletters aimed at important constituencies including *Gincanino* (Youth and Children); *Pachamama* (Indigenous and Local communities), *Business 2010* (Business community) and *Biosafety Protocol News*.
- The high-level magazine *Gincana* has been published five times and has featured 20 articles by Heads of State and government, 14 ministers, 31 heads of international organizations and multilateral environment agreement, including three articles by the United Nations Secretary-General.
- A new website was launched by the CBD Secretariat to improve communications. One year after its official launch, the website has recorded 6,459,808 page views and 81,118,705 hits, a 75% increase compared to the year before. A French and Spanish version of the website was also launched.



The CBD has engaged in partnerships with IUCN's Countdown 2010 initiative; extensive cooperation with UNESCO, including integration with the Decade of Education for Sustainable Development; and promotion of the role of UNDP in a variety of communication and public awareness projects. Efforts have been made to increase synergies between the Secretariats of the CBD, UNCCD and UNFCCC on communications issues. Joint activities include a web page, messages and newsletter

For more information:

CEPA www.cbd.int/cepa

CBD COP Decisions on CEPA www.cbd.int/cepa/decisions.shtml

Global Initiative on CEPA www.cbd.int/cepa/global-initiative.shtml



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Ecosystem Approach

Managing Conservation and Sustainable Use in an Equitable Way

The ecosystem approach is a strategy for the integrated management of land, water and living resources that promotes conservation and sustainable use in an equitable way. Essentially, it is a way of looking at and managing everything together. It recognizes that humans, with their cultural diversity, are an integral component of ecosystems.

The term “ecosystem” can refer to any functioning unit at any scale and should be determined by the problem being addressed. It could, for example, be a grain of soil, a pond, a forest, a biome or the entire biosphere. According to the CBD definition: "Ecosystem' means a dynamic complex of plant, animal and micro-organism communities and their non-living environment interacting as a functional unit."

The ecosystem approach requires adaptive management to deal with the complex and dynamic nature of ecosystems and the absence of complete knowledge or understanding of their functioning. Ecosystem processes are often non-linear, and the outcome of such processes often shows time-lags. The resulting discontinuities lead to surprise and uncertainty. Management must be adaptive in order to respond to such uncertainties and contain elements of "learning-by-doing" or research feedback. There is no single way to implement the ecosystem approach, as it depends on local, provincial, national, regional or global conditions. The ecosystem approach is the primary framework for implementation of all activities under the Convention.

Why it is important:

- It provides means to assess the gains made in one area against losses which may accrue in other.
- It promotes conservation and sustainable use in an equitable way.
- The many components of biodiversity control the stores and flows of energy, water and nutrients within ecosystems and provide resistance to major disturbances.
- Benefits that flow from the array of functions given by biodiversity at the ecosystem level provide a basis of environmental security and sustainability.
- Ecosystem processes and functions are complex and variable, and their level of uncertainty is increased by the interaction with social constructs, which need to be better understood.
- It promotes the use of all available information and participatory decision-making, which seeks win-win outcomes for all stakeholders.

What the CBD is doing:

The ecosystem approach provides a framework for the elaboration and implementation of all the various thematic and cross-cutting programmes of work under the Convention. The 12 principles of the ecosystem approach were adopted at COP 5 (decision V/6), when the Executive Secretary was requested to collect, analyse, compare and disseminate relevant case-studies and lessons learned. An expert workshop was organized in 2003 in Montreal, Canada, to review the analysis of case-studies, develop proposals for the refinement of the principles and operational guidance of the ecosystem approach, and clarify the conceptual basis of the ecosystem approach in relation to the concept of sustainable forest



management. This further guidance was adopted at COP 7. Moreover, to help practitioners implement the ecosystem approach and share experiences, the Ecosystem Approach Sourcebook was created and is continuously updated <http://www.cbd.int/ecosystem/sourcebook/>. COP 9 will undertake an in-depth review of the application of the ecosystem approach to determine progress to date, what remains to be done and how best to achieve it.

For More information:

The Ecosystem Approach: <https://www.cbd.int/ecosystem>

CBD COP decisions: <https://www.cbd.int/ecosystem/decisions.shtml>

Documents: <https://www.cbd.int/ecosystem/documents.shtml>



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Financial Resources and the Financial Mechanism

Investments for Biodiversity

For the conservation and sustainable use of biological diversity to generate a broad range of environmental, economic and social benefits, substantial investments are required. Resources may come from international, regional, bilateral, national and local sources of funding, public and private alike.

The developing world, rich in biological diversity that is of high value is severely limited in domestic financial capacity – in adopting the Convention, Parties recognized that effective implementation by developing country Parties would depend on the flow of financial resources from developed countries. International financial cooperation is thus essential to accomplishing the global agenda on biological diversity.

The Global Environment Facility (GEF) has the financial mechanism assists the Convention to channel financial resources. The Conference of the Parties reviews implementation of the financial provisions at each and every meeting.

Why it is important:

- There are significant gaps in funding needs and availability for biological diversity
- Financial obstacles to achieving the Convention's objectives have been observed in virtually all countries Parties. In a recent global poll of country opinions about challenges to the implementation of the Convention, governments indicated that the overall level of financial challenges has exceeded medium level and increased toward high level
- Only a limited number of countries have allocated earmarked budgets for biodiversity, and allocations from sectoral budgets for biodiversity are only in a starting stage
- Many national environmental funds might become dormant, and only one regional network of environmental funds is active – in Latin America and the Caribbean
- Biological diversity has increasingly been integrated into sectoral policies and programmes – but rarely in the budgetary sense
- Most private sources of funding are not tapped domestically and internationally
- Bilateral development assistance and multilateral development cooperation remain to be tapped
- Innovative financing for development has not taken into account its relevance to biodiversity
- Coherence and collaboration among funding partners need to be strengthened and innovative approaches to be developed.



What the CBD is doing:

COP 9 is developing a strategy for resource mobilization in support of the achievement of the Convention's objectives as well as a political message on biodiversity and financing for development to the Follow-up International Conference on Financing for Development to be held in Doha later this year.

The third review of the effectiveness of the financial mechanism will also be conducted in Bonn. For the first time, the COP will provide a four-year outcome-oriented framework for programme priorities to guide resource programming at the GEF for its fifth replenishment.

For more information:

Financial Resources and the Financial Mechanism <http://www.cbd.int/financial>



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Forest Biodiversity

More than just Trees

More than just the trees, forest biodiversity encompasses the multitude of plants, animals and micro-organisms that inhabit forest areas and their associated genetic diversity. Forest biodiversity can be considered at many different levels, including the ecosystem, landscapes, species, populations and genetics. The more diverse a forest is — the more different species with individual genetic codes live in it — the better this forest will be able to cope with changing environments, for example, the severe impacts that scientists predict as a consequence of climate change.

The level of complexity of life in a forest is also important to maintain “forest ecosystem services” for humans. These services include the filtration and storage of potable water, the sequestration of carbon from the atmosphere, recreation, and numerous cultural, social and economic benefits that forests provide. For example, it is estimated that some 80% of people in developing countries rely on traditional medicines, and up to half of these medicinal substances originate from plants, mostly from tropical forests.

While forest biodiversity is a key factor for a healthy and intact environment, and for human well-being, it is increasingly under pressure. More than six million hectares of primary tropical forests, which are especially rich in biodiversity, are lost each year. This is an area 425 times the size of the city of Bonn and its surrounding municipalities. Up to 100 animal and plant species per day are believed to disappear together with these tropical forest habitats. With this loss of biodiversity, we also lose the genetic code that might help us to find a future cure to cancer or other diseases, and at the same time, forest ecosystems lose the genetic diversity that might enable them to adapt to a changing environment.

Much of the recent decline of forest biodiversity is caused by human activity. The conversion of forests to agricultural land, overgrazing, unmitigated shifting cultivation, unsustainable forest management, introduction of invasive alien plant and animal species, infrastructure development, mining and oil exploitation, human-induced forest fires, pollution and climate change all have taken a toll on forest biodiversity. As a result, the lowered resilience of forest ecosystems makes it more difficult for them to cope with changing environmental conditions.

Why it is important:

- Forests are one of the most biologically rich terrestrial systems. Together, tropical, temperate and boreal forests offer diverse sets of habitats for plants, animals and micro-organisms, and harbour more than two thirds of the world’s terrestrial species.
- Natural forests are one of the most important and stable stores of carbon. But emissions resulting from deforestation are estimated to contribute as much as 20% to global annual greenhouse gas emissions. At the same time, forests are essential to adaptation to climate change.
- Forests and forest biodiversity are innately linked to ecosystem and human health and well-being. For example, urban areas often depend on forested areas for their water supply. More than three quarters of the world’s accessible fresh water comes from forested catchments.



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- Estimates suggest some 13 million hectares of the world's forests are lost due to deforestation each year, 6 million hectares of which are primary forests, mostly in tropical regions. The annual net loss (i.e. after accounting for afforestation and reforestation) of forest area between 2000 and 2005 was 7.3 million hectares (equivalent to the net loss of 0.18 percent of the world's forests).

What the CBD is doing:

Forests have been on the international political agenda since the 1992 “Earth Summit,” — the United Nations Conference on Environment and Development (UNCED), held in Rio de Janeiro, Brazil. While UNCED did not agree on a proposed international instrument on forests, it is clear that forests are central to reaching the objectives of the three Rio Conventions (the Convention on Biological Diversity, the United Nations Framework Convention on Climate Change, and the United Nations Convention to Combat Desertification). An international arrangement on forests developed out of UNCED, ultimately leading to the adoption of a non-legally binding instrument on all types of forests in 2007, in the framework of the United Nations Forum on Forests (UNFF).

The CBD is addressing the loss of forest biodiversity through a comprehensive programme of work, which was adopted in 2002. This programme contains 129 actions, which are supposed to be implemented by Parties to the CBD according to their national priorities. The actions are grouped into three elements: 1. Conservation, Sustainable Use, and Access and Benefit Sharing, 2. Socio-economic framework, and 3. Knowledge, Assessment and Monitoring. Individual actions address pertinent issues such as the fragmentation of forest habitats, forest fires, invasive alien species, market failures, forest certification and the establishment of forest protected areas.

The parties to the CBD agreed to strengthen their efforts to promote forest diversity, and delegates at COP 9 will discuss and address new challenges for forest biodiversity, such as the use of genetically modified trees, or the production of biomass for energy, as well as new opportunities, such as the efforts to reduce greenhouse gas emissions from deforestation and forest degradation (REDD).

For more information:

Forest biodiversity: www.cbd.int/forest

COP decisions on forest biodiversity: www.cbd.int/forest/decisions.shtml

Tools and guidelines: www.cbd.int/forest/tools.shtml

Documents: www.cbd.int/forest/Docs.shtml





Global Strategy for Plant Conservation

Halting the Loss of Plant Diversity

Adopted in 2002, the ultimate and long-term objective of the Global Strategy for Plant Conservation (GSPC) is to halt the current and continuing loss of plant diversity. It also considers issues of sustainable use and benefit-sharing, and aims to contribute to poverty alleviation and sustainable development.

The first such strategy to be developed under the CBD, the GSPC provided a pilot exercise for the development and use of outcome targets under its Strategic Plan. Plants were chosen as the focus of this exercise because scientific understanding of this group—though incomplete and best for the higher plants—is better than for most other kinds of life, allowing for the setting of meaningful targets. The Strategy includes 16 outcome-oriented global targets set for 2010, and provides a framework to facilitate harmony between existing initiatives aimed at plant conservation, to identify gaps where new initiatives are required, and to promote mobilization of the necessary resources.

Why it is important:

- Plants are a vital part of the world's biological diversity and an essential resource for the planet.
- In addition to the small number of crop plants used for basic food and fibres, thousands of wild plants have great economic and cultural importance and potential, providing food, medicine, fuel, clothing and shelter for vast numbers of people worldwide.
- Plants play a key role in maintaining the planet's basic environmental balance and ecosystem stability, and provide an important component of the habitats for the world's animal life.
- Estimates suggest that the total number of plants in the world may be approximately 300,000 species. Many of these are in danger of extinction, threatened by habitat transformation, over-exploitation, alien invasive species, pollution and climate change.

What the CBD is doing:

To further advance implementation of the Strategy the CBD established, at its seventh meeting of the Conference of the Parties (COP 7), a **flexible coordination mechanism**, that serves to facilitate and promote implementation, and monitoring, of the Strategy at all levels (national, regional and global).

The mechanism currently comprises four elements: meetings of the liaison groups, national GSPC focal point, the Global Partnership for Plant Conservation - an initiative supported by a wide range of international and national agencies and organizations active in plant conservation and the CBD Secretariat, including the Programme Officer supported by Botanic Gardens Conservation International.



At its twelfth meeting the Subsidiary Body on Scientific, Technical and Technological Advice (SBSTTA-12) carried out an in depth review of the GSPC. Further, the meeting requested that the Executive Secretary develop, in cooperation with the Global Partnership for Plant Conservation, the UNEP World Conservation Monitoring Centre (UNEP-WCMC) and relevant organizations, and taking into account contributions from Parties, other Governments and relevant stakeholders, publish a “Plant Conservation Report” that could provide inputs to the third edition of the Global Biodiversity Outlook and serve as a communication and awareness-raising tool on the implementation of the Strategy. The Plant Conservation Report has been compiled and is available in electronic format for COP 9.

The COP will consider the Global Strategy for Plant Conservation as an issue for in-depth review.

For more information:

The Global Strategy for Plant Conservation: <https://www.cbd.int/gspc>

The Plant Conservation Report: <http://www.cbd.int/doc/reports/gspc-report-draft-en.pdf>

COP Decisions: <https://www.cbd.int/gspc/decisions.shtml>

Flexible Coordination Mechanism: <https://www.cbd.int/gspc/coordination.shtml>

Global Partnership for Plant Conservation: <http://www.plants2010.org>



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Global Taxonomy Initiative

Closing the Knowledge Gap

Taxonomists, the people involved in the science of naming, describing and classifying all living organisms, have named about 1.78 million species of animals, plants and micro-organisms during the past 250 years of research. Yet the total number of species inhabiting the globe is still unknown. Experts put the number of all living organisms at somewhere between five and 30 million.

Taxonomists use an array of measures to classify types of life, including the structure, behaviour, genetics, and biochemical observations of organisms. Taxonomy identifies and enumerates the components of biological diversity, providing basic knowledge underpinning management and implementation of the CBD. Unfortunately, taxonomic knowledge is far from complete.

Governments, through the CBD, have acknowledged that this knowledge gap is a "taxonomic impediment" to the sound management of biodiversity. As a result, they established the Global Taxonomy Initiative to remove or reduce this taxonomic impediment by addressing a global shortage of trained taxonomists and curators, and by determining how this gap in our knowledge impacts our ability to conserve, use and share the benefits of our biological diversity.

The Global Taxonomy Initiative is a set of activities that highlight issues, facilitate information exchange and promote technical cooperation in the process of implementation of the CBD programmes and issues. The GTI provides guidance to governments, taxonomists, non-governmental and international organizations, which are responsible for implementing the GTI. The Initiative outlines strategies, planned activities, expected products, timelines, lead actors and resources needed.

Why it is important:

- Taxonomy provides basic understanding about the components of biodiversity necessary for effective decision-making about conservation and sustainable use.
- Taxonomic information is essential for agencies and border authorities to detect, manage and control invasive alien species. Effective control and management measures can only be implemented when exotic species are correctly and promptly identified. Misidentifications can cost money when rapid decisions need to be made.
- If eradication is needed, taxonomists can offer expertise that is central to developing the most effective yet economic and environmentally benign eradication measures.

What the CBD is doing:

Through the Initiative and with other partners, the CBD is developing outcome-oriented deliverables to advance the work of the GTI, and a timeline for action, for consideration by countries during COP 9. The CBD will also report on progress made towards the 2010 target and on options to ensure the necessary financial support for the Initiative through the establishment of a special fund.



For more information:

GTI: <http://www.cbd.int/gti>

CBD COP decisions on GTI: <http://www.cbd.int/gti/decisions.shtml>

Documents : <http://www.cbd.int/gti/documents.shtml>



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Economics, Trade and Incentive Measures

Generating and Maintaining the Supply of Ecosystem Services

Biodiversity generates and helps maintain the supply of many ecosystem services essential for human well-being and economic development. Numerous studies have shown the considerable economic value of these goods and services. However, their value is seldom reflected in market prices. Hence for many ecosystem services, markets cannot fulfill their role to signal scarcity. Hence, consumers, firms, and government entities perceive many of those goods and services to have a price of zero, which provides strong incentives to overuse and destroy biodiversity and ecosystems in the name of economic development.

Economic valuation studies can help eliciting the 'hidden' value of biodiversity and ecosystem services, and policy measures can then be applied that seek to rectify the incentives of consumers, producers, and governments towards a more sustainable behavior. Hence, such 'incentive measures' do not rely on an outright prescription or prohibition of specific activities, but rather seek to induce changes in behavior towards sustainability. Possible measures to encourage the conservation or sustainable use of biological diversity include:

- Positive incentive measures: economic, legal or institutional measures that are designed to encourage beneficial activities. These may include incentive payments for organic farming, agricultural land set-aside schemes as well as public or grant-aided land purchases or conservation easements.
- Negative incentive measures or disincentives: mechanisms that are designed to discourage harmful or unsustainable activities. Examples of disincentives are user fees or pollution taxes.
- The creation or strengthening of markets: mechanisms and arrangements seeks to change the relative costs and benefits of specific activities in an indirect way. Trading mechanisms and other institutional arrangements create or improve markets for biological resources, thus encouraging the conservation and sustainable use of biological diversity. Examples include, inter alia, individual transferable fishing quotas and other trading schemes, biodiversity prospecting, and the commercialization of biodiversity-based products, possibly including certification and eco-labeling initiatives.
- Another important element is identifying and removing policies or practices that generate "perverse" incentives", that is, incentives that accelerate the loss of biodiversity. Examples include those public subsidies that support unsustainable farming, forestry or fishery activities.

Why it is important:

- Global benefits from coral reefs including tourism, fisheries and coastal protection are estimated at some US\$30 billion per year; insect pollination of over 40 commercial crops in the United States alone at US\$ 30 billion per year, while the market for herbal drugs amounted to US\$47 billion in 2000. These are just a few examples.
- When left alone markets fail to adequately reflect the value of biodiversity and its essential role in the supply of ecosystem services. Given the tremendous amount of economic value associated with many ecosystem services, such market failures need to be corrected, and government policies reformed or adapted accordingly.



What the CBD is doing:

The CBD's economic work aims to elicit the value of biodiversity through appropriate valuation tools and to "internalize" this value into market prices through the use of appropriate incentive measures. In fact, the Convention devotes an own Article to require Parties to adopt economically and socially sound measures that act as incentives for the conservation and sustainable use of components of biodiversity.

The COP has encouraged Parties to review existing policies to identify and promote incentives for conservation and sustainable use of biodiversity. Parties have also been encouraged to identify perverse incentives and consider the removal or mitigation of their negative effects.

To support implementation of valuation and incentive measures by Parties, COP and its subsidiary bodies have undertaken work to develop policy guidance and technical good practice manuals. A database on incentive measures is operated under the clearing house mechanism of the Convention in order to facilitate the exchange of experience among Parties, governments, and relevant organizations in the design and implementation of incentive measures.

The Convention is also cooperating closely with a number of international partner organizations to assist governments in the design and implementation of incentive measures, as well as the promotion of markets for biodiversity-based good and services produced in a sustainable manner.

The Conventions' work on incentive measures is scheduled for in-depth review at COP 9.

Addressing the interlinkages between international trade rules and the provisions of the Convention forms another important area of the economic work under the Convention. While the Convention does not require measures that are directly related to international trade, there is a close relationship between many of its provisions – as well as those of its Biosafety Protocol – and the provisions of the multilateral trade agreements of the World Trade Organization (WTO). Consequently, the Convention is following relevant negotiations under the WTO closely, and, as requested by COP, the Convention secretariat is cooperating with the WTO and its secretariat on a number of technical issues of joint interest, including in providing technical support and capacity-building to member governments.

The trade-related work of the Convention is part of a broader effort of the international community to ensure harmony and mutual supportiveness between trade rules and international environmental law, in order to both maintain biodiversity and promote international trade, for the common goal of sustainable development.

For more information on:

Economics, Trade and Incentive Measures: www.cbd.int/incentives

CBD COP Decisions: www.cbd.int/incentives/decisions.shtml

Guidelines and Tools: www.cbd.int/incentives/tools.shtml





Invasive Alien Species

Uninvited Company

Invasive alien species are species living, and often thriving, outside their natural habitat and threatening native biodiversity. Introduced by people, whether deliberately through activities such as fish farming, or unintentionally through transport, international development aid, scientific research, application of biocontrol agents or the pet trade, these species, to be considered invasive, must successfully out-compete native organisms, spread through its new environment, increase in population density and harm ecosystems in its introduced range.

Increasing travel, trade and tourism have facilitated intentional and unintentional movement of species beyond natural biogeographical barriers, where they can produce substantial environmental and economic damage. Their negative effects are exacerbated by climate change, pollution, habitat loss and human-induced disturbance. Increasingly, the domination by a few invasive species increases global homogenization of biodiversity, reducing local diversity and distinctiveness.

Why it is important:

- Invasive species are considered one of the main direct drivers of biodiversity loss globally
- These species occur in all taxonomic groups, including animals, plants, fungi and microorganisms, and can affect all types of ecosystems
- Invasive alien species can change the community structure and species composition of native ecosystems directly by out-competing indigenous species for resources
- Native ecosystems that have undergone human-induced disturbance are often more prone to alien invasions because of decreased competition from native species
- Islands are especially vulnerable to invasive species because they are naturally isolated from strong competitors and predators and often have ecological niches that have not been filled because of the distance from colonizing populations
- The economic costs of invasive alien species are significant. Total annual costs, including losses to crops, pastures and forests, as well as environmental damages and control costs, are conservatively estimated to be in the hundreds of billions of dollars and possibly more than \$1 trillion.

What the CBD is doing:

Recognizing that there is an urgent need to address the impact of invasive alien species (IAS), the Conference of the Parties (COP) to the Convention on Biological Diversity (CBD), established IAS as a cross-cutting issue at its fourth meeting. At its sixth meeting, the COP adopted Guiding Principles for the Prevention, Introduction and Mitigation of Impacts of Alien Species that Threaten Ecosystems, Habitats or Species.

The Executive Secretary of the CBD has prepared an in-depth review of the ongoing work on these species for consideration by COP 9 and has consulted with relevant international bodies and instruments on whether and how to address the lack of international standards covering the problem, in particular



animals that are not pests of plants under the International Plant Protection Convention (IPPC), and will report on the results of these consultations at COP 9.

The COP is expected to promote measures for compiling experience, good practices and the practical capacity of countries to deal with invasive species and restore ecosystems, and for raising awareness of the public sectors of the economy, and decision-makers on the impacts and causes of the problem.

For more information:

www.cbd.int/invasive

IAS: www.cbd.int/invasive/background.shtml

COP decisions: www.cbd.int/invasive/cop-decisions.shtml

Guidance and Tools: www.cbd.int/invasive/tools.shtml

Documents: www.cbd.int/invasive/documents.shtml



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Island Biodiversity

Protecting Paradise on Earth

Islands constitute unique ecosystems and are often home to many plant and animal species found nowhere else. Irreplaceable treasures, these ecosystems are key to the livelihood, economy, well-being and cultural identity of 600 million islanders—one-tenth of the world's population. The isolation of island species exerts unique evolutionary forces that result in a distinct genetic reservoir and the emergence of highly specialized species with new characteristics and unusual adaptations of great value to humanity. Population sizes tend to be limited, with species often concentrated in small confined areas.

Islands comprise up to 30% of the world's conservation hotspots—of the 724 recorded animal extinctions in the last 400 years, about half were island species. At least 90% of the bird species that have become extinct in that period were island-dwellers. Over the past century, island biodiversity has been subject to intense pressure from invasive alien species, habitat change and over-exploitation, and, increasingly, from climate change and pollution. Islands are the canary in the goldmine in terms of our capacity to manage biodiversity loss from climate change: if we succeed in adaptation and mitigation there, we will be able to do it elsewhere.

This pressure is keenly felt by island economies, heavily dependent on biodiversity through fishing, agriculture and tourism. Among the most vulnerable of the developing countries, Small Island Developing States depend on the conservation and sustainable use of island biodiversity for their sustainable development, but many developed countries manage precious island ecosystems in their overseas territories, which share many of the same challenges.

Why it is important:

- Many islanders derive much of their economic, environmental and cultural well-being directly or indirectly from the rich natural resources in their immediate environment
- Islands harbour numerous fragile ecosystems, from mountain forests to wetlands and beyond, that provide food, fresh water, wood, fibre, medicines, fuel, tools and other important raw materials
- Island ecosystems provide defence against natural disasters, support nutrient cycling, and soil and sand formation; and contribute to the regulation of climate and diseases
- Island economies are among the most vulnerable of the developing countries, considering the relative lack of economic alternatives available
- Continental shelves and coastal ecosystems of many SIDS are economically significant for settlement, subsistence and commercial agriculture, fisheries and tourism
- Coral reefs provide an estimated US\$ 375 billion per year in goods and services.

What the CBD is doing:

At its eighth meeting (Brazil, March 2006), the Conference of the Parties adopted the first-ever programme of work dedicated solely to the uniqueness and fragility of island biodiversity, with an aim to reduce significantly the rate of island biodiversity loss by 2010 and beyond as a contribution to poverty alleviation and the sustainable development of islands, particularly Small Island Developing States. The



programme of work sets out almost 50 island-specific priority actions arranged under 11 goals, which are in turn organized under seven focal areas:

1. Protect the components of biodiversity
2. Promote sustainable use
3. Address threats to biodiversity
4. Maintain goods and services from biodiversity to support human well-being
5. Protect traditional knowledge and practices
6. Ensure the fair and equitable sharing of benefits arising out of the use of genetic resources
7. Ensure provision of adequate resources

At COP 8, Parties adopted a programme to significantly reduce the rate of island biodiversity loss by 2010 and beyond. The Island Biodiversity programme will be examined in Bonn, through the Global Islands Partnership, an open platform where 20 CBD Parties and 25 international organizations challenge each other in establishing marine and terrestrial protected areas (such as the Micronesia Challenge and the Caribbean Initiative), stopping invasive alien species, promoting sustainable development and generating a database on island biodiversity.

For more information:

Island Biodiversity: www.cbd.int/island

COP decisions: www.cbd.int/island/decisions.shtml

Tools and Guidelines: www.cbd.int/island/tools.shtml



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Marine and Coastal Biodiversity

The World Oceans: Wealth of Biodiversity

Oceans cover 70% of the planet's surface area, and marine and coastal environments contain diverse habitats that support an abundance of marine life. Life in our seas produces a third of the oxygen that we breathe, offers a valuable source of protein, and moderates global climatic change.

Marine and coastal habitats range from coral reefs, mangrove forests, sea grass beds, estuaries in coastal areas, to hydrothermal vents, seamounts and soft sediments on the ocean floor a few kilometres below the surface.

Marine fish and invertebrates are among the last sources of wild food on the planet, providing over 2.6 billion people with at least 20% of their average per capita protein intake. Moreover, the world oceans host 32 of the 34 known phyla on Earth, and contain somewhere between 500,000 and 10 million marine species. Species diversity is known to be as high as 1,000 per square meter in the Indo-Pacific Ocean, and new oceanic species are continuously being discovered, particularly in the deep sea. It is therefore not surprising that the genetic resources in the oceans and coasts are of actual and potential interest for commercial uses.

Threats to the wealth of biodiversity:

- According to the Millennium Ecosystem Assessment, the world's oceans and coasts are highly threatened and subject to rapid environmental change
- Major threats on marine and coastal ecosystems include: land-based pollution and eutrophication; overfishing, destructive fishing, and illegal, unreported and unregulated (IUU) fishing; alterations of physical habitats; invasions of exotic species; and global climate change
- Overfishing is widely acknowledged as the greatest single threat to marine wildlife and habitats. The Food and Agriculture Organization of the United Nations reports that nearly 70% of the world's fish stocks are now fully fished, over-fished, or depleted
- About 20% of the world's reefs have been effectively destroyed and show no immediate prospects for recovery; about 16% of the world's reefs were seriously damaged by coral bleaching in 1998, but of these about 40% have either recovered or are recovering well; about 24% of the remaining reefs are under imminent risk of collapse through human pressures; and a further 26% are under a longer-term threat of collapse.

What the CBD is doing:

Adopted in 1998, and reviewed and updated in 2004, the programme of work on marine and coastal biodiversity focuses on integrated marine and coastal area management, marine and coastal living resources, marine and coastal protected areas, mariculture, and invasive alien species.

The road ahead for coastal areas lies in a more effective implementation of integrated marine and coastal



area management in the context of the Convention's ecosystem approach. This includes putting in place marine and coastal protected areas to promote the recovery of biodiversity and fisheries resources, and controlling land-based sources of pollution. For open-ocean and deep-sea areas, sustainability can only be achieved through increased international cooperation to protect vulnerable marine ecosystems, habitats and species.

The Conference of the Parties to the CBD has a key role in supporting the work of the United Nations General Assembly, with regard to marine protected areas beyond national jurisdiction, by focusing on provision of scientific and, as appropriate, technical information and advice relating to marine biological diversity, the application of the ecosystem approach and the precautionary approach, and in delivering the 2010 Biodiversity Target.

At COP 9, the Parties will consider options for preventing and mitigating the impacts of some activities on selected seabed habitats, and ecological criteria and biogeographic classification systems for marine areas in need of protection.

To find out more:

Marine and coastal biodiversity: www.cbd.int/marine

CBD COP decisions: www.cbd.int/marine/decisions.shtml

Guidelines and tools: www.cbd.int/marine/tools.shtml

Documents: www.cbd.int/marine/documents.shtml



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Identification, Monitoring, Indicators and Assessments

Assessing Effectiveness of Management Decisions

Addressing biodiversity loss requires in-depth knowledge about biodiversity. Thus assessments of the effectiveness of policy and management decisions – usually through adaptive management – and decision-making in accordance with national biodiversity strategies, relevant biodiversity targets and other sustainable development objectives are crucial.

Because of the complexity of biodiversity, incomplete taxonomic knowledge and high cost of biodiversity assessments and monitoring programmes, monitoring will typically rely on a small number of indicators, for which data are available.

Why it is important:

- Serve as information tools, summarizing data on complex environmental issues on the overall status and trends of biodiversity
- Can be used to assess national performance and to highlight key issues to be addressed through policy interventions and other actions
- Monitors the status and trends of biological diversity and, in turn, feeds back information on ways to continually improve the effectiveness of biodiversity management programmes
- When used to assess national or global trends, they build a bridge between the fields of policy-making and science. Policy makers set the targets and measurable objectives, scientists determine relevant variables of biodiversity, monitor its current state, and develop models to make projections of future biodiversity status.

What the CBD is doing:

The use of reliable indicators is essential to the development of measures designed to achieve the aims of the Convention. Global headline indicators for assessing progress towards the three objectives of the Convention and other key issues have been identified as part of the framework for assessing progress towards the 2010 Biodiversity Target. The Convention has also developed guidance to assist Parties in the design of national-level monitoring programmes and indicators.

At COP 9, Parties will consider the evaluation of the Millennium Ecosystem Assessment, undertaken in 2005, and the need for another integrated assessment of biodiversity and ecosystems, taking into account the future plans of the Global Biodiversity Outlook, as well as the outcomes of the current and future processes of the Global Environment Outlook of the United Nations Environment Programme, and scientific assessments that may be undertaken by the Subsidiary Body on Scientific, Technical and Technological Advice (SBSTTA).



For more information:

Identification and Monitoring: www.cbd.int/indicators

COP Decisions: www.cbd.int/indicators/decisions.shtml

Implementation: www.cbd.int/indicators/implementation.shtml



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Protected Areas

Cornerstones of Biodiversity Conservation

There are now more than 100,000 protected sites—geographically defined areas which are designated or regulated and managed to achieve specific conservation objectives—around the world that now cover about 12% of the Earth's land surface. This system of establishing protected areas forms a central element of any national strategy to conserve biodiversity, and experience shows that a well designed and managed system of protected areas can significantly boost a nation's overall efforts to protect its biodiversity, inside and outside of the protected areas. Globally, the number of protected areas has been increasing significantly over the last decade.

Why it is important:

Well designed and managed protected areas:

- Protect biological diversity, and ecological and evolutionary processes
- Prevent and reduce poverty by supporting livelihoods, providing social and cultural governance and subsistence values, and maintaining ecosystem services
- Mitigate the effects of natural disasters by acting as barriers and buffer zones for storms, floods, and drought
- Provide capacity to adapt to climate change
- Act as enormous natural carbon sinks and plays a key role in global climate regulation
- Generate tremendous direct economic benefits and serve as key assets for the tourism industry and are critical to the economies of the majority of less developed, developing and island states
- Offer space for people to enjoy recreation as well as spiritual and physical renewal
- Hold irreplaceable and immeasurable spiritual value for particular communities and faiths
- Protect the territories and rights of indigenous and local communities providing them the resources and space to continue traditional lifestyles and retain control of their destinies

What the CBD is doing:

Setting aside areas for special protection has long been used as a way to counter an unprecedented loss of biodiversity over the last century. Yet the established protected areas have not always been representative of all the biomes, species and genetic resources requiring protection, nor have they been managed effectively to protect biodiversity. For example, only 5% of the world's temperate needle-leaf forests and woodlands, 4.4% of temperate grasslands and 2.2% of lake systems are protected. Marine coverage lags far behind with only about 0.6% of the ocean's surface area and 1.4% of the coastal shelf areas protected.

To address major gaps in the system of protected areas, CBD Parties have agreed on measures to support the establishment and maintenance of ecologically representative national and regional protected areas in order to stem the increase in biodiversity loss by 2010, or by 2012 for marine areas. In Bonn, Parties will evaluate progress and elaborate recommendations for improved implementation on protected areas for the achievement of global targets.



For more information:

Protected Areas: www.cbd.int/protected

CBD COP decisions on Protected Areas: www.cbd.int/ecosystem/decisions.shtml

Documents: www.cbd.int/ecosystem/documents.shtml



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Scientific and Technical Cooperation and the Clearing-house Mechanism

Promoting and Facilitating Scientific and Technical Cooperation

Established under article 18.3 of the Convention, the Clearing-House Mechanism (CHM) is the information exchange platform of the Convention on Biological Diversity (CBD). Geared towards promoting scientific and technical cooperation, it has evolved into a global network of websites consisting of National Clearing-House Mechanisms, partner organizations and the CBD website.

The eighth meeting of the Conference of the Parties (COP 8) adopted the strategic plan of the clearing-house mechanism and its programme of work for the period 2005-2010. As defined in this strategic plan, the mission of the CHM is to contribute significantly to the implementation of the Convention through the promotion and facilitation of technical and scientific cooperation. The CHM is interested only in information that is already in the public domain or in improving the accessibility of such information.

Why it is important

- Promotes and facilitates scientific and technical cooperation
- Promotes and facilitates the exchange of information
- Builds a global network of Parties and partners.

What the CBD is doing:

The CHM designs and implements information services to support implementation of the Convention.

Major activities include:

- Maintaining the CBD website (www.cbd.int) and its related web portals
- Providing modern web-based on-line services (e.g. search engines, on-line databases, web-based collaboration tools, information exchange mechanisms, etc.)
- Providing guidance and support to Parties in the establishment and development of their National Clearing-House Mechanisms, including through capacity-building initiatives
- Liaising with Parties and partners to promote scientific and technical cooperation, the exchange of biodiversity information, and networking
- Producing off-line information products (e.g. CD-ROM) for Parties with limited Internet connectivity
- Providing modern information and communication technology services for the operations of the CBD Secretariat.



Despite significant achievements, full implementation of the strategic plan remains constrained by the limited capacity and resources available at national and global levels. The key challenge is to determine how to accelerate this implementation in an effective, mainstreamed and sustainable way. In this context, COP 9 will review proposals for enhancing the implementation of the programme of work on the CHM, including ways to:

- Strengthen the capacity of both the Parties and the Secretariat to carry out the activities of the programme of work of the CHM
- Focus first on priority activities or services that have the highest impact or added value on the achievement of the 2010 Biodiversity Target
- Position the CHM as the provider of online services that assist Parties in the implementation process.

For more information:

About the CHM: www.cbd.int/chm

COP 9 Document on the CHM (UNEP/CBD/COP/9/23): www.cbd.int/cop9/doc

COP Decisions: www.cbd.int/chm/decisions

CHM Network: www.cbd.int/chm/network



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2010 Targets

Progress in the Implementation of the Strategic Plan of the Convention and Progress towards the 2010 Target and relevant MDGs

Strategic Plan:

Recognizing the need for enhanced implementation of the Convention, the Strategic Plan was adopted in 2002 to guide implementation of the Convention. The plan includes four goals and 18 objectives, to effectively halt biodiversity loss so as to secure the continuity of its beneficial uses through the conservation and sustainable use of its components and the fair and equitable sharing of benefits arising from the use of genetic resources – the three objectives of the Convention.

The four goals of the Strategic Plan are:

- Goal 1: The Convention is fulfilling its leadership role in international biodiversity issues
- Goal 2: Parties have improved financial, human, scientific, technical, and technological capacity to implement the Convention
- Goal 3: National biodiversity strategies and action plans and the integration of biodiversity concerns into relevant sectors serve as an effective framework for the implementation of the objectives of the Convention
- Goal 4: There is a better understanding of the importance of biodiversity and of the Convention, and this has led to broader engagement across society in implementation.

What the CBD is doing:

The Conference of the Parties is conducting an in-depth review of the implementation of goals 2 and 3 of the Strategic Plan. The review focuses in particular, on the provision of financial resources, capacity-building, access to and transfer of technology and technology cooperation, and the status of national biodiversity strategies and action plans (NBSAPs) including, their implementation and updating, and the extent to which biodiversity concerns are effectively integrated into relevant sectors and have been effectively mainstreamed.

The COP is also considering the process for revising and updating the Strategic Plan with a view to adopting a revised Strategic Plan at its tenth meeting.

2010 Biodiversity Target:

The Parties to the Convention in April 2002 committed themselves to achieve by 2010, a significant reduction of the current rate of biodiversity loss at the global, regional and national level as a contribution to poverty alleviation and to the benefit of all life on Earth.



This target was subsequently endorsed by the World Summit on Sustainable Development and the United Nations General Assembly and was incorporated as a new target under the Millennium Development Goals.

The Millennium Ecosystem Assessment biodiversity synthesis prepared for the CBD concluded that unprecedented additional efforts are needed to achieve, by 2010, a significant reduction in the rate of biodiversity loss at all levels.

As most of the direct drivers of biodiversity loss are projected to either remain constant or to increase in the near future, the magnitude of the challenge of slowing the rate of biodiversity loss is enormous. Moreover, inertia in natural and human institutional systems results in time lags between actions being taken and their impact on biodiversity and ecosystems become apparent.

The second edition of the Global Biodiversity Outlook (GBO 2) suggests that the policies developed under the Convention are generally sufficient to meet the 2010 Biodiversity Target. However, much greater efforts are required to apply these policies in all relevant sectors.

What the CBD is doing:

The CBD agreed on a framework for assessing progress towards the 2010 target which includes more specific sub-targets and a suite of about 20 headline indicators. On the basis of the information available to date and analysed for GBO 2 a common message emerges: biodiversity is in decline at all levels and geographical scales, but targeted response options — whether through protected areas, or resource management and pollution prevention programmes — can reverse this trend for specific habitats or species.

Two of the response indicators used in GBO 2 show positive trends:

- Protected area coverage has doubled over the past 20 years and terrestrial protected areas now cover over 12% of the Earth's land surface
- Water quality in rivers in Europe, North America, and Latin America and the Caribbean has improved since the 1980s

COP 9 is invited to take note of the proposals for the development of the third edition of the Global Biodiversity Outlook and the process to update the Strategic Plan for the Convention, including a biodiversity target or targets beyond 2010.

For more information on:

2010 Biodiversity Targets: www.cbd.int/2010-target

Assessing progress on the Targets: www.cbd.int/2010-target/assessing

Documents : www.cbd.int/2010-target/documents.shtml

Guidelines and Tools: www.cbd.int/2010-target/guidelines.shtml

Global Biodiversity Outlook 2: www.cbd.int/gbo2





Article 8 (j): Traditional Knowledge, Innovations & Practices

Crucial to Conservation and Sustainable use of Biodiversity

Traditional knowledge refers to the knowledge, innovations and practices of indigenous and local communities around the world. Developed from experience gained over the centuries and adapted to the local culture and environment, traditional knowledge is transmitted orally from generation to generation. Collectively owned, traditional knowledge takes the form of stories, songs, folklore, proverbs, cultural values, beliefs, rituals, customary laws, local language, and animal husbandry and agricultural practices, including the development of plant species and animal breeds.

Traditional knowledge is of a practical nature, particularly in such fields as agriculture, fisheries, health, horticulture, animal husbandry, forestry and environmental management in general. Traditional knowledge is often associated with and embedded in traditional/local languages. There is a great deal of concern by the international community that humanity is losing traditional knowledge, language diversity, cultural diversity and biological diversity and studies show that all these forms of diversity seem mutually reinforcing and dependant. Why is that important? Human survival depends on humanities resilience and resilience is strengthened by diversity.

Why it is important:

- Valuable not only to those who depend on it in their daily lives, but also to modern industry and agriculture. Many widely-used products, such as plant-based medicines, health products and cosmetics, are derived from traditional knowledge. Other valuable products based on traditional knowledge include agricultural and non-wood forest products as well as handicraft.
- Can make a significant contribution to the conservation and sustainable use of biological diversity. Research has proven that indigenous and local communities living on their traditional territories can increase the local biological diversity and genetic diversity through their traditional practices.
- Can make a significant contribution to sustainable development. Most indigenous and local communities are situated in areas where the vast majority of the world's genetic resources are found, and many of them have cultivated and used biological diversity in a sustainable way for thousands of years.
- The skills and techniques used by indigenous and local communities provide valuable information to the global community and a useful model for biodiversity policies. Furthermore, as on-site communities with extensive knowledge of local environments, indigenous and local communities are most directly involved with *in-situ* conservation and sustainable use.

What the CBD is doing:

The international community recognizes the close and traditional dependence of many indigenous and local communities on biological resources. There is also broad recognition of the contribution that traditional knowledge can make to both the conservation and the sustainable use of biological diversity, two fundamental objectives of the Convention. The Conference of the Parties has established a working group specifically to address the implementation of Article 8(j) and related provisions of the Convention. Open to all Parties, indigenous and local communities' representatives play a full and active role in its



work. Traditional knowledge is considered a "cross-cutting" issue that affects many aspects of biological diversity, so it will continue to be addressed by the COP and by other working groups as well.

For more information:

Article 8(j): Traditional Knowledge, Innovations and Practices: www.cbd.int/traditional

COP decisions: www.cbd.int/traditional/decisions.shtml

Documents: www.cbd.int/cop9/doc

Pachamama Newsletter: www.cbd.int/traditional/



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Technology Transfer and Cooperation

Essential for Attaining the Convention's Objectives

Access to—and transfer of—technology among countries are essential elements for attaining the objectives of the Convention. The provisions of the CBD on technology transfer reflect the consensus of the international community, as laid down in key international policy documents such as the Rio Declaration on Environment and Development, Agenda 21, and the Johannesburg Plan of Implementation of the World Summit on Sustainable Development.

The term "technology" refers both to technical machinery and equipment ("hard" technology), and to technological information or know-how ("soft" technology). This knowledge is acquired through research and innovation, by moving ideas from invention to new products, processes and services in practical use, and through a complex and often costly process involving learning from others.

In the context of the Convention, relevant technologies include techniques for *in-situ* conservation such as integrated pest management, as well as technologies for *ex-situ* conservation such as preservation and storage technologies used in gene banks. They also include technologies related to the sustainable management of biodiversity resources, for instance, sustainable forest management or integrated water management. Many monitoring technologies, such as remote sensing, are indispensable for the generation of updated and accurate biodiversity information, which is a crucial precondition to the design and implementation of policies for the conservation of biodiversity and the sustainable use of its components.

Why it is important:

- Development, transfer, adaptation and diffusion of technology, in particular environmentally-sound technology and the environmentally-sound application of biotechnology, and the building of related capacity is crucial for achieving sustainable development.

What the CBD is doing:

In 2004, at its seventh meeting, the Conference of the Parties adopted the programme of work on Technology Transfer and Technological and Scientific Cooperation. Grouped under four programme elements, it spells out a number of strategic considerations to be taken into account in its implementation by the various actors, as well as a number of operational targets and related activities required from Parties, other governments, international organizations and the Secretariat. The purpose is to promote and facilitate the transfer of and access to technologies from developed to developing countries, including the least developed and small island developing States, as well as to countries with economies in transition, and among developing countries and other Parties, necessary to ensure implementation of the three objectives of the Convention, and in support of the target to achieve a significant reduction of the current rate of biodiversity loss at the global, regional and national level by 2010.



For more information:

Technology Transfer and Cooperation: www.cbd.int/tech-transfer/

COP decisions: www.cbd.int/tech-transfer/decisions.shtml

Documents: www.cbd.int/cop9/doc/



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Liability and Redress

Liability and Redress

The issue of liability and redress with regard to transboundary damage to biological diversity was one of the themes on the agenda during the negotiation of the Convention on Biological Diversity. Unable to reach any consensus regarding the details of a liability regime under the Convention, consideration of the issue was subsequently postponed.

The issue of liability and redress in the Convention's context raises many questions. What is damage to biological diversity? What techniques can be used to assess damage? Is it possible to restore biological diversity to its original condition after damage takes place? How do you calculate adequate compensation if the damage is irreversible and restoration impossible? Who should be responsible or liable for restoring the damage? Should there be a focus on State responsibility or State liability or both? Is a liability and redress regime under the Convention appropriate at all?

Why it is important:

- An essential mechanism for the compliance with and enforcement of environmental policies and standards established through multilateral treaties.
- Promotes compliance with international environmental norms and the implementation of both the precautionary approach and the prevention principle. Generally, the threat of incurring liability and the potential burden of redress measures acts as an incentive towards more precautionary approaches to economic activities resulting in the avoidance of environmental risk and damage.
- Serves a reparative function by shifting the costs of environmental damage from society at large to those responsible for the activity causing damage.
- Holding those responsible for environmental harm accountable for redressing it may act as a deterrent or at least lead to investment in preventive measures.

What the CBD is doing:

Article 14 of the Convention provides that: "The Conference of the Parties shall examine, on the basis of studies to be carried out, the issue of liability and redress, including restoration and compensation, for damage to biological diversity, except where such liability is a purely internal matter." The Convention's work on liability and redress is continuously progressing and Parties are collectively advancing their examination of the issue. At COP 9, the COP will review a synthesis report prepared by the Executive Secretary on defining and assessing damage to biological diversity, approaches to restoration and approaches to valuation of damage and decide on future work on this issue.

For more information:

Liability and Redress: www.cbd.int/liability/

COP decisions: www.cbd.int/liability/decisions.shtml





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Parliamentarians and Biodiversity

Essential to Integrate Biodiversity Concerns into National Legislation

Biodiversity considerations need to be put at the forefront of policy debates. Integrating biodiversity concerns into national legislation is urgent and essential to the achievement of the objectives of the Convention on Biological Diversity (CBD).

The link between parliamentarians and biodiversity is present at different levels. Nationally, parliament can review environmental bills and vote on biodiversity-related laws. Regionally, inter-parliamentary organizations, such as the Parliamentary Assembly of the Council of Europe or the Conference of Parliamentarians of the Arctic Region, also deal with environmental issues and promote cooperation between the concerned countries on these issues. Internationally, the Inter-Parliamentary Union (IPU), grouping over 140 national parliaments, is the focal point for worldwide parliamentary dialogue.

A cooperation agreement was signed between the United Nations and the IPU as early as 1996. In the UN Millennium Declaration and the 2005 World Summit Outcome, Heads of State and Government resolved to strengthen further cooperation between the UN and national parliaments through the IPU in all fields of work of the UN.

Several resolutions from the IPU concern biodiversity. During the 111th Assembly in 2004, a resolution was unanimously adopted on the role of parliaments in preserving biodiversity, supporting the commitment of the 2002 World Summit on Sustainable Development to achieve a significant reduction in the current rate of loss of biological diversity by 2010. During the 114th Assembly in 2006, another resolution was passed on the role of parliaments in environmental management and in combating global degradation of the environment. A Presidential Declaration on Climate Change was endorsed during the 116th Assembly in 2007, expressing concerns over the adverse impact of climate change and calling for progress in awareness-raising among parliaments related in particular to avoidance of deforestation, financial mechanisms, and the transfer of appropriate and environmentally sound technology. Climate change was also proposed as an emergency item during this year's 118th Assembly of the IPU.

Why it is important

- As legislators, developers and monitors of government policy and guardians of public will and conscience, parliamentarians play a crucial role in global efforts towards the protection and sustainable use of biodiversity
- As decision-makers of policies, governmental plans and budgets, parliamentarians are the main players in deciding on legislation deriving from decisions of the Conference of the Parties to the Convention. By proposing, amending and adopting laws, they can therefore translate the consensus reached internationally under the CBD into tangible actions at the national and local levels. For instance, a European Community Directive on Natural Habitat, ratified in 1992, requires member States to:
 - Take measures to maintain or restore natural habitats and wild species at a favorable conservation status
 - Establish a network of areas of conservation.





- As democracy is improving world-wide, the role and power of parliamentarians with regard to environmental issues is becoming even more important
- Parliamentarians can also strengthen the mandate of CBD National Focal Points, in their efforts to promote the implementation of the COP decisions and activities
- The areas of influence of parliamentarians can reach beyond Ministries of Environment or of International Affairs by integrating and mainstreaming biodiversity issues into national development strategies, programmes and plans, and translate them into concrete legislation, policy-making and legislative processes and into budgetary frameworks.

What the CBD is doing

In 2004, for the 111th Assembly of the Inter-Parliamentary Union, the CBD Secretariat prepared a background paper titled *Promoting the conservation and sustainable use of biodiversity: A challenge for Parliaments*. Following this paper, a resolution to call governments to take more effective action to implement the Convention was adopted by the Assembly of the IPU. In 2006, the Executive Secretary of the CBD called upon all parliamentarians to join the global effort to significantly reduce the rate of biodiversity loss by 2010: (www.cbd.int/doc/speech/2006/sp-2006-03-28-parliamentarians-en.pdf).

The Environment Committee of the German Parliament will on 27 May 2008 hold its session in Bonn instead of its usual meeting venue of Berlin at the margins of COP 9. The Executive Secretary has called on all Parties to nominate Parliamentarian delegates to participate in a meeting with the German parliamentarians on 27 May in order to further promote the role of parliamentarians in biodiversity conservation and sustainable use. The Bonn Declaration on Biodiversity and Parliamentarians, demonstrating the commitment of parliamentarians toward the achievement of the objectives of the Convention, will be released at this time.

For more information:

Parliamentarians and biodiversity: www.cbd.int/parliamentarians



Biodiversity and Biofuels

Biodiversity and Biofuels

Biofuels refer to any fuel derived from biomass, such as alcohols, biogas, fuelwood, vegetable oil and animal fats, which can be used as a substitute for fossil fuel. Ethanol is currently produced from sugar cane and maize while rapeseed and palm oil are the major feedstocks used in the production of biodiesel. To a lesser extent, soybean, peanuts, jatropha, castor bean and coconut oil are also used for the production of biodiesel and wheat, sugar beet, sweet sorghum and cassava are used for ethanol. The use of lignocellulose materials (including grasses, algae, woody plants and residues from the agriculture and forestry sectors), or so-called second generation feedstocks, are also being considered as future sources of biofuels. However these are still largely in the research stage.

Liquid biofuels for transportation, such as ethanol and biodiesel, have garnered great attention in the past couple of years as they are promoted as a means of increasing energy security, supporting domestic agricultural producers, generating income and reducing greenhouse gas emissions. As a result of this growing interest, several countries have introduced policies to promote biofuel use and production, such as requiring that traditional fuels be blended with biofuels and the establishment of production subsidies or the introduction of import tariffs.

Why it is important:

- The potential impact of biofuels on biodiversity, climate change and livelihoods as been identified an emerging issue to be addressed
- Depending on the feedstock used, where and how it is grown and the manner in which it is processed, the greenhouse gas balance, energy yields and environmental impacts of biofuels may differ greatly
- Land use change associated with the production of energy crops can affect carbon dioxide emissions either positively or negatively
- Much of the biofuels currently being produced are based on agricultural products, thus environmental concerns, such as the use of fertilizers and pesticides, water consumption and the possible invasiveness of some of the species used in biofuel production, have arisen. Concerns over increased deforestation and the drainage of wetlands for the expansion of agricultural land are also emerging
- In terms of socio-economic impacts, the demand for biofuel could potentially increase rural incomes and create employment opportunities. On the negative side, increased commodity prices resulting from the diversion of agricultural products from the food to the energy sector, as well as trade-distorting subsidies and import tariffs, can have serious consequences for developing countries with implications for agricultural production and food security.

What the CBD is doing:

The Subsidiary Body on Scientific, Technical and Technological Advice (SBSTTA) of the Convention on Biological Diversity, at its twelfth meeting, held in Paris in July 2006 considered the interlinkages between biodiversity and liquid biofuel production as a new and emerging issue related to the conservation and sustainable use of biodiversity. Following this meeting, SBSTTA requested the Executive Secretary to synthesize and submit additional information at the ninth meeting of the Conference of the Parties.





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Frequently Asked Questions Regarding COP 9

2010 TARGETS

Are we on track to hit the target or miss it, and if we miss it, by how much?

While there are numerous examples of actions which have been taken to reduce the rate of biodiversity loss, the available evidence suggests that the 2010 Biodiversity Target will not be met. At a global level biodiversity, and the ecosystem services which it underpins, continues to be lost. With the exception of the large increase in the size of terrestrial protected areas, it is unlikely that the 2010 target will be reached. More information on the 2010 Biodiversity Target and on the progress which has been made in meeting it can be found in the second edition of Global Biodiversity Outlook and the Millennium Ecosystem Assessment.

If biodiversity is so hard to measure, how can progress towards the 2010 target be measured in a meaningful way?

Biodiversity, given its complexity is hard to measure, however it is not impossible. In order to measure the progress which has been made in meeting the 2010 target the Conference of the Parties to the Convention on Biological Diversity agreed to a series of indicators which can be used to determine the general status and trends of biodiversity. These indicators measure different aspects or elements of biodiversity. When these indicators are considered as a whole they provide an illustration of the global biodiversity status. In addition there are an increasing number of national and regional studies which are being conducted as part of monitoring activities. The information from these studies and assessments further informs discussions surrounding the condition of biological diversity. More information on the indicators adopted by the Conference of the Parties can be found on the Convention's Webpage or in the second edition on Global Biodiversity Outlook.

With just two years to go, how realistic is achieving this goal?

Though great progress has been made in conserving biodiversity and in using it more sustainably, on the whole it does not appear that the 2010 Biodiversity Target will be met. However with about two years left before 2010 there is still time for additional initiatives to be taken. At the same time, it is important to look beyond 2010. Many of the actions taken now will only bear fruit in 20 or 50 years because both natural systems and societies have a certain degree of inertia. But even if we don't see the consequences of our actions and policies by 2010 we have to initiate a move towards a biodiversity-conscious society now. The year 2010, declared as the International Year of Biodiversity by the United Nations, thereby helps to mobilize the necessary actions and partnerships.



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conscious society now. The year 2010, declared as the International Year of Biodiversity by the United Nations, thereby helps to mobilize the necessary actions and partnerships.

Hopelessly over-optimistic and meaningless aren't they? For e.g. the world's population increases by 200,000 a day, with entire regions where women are denied their rights to control family size so what hope for our fellow species when one is filling every nook and cranny is filling out every sq. metre?

The 2010 Biodiversity Target is a laudable target and represents a commitment on behalf of the world community to work towards a common goal. Though reaching the 2010 Target will be a monumental task it is not meaningless as it represents one of our best opportunities for ensuring our future wellbeing. While population growth is regarded as an important indirect driver of biodiversity loss, if policies to promote sustainable development and the appropriate use of biodiversity are in place, it can be mitigated. The same is true for the other major causes of biodiversity loss. Further there is a general recognition of the need to address the underlying causes of biodiversity loss, the so-called indirect drivers of change. There is just no consensus of how to go about doing this.

Will the world reach the targets of slowing the rate of biodiversity loss?

While it does not appear that the global rate of biodiversity loss will be slowed by 2010, this does not mean that the rate of biodiversity will not be slowed in the future. Many governments and organizations, at various levels, are taking concerted actions to conserve and sustainably use biodiversity.

Will the European Union reach its tougher goal of halting the rate of biodiversity loss?

Analyses by the European Environment Agency show that the European Union will not achieve its target of halting biodiversity loss. Moreover, it is difficult to include the effects of the EU on biodiversity outside the EU.

What needs to be done to reach these targets?

The programmes of work, tools and policies developed under the Convention on Biological diversity are largely sufficient to meet the 2010 Biodiversity Target. What has been lacking is their implementation. The most realistic way of slowing the rate of biodiversity loss is for the guidance provided by the Convention on Biological Diversity to be more fully implemented and mainstreamed. Biodiversity must be considered in all sectors not merely in those related to the environment. It must be a consideration in all



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planning processes and the cost of biodiversity loss needs to be included in financial and trade considerations.

If the goals are not reached, what should be done in the longer term to avoid people giving up?

It will be important to build from the momentum which has already been created. In particular the greater and more widespread promotion of the positive actions (success stories) which have been taken to meet the 2010 target could be one method to ensure that people remain engaged.

ACCESS & BENEFIT SHARING

**Won't this just spur more product development with artificial ingredients?
Could this stifle research that may not be aimed toward commercial value?**

Response to the first two questions:

On the contrary, by providing a clear and agreed framework, an international regime on ABS would bring certainty to both providers and users of genetic resources, thus encouraging the use of genetic material and research. In the negotiation process, negotiators are taking into account the need to avoid creating obstacles to research.

How is this working out in the real world?—does it work as well as it sounds?

A publication entitled *Access and Benefit-Sharing in Practice: Trends in Partnerships across Sectors*, published as part of the CBD Technical Series No. 38, will be launched at COP 9. It explores access and benefit-sharing agreements and practices in different sectors of industry, as well as the nature of these partnerships, the characteristics and procedures common to different sectors seeking access, and sharing benefits. These include: prior informed consent; the negotiation of mutually agreed terms, including benefit-sharing, agreements/contracts employed; and compliance and legal remedies if contracts are breached. Based on a review of recent literature, the collection and analysis of ABS contracts and agreements, interviews with more than forty individuals from industry, government, NGOs, international agencies and research institutions, and specific case studies, some interesting conclusions are drawn which should usefully inform the negotiation process of the international regime on access and benefit-sharing.

This is allowed for in the CBD and totally ignored and unworkable isn't it?



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It is not allowed for in the CBD; it is a legally binding obligation under the CBD. However, it is a complex issue that covers different types of genetic resources (e.g. plant, animal, micro-organisms) used by different types of users (e.g. researchers, academia, private companies), for different purposes (e.g. basic research, commercialisation) in different sectors of industry (e.g. pharmaceutical, biotechnology, seed and crop protection, horticulture). For this reason, it is not easy to apply. Increasingly, efforts are being made to increase awareness of access and benefit-sharing among users of genetic resources and various associations of users have developed guidelines and/or codes of conducts to inform their constituency about the realities of access and benefit-sharing and to encourage them to follow access and benefit-sharing requirements.

AGRICULTURAL BIODIVERSITY

How can poor farmers access the rich crop diversity in gene banks?

Through the assistance of international, national and non-governmental organisations that can help facilitate access, with adequate and appropriate funding support. We should recognise also that “poor” farmers in many cases are also custodians of rich crop diversity through maintenance of these resources on their farms and collective community conservation programmes.

How much agricultural biodiversity do we need in order to maintain a predictable food supply?

This is difficult to quantify. What we know is that biodiversity is required in order to sustain agriculture (= make food supplies predictable). “Predictable food supply” is more complex than just supplying on a stable basis the basic calories, fat and protein needed. The CBD Initiative on Biodiversity for Food and Nutrition aims to improve not only food supply but the dietary importance of a diverse diet to nutrition. In addition, diverse agriculture contributes to diverse and more stable (sustainable) economies – economies which involve a large number of people – this is particularly important in developing countries where agriculture can contribute to lifting people out of poverty.

Can we feed everyone in the world and still pay attention to biodiversity?

We cannot feed the world without paying attention to biodiversity. Food production depends on biodiversity. It is not one or the other.



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Can the promotion of biodiversity in agriculture realistically be integrated into large-scale farming?

Absolutely, and in many areas it already is. For example, in Europe much agriculture is large-scale, and many farmers are now incorporating biodiversity considerations into their practices (for example, planting hedgerows to provide wildlife habitat, instead of wire fences); large-scale agriculture can reduce the use of pesticides and the over-use of fertilisers and water – and without reducing production. The scale of agriculture does not preclude any attention to biodiversity.

Isn't it better to have pest and drought resistant crops?

Yes, and this is already being done. Drought resistance will become increasingly important as the climate changes.

Is there any more land that can be used for agriculture than is in use now?

The situation varies by region. In some developed countries or regions agricultural area is declining because agriculture tends to be mainly intensive, efficient, and food demands are decreasing with decreasing (or stabilising) population growth. Other areas potentially have more land – but it involves converting the land from other uses. Many countries/regions have limited opportunities to expand agricultural areas (in particular the more densely populated developing countries with high population growth). Globally – there is limited space for expansion. And biofuels is changing the picture – as it competes for land with food production. The issue really is the efficiency to which the land is put. Rather than expand inefficient agriculture it is better to make more efficient use of the land already under cultivation. Land is also not the only problem. In very many areas the constraint to increasing agricultural production is not land availability but water availability.

The most diverse range of crops is grown in sub-Saharan Africa and yet it is the one place where food production has not kept up with population growth...surely it is production based on a few high yielding GM crops that we need not more fashionable green lobby diversity?

It is not one approach or the other. Problems with the supply of food and the demand for it in Africa, or anywhere, are not limited to the nature of the crop grown. Many factors are involved including especially economic and cultural factors. For example, access to markets, infrastructure, food preferences, and the ability to purchase food. High yielding crops (whether GM or not) have their role under the right circumstances. But high yielding crops are not necessarily the most socio-economically appropriate even if they



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promise higher yields. For example, they often require more investment, more fertiliser and pest control – resources unavailable to small scale farmers. They also reduce farming diversity – which can increase yields, but increases vulnerability to factors outside the control of farmers (e.g., commodity prices, marketing constraints). High yield crops can be risky – and poor people should avoid further risk. Overall, we need both – increased yields and more diversity.

Are biofuels putting pressure for more land use alongside crops - extending farmland at the expense of forests or scrub land, squeezing out less high-yield varieties?

Overall – yes. In cases where biofuels displace food crops on existing land, the loss in food production, even if not felt locally, needs to be compensated by extra production elsewhere. Agricultural production and food commodities are globalised through trade. What happens with biofuels and food in one country has impacts on what happens in other countries.

How is climate change spreading crop ranges towards the poles, affecting their diversity?

As the climate changes, areas suitable for growing particular crops change. This is already happening. The nature of the impact depends on the requirements of the crop. In some cases the cultivation will shift into areas previously too cold. In other cases it will shift away from areas becoming too warm. And this is not limited to polar shifts – it is occurring more noticeably with altitude (as higher sections of mountains become warmer). As agriculture moves into or out of regions – their biodiversity will be affected. But moving the farming is not always possible, nor desirable. A better response is to stay in the same place and grow varieties more appropriate to the changing conditions. And to develop those varieties we need to maintain and use the existing diversity. But the impacts of climate change on agriculture do not relate just to temperature increases. Some would argue that is a minor consideration. An important factor is that as temperature changes the water cycle changes – and changes in rainfall patterns are likely to have a greater impact on farming than whether the temperature itself increases.

What are the threats from genetically modified varieties? How do you ensure that these do not out-compete native varieties?

The threats can operate at the biological level (e.g., hybridisation with wild plants); at the economic level (GM crops can out-compete small-scale farmers resulting in lost livelihoods) and cultural levels (e.g., dependence on GM crops can result in the erosion



of the local knowledge of local communities and together with it their current contribution to biodiversity conservation); and at the ethical level (e.g., loss of rights of local communities to preserve their culture and knowledge). On the other hand, under appropriate circumstances, GM crops can offer potential benefits. The way in which to ensure that desired outcomes result from the use of GM crops is to take a precautionary approach and to have transparent impact assessments, policies and strategies that consider all the potential outcomes based on the best possible and impartial advice and decision making processes which involve the full and effective participation of all of those potentially affected.

How can you protect agricultural biodiversity -- what is the role of seed banks such as a newly opened "doomsday" seed vault in the Norwegian Arctic

The best way to protect agricultural biodiversity is to make the best and most effective use of it. Farmers play a critical role and must be encouraged to continue and expand biodiversity conservation. When necessary and appropriate, farmers should have appropriate incentives to farm in more biodiversity friendly ways. Certainly, most agree that preserving biodiversity within agricultural systems (*in situ*) is the preferred and more sustainable course of action. Seed banks play an important role. They are multi-functional. They are, for example, an insurance policy against the loss of varieties within farming systems or global catastrophe. They also serve as a means to share diversity, and as libraries of information and sources of genes for the common global good. When the world's greatest literary minds write books – we put them in libraries to both conserve and share, for the common good. It is the same for seeds.

BIODIVERSITY OF INLAND WATERS

Is it true to say that the invasion of alien species is the greatest global threat to inland waters diversity?

No. Globally the main threats are habitat loss and degradation (including drainage and conversion of wetlands, loss of wetlands through over use of water, pollution, excessive loading of nutrients and sedimentation/soil erosion from poor land use practice). Invasive alien species are certainly an important threat. But the threats and their impacts vary from location to location. They also work in combination. For example, some species tend to be more invasive when inland water ecosystems become degraded through other means.

How do you protect lakes and rivers from increasing pollution in many nations?



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By improving land use practices and reducing pollution in all relevant regions within the river or lake basin. Where more than one country shares the basin – international cooperation is required in order to manage the problem. Article 5 of the CBD refers to the need for international cooperation amongst relevant Parties on matters of mutual interest. This needs to be operationalised for specific issues through additional management and regulatory frameworks. Such cooperation usually comprises river basin or watercourse cooperative agreements backed up with adequate infrastructure for monitoring, information sharing and dialogue.

What are the success stories around the world for cleaning up?

There are many – enough to be optimistic but not enough to start reversing global trends. There is a serious shift towards the rehabilitation of inland water ecosystems. Water quality was one of the first areas where progress was made. For example, many rivers in Europe during the industrial revolution were effectively biologically dead but the water quality now is much improved. The Thames River in London is a case in point. Salmon began to return to it only in the last two or three decades. Attention is now also shifting towards restoring river and lake habitats – including river floodplains. In developed countries this has largely been driven by public pressures for a cleaner environment, and the enormous economic value of recreational services provided by inland waters. But in some developing countries the same is happening – but is, importantly, motivated by the desire to sustain livelihoods and the more direct economic benefits of inland waters. Small successes can be found in many regions – often led by local communities. On the larger scale, India, for example, has invested heavily in cleaning up the Ganges River. Considering the constraints to doing so the progress made is welcome. Overall, however, the continuing rate of decline of systems is outstripping improvements in others.

Is a canal from the Red Sea to fill up the shrinking Dead Sea a good idea?

This depends whose idea it is and what is meant by “good”. The people that depend upon the Dead Sea, and those impacted by the canal, should decide. To do this they need to be well informed and there needs to be a transparent and participatory decision/policy making process. There are options – the most logical one is to mitigate those factors that contribute to the shrinking, and this could well be cheaper than building and managing a canal. If a canal were to be built, the ecology of the Dead Sea would be different from its original state. Do the people around the Dead Sea want it to be restored to its original state – or simply filled up again? You need to ask them. But the provisions of the CBD would favour the former approach.



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Are hydroelectric dams overall a good thing (renewable energy, no carbon emissions etc) or bad because of the way they can disrupt rivers, flood plains where people live?

Both. Energy produced by hydropower, case-by-case, is not “no carbon emissions”. There is growing evidence that many, if not most, emit significant carbon dioxide and other greenhouse gases through the destruction and decomposition of vegetation in the reservoir, and by degrading wetlands downstream (and degraded wetlands can emit large amounts of greenhouse gases). If badly planned, sited and managed, they can also disrupt rivers, floodplains, fish migrations and people etc. They also have a limited lifespan and large ones are a problem to decommission because the reservoirs tend to fill up with silt. But all energy generation has its drawbacks. It is a matter of balancing development and energy supplies. Hydropower has a role to play if properly considered, planned and managed. But all too often hydropower planning schemes do not consider the full range of impacts and in particular on the services provided by rivers which currently have no market values.

BIODIVERSITY & CLIMATE CHANGE

How will climate change affect biodiversity - is it all bad news or will some species gain (and bring benefits to people)?

Since the mid-1800s global temperatures have increased by about 0.6°C¹, impacting the entire world, from low-lying islands in the tropics to the vast Polar Regions. This rapid climate change is having an impact on species and ecosystems including the provision of ecosystem services on which we all rely.

Some species are being negatively impacted by climate change while others, such as warm water fish are actually seeing an expansion in their range. Species which seem to be benefiting most from climate change include pests and invasive plants which are better able to rapidly adapt to changes.

How can people use biodiversity to address climate change (e.g. in adaptation through crop varieties)?

Mobilizing resources such as land races of common crops, mangroves, riparian wetlands and resilient species can enhance results, improve cost-effectiveness and ensure the sustainability of adaptation investments. For example, the conservation or restoration of

¹ Temperature data is provided by IPCC



river floodplains can be an important response to increasing flooding events, or droughts. Not only can it be more cost effective than traditional engineering responses but also provides substantial benefits in terms of fisheries, increased resilience and an improved aesthetic and cultural environment.

In Malaysia, for example, the value of mangroves for coastal protection is estimated at \$300,000 per kilometers of coast based on the cost of installing artificial coastal protection. Following the degradation of the reef around the Male in the Maldives, the cost of installing artificial breakwaters was US\$10 million per kilometer.

Biodiversity-based adaptation can also contribute to enhanced food security including in Africa, where the demand for food is expected to reach \$100 billion by 2015, double its level of 2000. At the same time, climate change is expected to lead to changing precipitation regimes which will increase water stress in sub-tropical regions including Southern Africa which is projected to lose 30% of its maize crop by 2030. Adaptation linked to agricultural biodiversity, such as changing varieties and agro-forestry, can avoid 10-15% of the projected reductions in yield under changing climatic conditions.

What effects on biodiversity are we seeing already from climate change?

Climate change is already forcing biodiversity to adapt either through shifting habitat, changing life cycles, or the development of new physical traits. Impacts already observed include:

- The Common Murre has advanced breeding by 24 days per decade over the past 50 years in response to higher temperatures
- The Baltimore Oriole is shifting northward and may soon disappear entirely from the Baltimore area
- The average weight of female Polar Bears in Canada has decreased by 20% over the last 25 years
- An increase in the number of female Sea Turtle hatchlings when compared to males as a result of higher nest temperatures.

Projections of further impacts include:

- In sub-Saharan Africa between 25 and 40% of mammals in national parks will become endangered while as many as 2% of the species currently classified as critically endangered will become extinct
- In the Succulent Karoo and Fynbos ecosystems in Southern Africa more than 50% of habitat is expected to be lost by 2050



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- In the Amazon Basin, 30 of 69 tree plant species studied could face extinction.
 - Mangroves in marginal and exposed areas are expected to decline in Brazil, Ecuador, Colombia, Guyana, El Salvador and Venezuela
 - In Asia, up to 50% of biodiversity is at risk while as many as 88% of reefs may be lost over the next 30 years
 - As many as 1522 plant species in China and 2835 plants in Indo-Burma could become extinct
 - If sea level rises 10 millimetres a year, mangroves could disappear from Antigua and Barbuda as early as 2030.

Some species may go extinct. But will others find a way to adapt?

Many species, if given the opportunity, will adapt to climate change. Mangroves, for example, will move inland in response to climate change and sea level rise as long as their route isn't blocked by settlements, infrastructure or other non-compatible land uses.

In fact, one of the key concerns for species when consider adaptation is that other pressures, such as habitat fragmentation, over-use or pollution will limit the natural ability of species to adapt to climate change.

Will tropical species be able to take root in warmer temperate zones?

Some species will be able to shift poleward or upward in elevation as temperatures increase. For examples, many species of butterflies are already moving north in Europe.

It is important to remember, however, that temperature is only one parameter associated with habitat suitability. If soils are different in temperate zones, plants may not find the nutrients they need. Likewise if precipitation regimes change species may find that they cannot access enough water or are out-competed by other species that are better adapted to wetter climates.

Things grow better in greenhouses don't they...surely there will be winners and losers, and at the end of the day the more acclimatized plants and animals will win out – wasn't this what Darwin was all about?

Darwin's theory of evolution did indeed focus on competition and adaptation however, it is important to note that he was studying natural cycles and natural pressures. The evidence is now clear that climate change is being caused by human activities and that it is causing changes in climatic conditions at a rate much faster than anything previously recorded or studied.



Has climate change become the biggest threat to species -- ahead of pollution, rising human populations, etc?

The Millennium Ecosystem Assessment and reports by WWF reveal that climate change is likely to become the second largest threat to biodiversity. However it is important to note that while the impacts of some threats are stabilising or even decreasing, the impacts of climate change will continue to increase for at least the next 50 years.

How can you help animals and plants to move if the climate shifts? Perhaps by setting up corridors for migrations?

Given the importance of climate change -biodiversity links, it is important to:

- i. Identify and conserve that biodiversity which is especially sensitive to climate change
- ii. Preserve intact habitats so as to facilitate the long-term adaptation of biodiversity
- iii. Improve our understanding of climate change – biodiversity linkages
- iv. Fully integrate biodiversity considerations into climate change mitigation and adaptation plans.

Some activities to promote adaptation include the establishment of protected areas and connecting corridors, the alleviation of other anthropogenic threats to species, the application of the ecosystem approach to decision-making and, in extreme cases, *ex situ* (off site) conservation of species.

The ecosystem approach is a strategy for the integrated management of land, water and living resources that promotes the conservation and sustainable use of biodiversity in a fair and equitable manner. The main principles of the ecosystem approach focus on capacity-building; participation; information gathering and dissemination; research; monitoring and evaluation; and governance. Since the ecosystem approach takes a broad perspective to management, it is an ideal methodology through which the multiple impacts from climate change, including on biodiversity, can be reflected in comprehensive and responsive adaptation planning.

What happens in places such as the southern tip of Africa or the northern tip of Europe where species cannot move further south or north?

Species that are unable to move will likely go extinct as climatic conditions change beyond their ability to adapt.



How many species have gone extinct because of climate change -- the Costa Rican golden toad is one often quoted example?

Predictions estimate that up to one million species may become extinct as a result of climate change including vulnerable species such as Boyd's forest dragon in Australia and Brazil's *Virola sebifera* tree.

The recently extinct Golden Toad and Gastric Brooding Frog have already been labeled as the first victims of climate change however the impacts of climate change on species are complex and difficult to predict. As such there is still a lot of debate regarding climate change and extinctions. The polar bear, for example, was recently added to the threatened species list in Canada because of threats from climate change however debates are still ongoing in other countries which include polar bear habitat as to whether climate change is likely to lead to the extinction of this emblematic species.

The UN Climate Panel says that up to 30% of species will be at increasing risk of extinctions if temperatures rise more than 1C from now – which are most at risk?

Species and ecosystems which have been identified as being particularly vulnerable to the impacts of climate change include:

- Agricultural systems already at the limit of their heat and drought tolerance, agricultural areas within low latitudes, rangelands, agricultural biodiversity in dry and sub-humid lands
- Prairies, wetlands in drylands, remnant grasslands,² Mediterranean forests, desert margins, *Fynbos*
- Mangroves, boreal forests, tropical forests, cloud forests
- Peatlands, oases, prairie wetlands, high-latitude and high-altitude inland water ecosystems (such as Arctic and sub-Arctic ombrotrophic ³/ bog communities, and alpine streams and lakes)
- Low-lying islands, polar islands, small-island developing States
- Mangroves and other coastal wetlands, polar seas, seagrass beds, coral-reef systems
- High-alpine ecosystems, ⁴/ cloud forests, remnant native montane grasslands

²/ WWF. *Buying Time: A User's Manual for Building Resistance and Resilience to Climate Change in Natural Systems*. 2003.

³/ A condition in which a wetland is hydrologically independent of surface water or ground water and is almost exclusively supplied with water from precipitation.



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- Protected areas of any of the above regions, sub-regions or ecosystems, small or isolated protected areas, protected areas with high- or low-altitude environments, coastal environments or interior wetlands, protected areas with abrupt land use transitions outside their boundaries, protected areas without usable connecting migration corridors
 - Arctic regions, small-island developing States, high-altitude communities, coastal zones and dry and sub-humid areas.

BUSINESS & BIODIVERSITY

Isn't the problem essentially that there are no sound business reasons for investing in diversity... by this I mean payback in terms of paying shareholders and boosting profits... over months not years...

No. The issue is more that the 'business case' is not always well articulated, and not that there is no business case per se.

Ultimately all companies, in all sectors, irrespective of where they lie in the supply chain, depend on biodiversity.

In some sectors – for example those directly dependent on biodiversity and ecosystem services such as the fisheries sector, agriculture, etc. – the business case is rather straightforward. Hence when marine ecosystems collapse, the fishing community loses its livelihood. By extension, retailers have an obvious interest in ensuring that the fish that they are selling is from sustainable sources.

If a supermarket sells unsustainably sourced products, it is at risk of having to find alternative suppliers when the supply runs dry. In a highly competitive market such as retailing these additional costs are unwelcome. This explains why several retailers across the globe are looking into the sustainability of their supply chains, and providing additional information to their consumers, understanding that this is not (solely) a 'biodiversity' issue but a strategic business issue.

In the extractive sectors, there are also sound business reasons for integrating biodiversity in decision making. Indeed, there are well known examples of companies which have

^{4/} Halloy SRP, Mark AF 2003. Climate-change effects on alpine plant biodiversity: A New Zealand perspective on quantifying the threat. *Arctic, Antarctic and Alpine Research* 35, 248-254.



seen their projects delayed because of conflicts with regulators, stakeholders, or investors over biodiversity issues. In the case of multi-billion oil and gas projects, for instance, this is a very unwelcome outcome, with very tangible implications in terms of PR and finances.

One can find many reasons – tangible, strategic, business reasons – for including biodiversity into business decision-making. Crucially, this ‘business case’ will depend from sector to sector and, indeed, from company to company.

In a nutshell, biodiversity creates business risks and opportunities that need to be managed.

A number of initiatives are currently underway to help companies better determine their dependence on ecosystem services and to manage this. These are regularly featured in the Secretariat’s business newsletter.

Many organizations have been developing the business case for their sector. In the financial services sector, for instance, UNEP Finance Initiative, with its members in the banking sector, recently published a briefing explaining the business case for biodiversity for financial institutions.

The need to better articulate the business case was highlighted in 2006 when Parties to the Convention adopted the first decision to focus on business. In response, the Secretariat has compiled documents explaining the business case in different sectors.

Of course, more needs to be done. Many actors – including business journalists, business schools, and business associations can help ‘translate’ into a language that better resonates with the business community about what seems, on the surface, as simply an environmental issue.

How can companies be enlisted in protecting biodiversity?

There are many ways to encourage companies to include biodiversity into decision making.

In some sectors, a lot of pressure has come, historically, from activist NGOs. Faced with bad publicity, many companies have typically changed their policies and practices.



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Pressure can also come from individual and institutional investors and from consumers – the end consumer can remain informed and vote with her/his feet.

Conversely, several technical and financial vehicles have also been established around the world to help identify ‘biodiversity business’ – companies that have a positive ‘return’ from a financial and biodiversity perspective. IUCN has, for instance, recently released a report examining these vehicles.

Business associations can also send a clear signal regarding the importance of biodiversity. The World Business Council for Sustainable Development (WBCSD), for instance, recently elevated its work on ecosystem services as one of four ‘focus areas’.

Governments also have a key role to play, including in establishing policies which provide incentives for companies to take biodiversity into account. The last COP, for instance, encouraged governments to engage with business when developing and implementing National Biodiversity Strategies and Action Plans.

A very obvious way to see how business can be enlisted is also to look at the efforts of the Host Government, Germany, in mobilizing the business community for COP 9. The German Business and Biodiversity Initiative has, amongst other things, managed to bring new business players to the ‘conservation table’. This initiative will be profiled in various ways during the COP.

More generally, business will be an important focus of the COP – either as part of the formal agenda, or during informal events and fora. For easy reference, the Secretariat has compiled a list of business-related events at COP 9 available at www.cbd.int/cop9/business/

Can companies help by "bioprospecting", or do all of the benefits go back to corporate headquarters with none left for local peoples?

There are many examples of good practice related to Access and Benefit-sharing.

At COP, the Secretariat will launch a publication examining Access and Benefit-sharing in practice across a range of sectors.

**What companies are helping protect biodiversity and which ones are damaging it?
How can you reward those with good practices?**



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The Secretariat does not assess the performance of individual companies.

A number of initiatives are underway to assess the biodiversity performance of companies in a range of sectors. In 2004 and 2006, for instance, Insight Investment (a UK based asset manager) and Fauna and Flora International (FFI) released a biodiversity benchmark for the mining, oil and gas and utilities sector. FFI, the UNEP Finance Initiative and Brazilian business school FGV are currently looking at a similar tool for the food and beverages sector. This will be profiled at the COP.

In 2006, Parties to the Convention highlighted the need to disseminate and develop good practice guidance. In response, the Secretariat has compiled good practice tools in a range of sectors. These are available online.

Makers of everything from fertilisers to tractors should be interested in protecting biodiversity: what programmes do they have?

Biodiversity is relevant for all sectors. Several initiatives are underway in several sectors to help integrate biodiversity into decision making.

In the agribusiness sectors, many initiatives are underway. Several of these will be profiled at the COP, on the occasion of the International Day for Biological Diversity (22 May). The International Finance Corporation will also be launching its Biodiversity and Agricultural Commodities Programme at COP.

An issue of the Secretariat's business newsletter focuses on agribusiness, and highlights efforts by companies, industry associations, and environmental groups. It is available at: www.cbd.int/business/newsletter.shtml

CITIES & BIODIVERSITY

Can programs to protect biodiversity help improve the conditions of slums?

Yes – in fact, the verb should be “need to” and not “can”. For large cities in developing countries (where the majority of urban growth is expected to happen), no biodiversity programme can be successful without strong links to poverty alleviation and benefit sharing. The experience accumulated by the CBD's “Cities and Biodiversity” initiative (see www.cbd.int/authorities/) proves that the two issues are actually related – enhancing the quality of the urban environment is linked to social and economic development, as can be seen in the example of Bogota, Colombia, where participative



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planning has led to the engagement of citizens in environmental protection – and a generation of environmentally friendly jobs. In Rio de Janeiro, Brazil, people living in the famous Rocinha slums actually demanded improved environmental conditions as their social and economic status improved. For urban populations living in poverty, biodiversity continues to be an important livelihood source – for food and for business opportunities. Furthermore, the case studies identified in the CBD’s Cities and Biodiversity initiative (see www.cbd.int/authorities/casestudies.shtml) point to the fact that health is linked to environmental balance – degradation of biodiversity resources often leads to epidemics, poor health and inappropriate sanitation. The absence of green areas raises the temperature of urban “heat” islands, with consequences to human health (see the example of Nagoya at www.cbd.int/authorities/informationresources.shtml). In the case of Sao Paulo, Brazil, for instance (see case study at www.cbd.int/authorities/casestudy/saopaulo.shtml), watershed protection, development of urban parks, and awareness-raising are part of an integrated development strategy.

Is the migration of people from rural areas to cities generally good or bad for protecting biodiversity?

As in many cases with biodiversity, it goes both ways. Unregulated urban sprawl and the proliferation of slums clearly have negative impacts, particularly on watersheds and agriculturally rich areas surrounding cities. Planned urbanization, on the other hand, such as the case of Curitiba, Brazil, actually improves the status of biodiversity resources, by setting aside specific areas for protection (both in nearby rural areas and in the so-called “green belts” of urban environments) while concentrating urban development in other areas. Curitiba is one of the cities participating in the CBD Cities and Biodiversity initiative (see www.cbd.int/authorities/). The case study posted at www.cbd.int/authorities/casestudy/curitiba.shtml proves the point made by famous urban planner Julio Lerner, former Mayor of the city, that cities can be part of the solution. The point is clear – a report by UNEP indicates that cities occupy only 2.8 per cent of the Earth’s surface, but urban dwellers control the use of 75% of the planet’s natural resources. This is both a threat and an opportunity for biodiversity - cities can make a difference. If decision makers in cities follow the example of networks such as ICLEI’s Local Action for Biodiversity, or the CBD’s Cities and Biodiversity initiative, urbanization can be a positive force for the implementation of the three goals of the CBD.

What can cities do to protect biodiversity -- raise the number of parks etc?

Cities play a defining role, as they have very specific mandates to collaborate with other levels of government in protecting biodiversity: they set land use regulations and plans,



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they license businesses under more or less environmentally friendly stringent norms, they play a role in implementing sustainable transportation and infrastructure, control water use and treatment, manage urban green areas and watersheds (and can encourage citizens to do the same), they can educate consumers and decision makers. Their mandate (and resources) is growing with urbanization and decentralization. Some of the world's leading cities on biodiversity came together in March 2007, with support from the Secretariat of the CBD, at the invitation of the Mayor of Curitiba, who also hosted COP 8, and adopted the Curitiba Declaration on Cities and Biodiversity (see www.cbd.int/doc/meetings/biodiv/mayors-01/mayors-01-declaration-en.pdf), which invites cities to include biodiversity in their policies and plans, and requests national governments to work with cities on the issue. A variety of strategies and plans can be found at the CBD's web portal for cities (www.cbd.int/authorities/). Specifically, the city of Bonn, host of COP 9, has developed a complete biodiversity strategy, whose components can be seen at www.cbd.int/authorities/casestudies/bonn.shtml . Sao Paulo, Brazil, has decreased illegal logging in the Amazon, thousands of miles away, by curbing the commercialization of illegal timber (www.cbd.int/authorities/casestudy/saopaulo.shtml). Additionally, the participants of the Curitiba meeting indicated critical areas for collaboration on cities and biodiversity – see www.cbd.int/doc/others/cities-collaboration-areas-en.pdf.

Can you point to cities with good examples of protecting biodiversity?

Today, there are several networks of leading cities on the issue of biodiversity: ICLEI's Local Action for Biodiversity (see www.iclei.org/index.php?id=lab), IUCN's Countdown 2010 campaign, joined by various leading cities (www.countdown2010.net/?id=20&ctr=60), the World Mayors' Council for Climate Change and its biodiversity chapter, led by Montreal (see www.iclei.org/index.php?id=7207#c26246) and the CBD's Cities and Biodiversity initiative, with five cities of particular relevance for the CBD (Montreal, Curitiba, Bonn, Nagoya and Johannesburg – see www.cbd.int/authorities/). Among the latter, Bonn has achieved protection of up to 51% of its territory, and has engaged in an extensive awareness campaign for CBD's COP 9 (www.cbd.int/authorities/casestudies/bonn.shtml), Curitiba is well known as a global leader in urban planning, green areas and parkways (www.cbd.int/authorities/casestudy/curitiba.shtml), Nagoya has developed a complex land-use system that values green areas, revolutionized waste management and regularly measures carbon dioxide levels and temperature (www.cbd.int/authorities/casestudies/nagoya.shtml), and Montreal has a model tree planting policy, develops new parks in partnership with the private sector and offers a



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unique set of museums and educational institutions on biodiversity – the Nature Museums (www.cbd.int/authorities/casestudies/Montreal.shtml).

Cities are often on river mouths, rivers or lakes: what can they do to protect these? In many cities rivers get put into concrete pipes -- how damaging is that?

Water management is arguably one of the most important mandates of cities for the sustainable use of biodiversity, and watershed and estuarine protection. Unplanned urbanization and urban sprawl can damage freshwater resources, pollute water bodies and cause impacts hundreds of miles away. However, currently available technologies in watershed protection and restoration, wastewater treatment and cleaner production can avoid these damages. The example of the Catskills watershed in New York, USA, is often used: in 1997, the city purchased forested lands in the watershed to resume the task of natural water filtration, saving US\$ 6 billion by avoiding the construction and operation costs of a water treatment plant. Urban parks and watershed management strategies in Rio de Janeiro, Montreal, Singapore and Porto Alegre help protect these cities' rivers and estuaries. As for containing former waterways in urban areas into artificial channels, this clearly has serious environmental impacts, but once again, in an urban environment the final evaluation may be mixed. In Sao Paulo, Brazil, the Pinheiros and Tiete rivers were enclosed into canals in the late 80s, when they were little more than flowing cesspools which overflowed constantly due to flash floods, polluting the city and creating health hazards. With technical support from development banks, large environmental projects were started, and by 2000, their sewage flows were controlled, and water flow was managed between various dams and reservoirs. Far from having negative impacts, this allowed the rivers to improve their environmental quality, stopped seasonal overflowing that actually damaged urban parks and endangered residents' health, and by allowing the municipality to establish urban parks around the previous flooding area, increased biodiversity and allowed urban residents to get closer to nature instead of seeing it as a risk to their quality of life.

COMMUNICATION EDUCATION & PUBLIC AWARENESS

What signs are there that the biodiversity issue can get to the public in the way that climate change does...have we failed to make the direct connections between biodiversity loss and threats to human wealth and wellbeing?

The challenge of raising public awareness of the importance of biodiversity lies in what you are pointing to - the complexity of the connection between the ecosystems of the



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planet and their services, and human well being. A large part of the public wants to know what the conservation of biodiversity means to them in their lives and sometimes the answer is too complex to understand right away.

The work of the Millennium ecosystem assessment a few years ago has helped us change that. Even though it was a scientific report, it helped come up with the basis for arguments about why we should preserve biodiversity. We now have some examples that help us to make the connections for people.

For example, when the city of New York needed a cost-effective way to ensure clean water - they helped establish a protected area in the watershed in the Catskills, to keep the supply of water clean.

This summer, the public woke up to the importance of birds and bees as pollinators for our blueberry and almond crops. With colony collapse disorder in the news, people started to realise that we need to conserve a variety of creatures that help plants reproduce.

The spectacular collapse of the cod fishery in Canada a number of years ago, and the tremendous job losses that ensued, helps outline how communities depend on these biodiversity resources for the very fabric of communities. Communities around the world have learned this. For example, certain fishing communities in Spain have now adopted sustainable management practices that are actually helping to restore the diversity of ecosystems and ensure a variety of fish for harvesting for years to come.

There are many more examples. We have a new publication on the Value of Protected areas (<http://www.cbd.int/doc/publications/cbd-value-nature-en.pdf>) that outlines some of this for protected areas.

If we really want to make a difference at the policy level, however, we need to get the message to a coalition of people: consumers, government and business. With our new efforts to make the business case for biodiversity, we are beginning to get the producers to act in ways that will help conserve biodiversity.



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ECONOMIC VALUES OF BIODIVERSITY

We hear a lot these days about the economic values of biodiversity and the merits of economic valuation. But is it not preposterous to put a price tag on songbirds or wild flowers? And will it not lead to the commercialization and sell-out of nature?

Elements of answer:

- Looking at the recent data on biodiversity loss, it is fair to say that the sell-out of nature is already ongoing. This is precisely the case because there is no market for biodiversity loss – implying a price of zero. People essentially perceive many biodiversity assets (species, intact ecosystems) as free goods – and act accordingly.
- However, absence of a price tag does not imply absence of economic value. It is important to note that ‘economic value’ does not (only) refer to relatively narrow commercial interests – e.g. in terms of the revenues from the commercial exploitation of forests, or the number of jobs created. It also refers to the contribution of nature to human well-being – ecosystem services – in a broad sense. This would include for instance the enjoyment of a long walk in a nice forest.
- Assigning a price to biodiversity components, by well-designed policy tools, can help to close the wedge between the economic value of biodiversity assets and the absence of markets for biodiversity assets. As everybody (firms, consumers, and policy-makers themselves) would need to take this price into account in decision-making, it would improve decisions towards more biodiversity conservation.
- Valuation does not necessarily lead to the commercialization of biodiversity – in the sense of a privatization of nature and its sale ‘in chunks’ to individual owners. In many cases this is technically not feasible – how would one privatize migratory birds? But even if it were possible, it is a matter of political choice – there are many other policy instruments available.
- Finally, it is important to underline that economic valuation is not competing with ethical considerations. For instance, it does not claim to capture what many people call the intrinsic value of nature. The moral obligation to maintain living nature is not affected by the valuation exercises undertaken by economists; if anything, these exercises are meant to support, and complement, this moral obligation, and to help translate it into day-to-day decision-making and practical policy-making.



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FOREST BIODIVERSITY

Is it better to protect intact forests with their biodiversity for the sake of biodiversity conservation, or to do more to manage low-diversity plantations that can bring commercial benefits, as well as storing carbon?

We need to do both. We should conserve biodiversity-rich forests, and manage plantation forests better so they fulfill environmental as well as economic and social objectives.

Conserving forests for biodiversity is a valuable activity in its own right, but it can be combined with conserving and maximizing other ecosystem services such as recreation, water filtration and storage, and carbon sequestration. And even forest conservation and timber exploitation do not need to be mutually exclusive: in Brazil, four forest management reserves totalling 40,000 km² designated in 2006 for sustainable timber extraction are expected to generate 100 million USD in annual gross revenue from timber, and provide some 8,600 jobs (Mulongoy and Gidda, 2008).

But we also need more sustainably managed forest plantations in future, because the consumption of main timber products (roundwood, sawnwood, pulp, paper) is expected to increase substantially in coming decades (FAO, 2007; Sedjo, 2001), and forest plantations can help to decrease the pressure on biodiversity-rich natural forests. In consequence of growing demand, tropical forest plantation area more than doubled between 1995 and 2005, to 67 million hectares, mostly in Asia. Other plantations, in boreal and temperate regions, have also increased in area. The use of relatively few tree species in these plantations is an issue of concern for a number of forest dependent species and for ecosystem resilience (EEA, 2005; Hagar, 2007). However, forest plantations can also contribute to biodiversity conservation, if they are planned and developed in line with key considerations, such as: establishment on degraded land (no loss of primary forests); establishing ecological corridors, and improving landscape level conservation values; and setting aside key habitats for biodiversity conservation. This can be achieved e.g. by following the recently developed Guidelines for Biodiversity Conservation in Tropical Production Forests, published by the International Tropical Timber Organization.

Does the diversity of a forest alter the amount of carbon it stores?

Not necessarily. However, the amount of carbon is influenced by the age and size of the trees: the older a forest, the more carbon it can store, until it has reached its storage capacity. The old-growth such as the Red Cedar forests of the Pacific West Coast in



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North America, which have taken hundreds or thousands of years to grow, have the highest biomass per hectare of any forest (up to 20,000 m³ of standing timber per hectare, storing about 3,000 tons of carbon), and thus also the highest above-ground carbon storage of any forest. Generally, the structural diversity, such as trees of different species, size, and age, are all positive for biodiversity, and old or decaying trees often harbour a host of other species. The red cedar rainforests of the Western US and Canada, similar to old-growth tropical rain forests, not only offers the best carbon storage, they are also amongst the most biodiversity-rich forests.

There are clear “win-win” cases for biodiversity conservation and carbon sequestration, such as peat swamp forests. These tropical forests grow on layers of organic matter which has formed over thousands of years, and can be many metres thick. The peat consists to a large part of carbon, and the wet forests on its surface protect it from escaping into the atmosphere. If these forests are logged or drained, the peat will start to decompose and release massive amounts of carbon dioxide into the air. Unfortunately, this still often happens, in particular in South-East Asia, where large peat swamp forests are cleared to make way for palm oil plantations or other land-uses. The large forest fires in the region in 2001 made Indonesia the world’s third largest emitter of greenhouse gases (Hooijer et al., 2006). Ironically, this is often done for the production of biofuels, with the aim to reduce carbon dioxide emissions. However, it would take many hundreds of years of biofuel production to make up for the loss of underground carbon stored in the peat. At the same time, tropical peat swamp forests are key habitats for numerous endangered species such as tiger and orangutan. Conserving such key natural forests should be the priority objective for REDD and other emerging mechanisms.

Can conserving forests, in practice, be shown to be more worthwhile than logging or clearing them for agriculture?

Yes. Recent studies show that already at a price of less than 1 USD per metric ton of CO₂-equivalent (the measuring unit of emission reductions), conserving the forest for its carbon would be more profitable than for most alternative uses such as logging or conversion to agriculture (Peterson et al., 2007; Mongabay, 2007). If one adds the value of other ecosystem services, and the intrinsic value of biodiversity, it is well worthwhile to conserve forests. But, once again, forest conservation and economic use are not mutually exclusive. Sustainable forest management offers an alternative which can preserve the main forest functions and its biodiversity, while providing sustainable livelihoods.



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How much will it cost to preserve/conserve forest biodiversity?

Estimates suggest that for only \$5 billion USD per annum initially, deforestation could be stopped in the eight countries responsible for 70 per cent of emissions from land use, although over time these costs might rise (Stern, 2006). Other estimates put the necessary funds closer to 33 billion USD per year, which would cover all tropical forests (Mongabay, 2006). To put these figures in perspective: even 33 billion USD is less than half of the amount that US citizens spend on soft drinks per year (www.marketresearch.com); or only about 4 weeks worth of agriculture subsidies (which can be environmentally harmful) paid by European and other developed countries (James et al., 1999, Myers, 1998, van Beers et al., 1999).

The government of Norway has recently pledged around 500 million USD per year towards REDD activities (3 billion Norwegian Kroner per year).

If REDD is so sensible, what are the objections?

There are a number of questions which still need to be resolved before an international agreement and market mechanism can function. These questions revolve around three key elements:

1. *Baselines and Monitoring*: the deforestation must be measured against an agreed baseline in each participating country. This baseline should take into account deforestation rates of past years. Discussions are still ongoing how to fix this baseline, and subsequently, what accounts for a reduction, and what for an increase in deforestation.
2. *Permanence*: reducing deforestation and forest degradation is a temporary mitigation measure that will simply buy time for the necessary transition to low carbon societies. Even if all global deforestation is avoided, saving 13 million hectares of forests per year would reduce net global emission of greenhouse gases (GHGs) by only around 10-15%. Therefore, the role of forestry is regarded as complementary to other efforts rather than an alternative or a “cheap” remedy to growing emissions of GHGs.
3. *Leakage*: stopping or reducing deforestation in some countries, or some areas, could simply defer the problem elsewhere, i.e. increase the pressure on (natural) forests in countries or areas that are not participating in REDD.

Recognizing these obstacles, the United Nations Framework Convention on Climate Change (UNFCCC) has decided to explore options for overcoming them, to include



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REDD in a new climate change pact to follow the Kyoto Protocol. The Parties to the CBD have recognized REDD as a unique opportunity for forest biodiversity.

What good is having forest diversity when you are one of the 800 million people who don't get enough to eat?

For insecurity is often caused by factors that other than biodiversity conservation, such as armed conflict, poor governance, and inequitable distribution of resources. In many of these situations, forests actually provide basic or supplemental food security. Worldwide, forests provide an estimated 1.6 billion people with everyday needs such as food, shelter, energy, and recreation, while an estimated 300 million people, most of them poor, depend substantially on forest biodiversity, including non-wood forest products, for their subsistence and survival (MEA, 2005), including around 150 million people belonging to indigenous groups. An estimated 5,000 commercial products are derived from forests, and up to half of all most commonly prescribed drugs in developed countries are originating from plants, mostly from tropical forests (MEA, 2005). Conserving (and sustainably using) forest biodiversity is thus a direct contribution to poverty alleviation, and to stabilizing food security, and to promoting human health. Furthermore, deforestation is often harming the poorest parts of the population (who instead would benefit from intact forests), but rather benefits large landowners or corporations who further increase their land holdings by forest conversion for cattle grazing, soy bean production, or other agricultural uses (World Bank, 2007). These commodities are usually produced for the export market.

How is deforestation to plant palm and other varieties for biofuels hitting forests?

The production of biofuels has severe impacts on forest biodiversity, through the conversion of natural or semi-natural tropical forests to plantations for energy crops. The production of biofuels (often derived from palm oil) is arguably the most dangerous threat to forest biodiversity over the coming years. Production of palm oil, soy beans, and other agricultural commodities is also rising due to a larger demand for food products and feed stock. The Organization of Economic Cooperation and Development (OECD) warned in 2007 that “the rush to energy crops threatens to cause food shortages and damage to biodiversity with limited benefits”. A UNEP study published in 2007, *The last stand of the orangutan*, projects that biofuel production could considerably accelerate the disappearance of Indonesia's last natural rainforests, thereby contributing to the possible extinction of the orangutan in the wild.



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How many species are being lost in the Amazon because of climate change and land clearance?

Scientists have calculated that up to 16 million populations of animals and plants (mostly invertebrates, such as insects) disappear per day together with their pristine tropical forest habitat (of which around 16,500 hectares, or 16.5 square kilometres per day disappearing, mostly due to land conversion for agricultural purposes). Considering that the highly specialised species in tropical regions often consist of only very few populations, it is estimated that up to 40,000 species per year, or up to 109 per day (or 4 every hour) disappear forever. Most of these species disappear before they can be scientifically described and be given a scientific name. This holds true for all tropical forests combined, mostly the large forest areas in Central Africa (the Congo basin), South America (the Amazon), and South-East Asia (Hughes et al., 1997).

What are the effects of climate change on northern pine forests? Will they grow more or become more susceptible to pests such as beetles that are normally killed off by harsh winters?

These forests will die off in large areas, and probably be replaced in most cases by other coniferous species, or deciduous species, while pine trees will extend their range northward. Already, the pine forests in British Columbia in Canada have suffered die backs of almost 50% of their territory, and this is expected to increase to 80% by 2013, due to the extended range and higher winter survival rates of the mountain pine beetle. This damage is causing estimated losses of 30 billion Canadian dollars. This massive die back increases the risk of forest fires, which in turn can release large amounts of carbon dioxide into the atmosphere, creating a potentially dangerous self-reinforcing “feedback loop” between the impacts of climate change and its causes. Many insects, in particular in temperate regions, are benefiting from climate change, because they are poikilothermic (cold-blooded), have high reproductive rates, are good dispersers to increase their range, and benefit from droughts (Canadian Forest Service, 2007, personal communication).

Are carbon credits a good idea to help slow the rate of deforestation?

Yes. Already, the voluntary market has shown that carbon offsets can generate considerable funds for the conservation of forests, thus creating an alternative income to logging or land conversion. Both the UNFCCC and the CBD have recognized the usefulness of reducing emissions from deforestation, and in turn, the potential benefits of these activities for biodiversity. And while there is some justified criticism that forest offsets are not permanent, they provide a useful temporary alternative while national economies make the necessary transition to low-carbon economies. Recently, also the



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private sector started to invest in forest conservation and other forest related carbon offsets (Taiyab, 2006).

Sources:

Doornbosch, R. and Steenblik, R. (2007). Biofuels: Is the cure worse than the disease?, Round Table on Sustainable Development. Paris, 11-12 September 2007. OECD.

European Environment Agency. (2005). The European Environment – State and Outlook 2005. Copenhagen.

FAO. (2007). State of the world's forests: 2007. FAO: Rome.

Hagar, J.C. (2007). Wildlife species associated with non-coniferous vegetation in Pacific Northwest conifer forests: A review. *Forest Ecology and Management*, 246(1), 108-122

Hooijer, A., Silvius M., Wösten, H. and Page, R. (2006). PEAT-CO₂, assessment of CO₂ emissions from *drained peatlands in SE Asia*. Delft Hydraulics report Q3943 (2006).

Hughes, J.B., Daily, G.C, and Ehrlich, P.R. (1997). Population Diversity: Its Extent and Extinction. *Science*. 278, (5338), 689-692.

James, A., Gaston, K., & Balmford, A. 1999. Balancing the earth's accounts. *Nature* 401: 323–324.

Millennium Ecosystem Assessment. (2005). Ecosystems and human well-being. Island Press: Washington, Covelo, London.

Mongabay, 2006. Avoided deforestation could help fight third world poverty under global warming pact. <http://news.mongabay.com/2006/1031-deforestation.html>

Mongabay, 2007. Is the Amazon more valuable for carbon offsets than cattle or soy? Rhet A. Butler, <http://news.mongabay.com/2007/1017-amazon.html>, October 17, 2007

Mulongoy, K.J., and Gidda, S.B. (2008) “The Value of Nature: Ecological, Economic, Cultural and Social Benefits of Protected Areas.” Secretariat of the Convention on Biological Diversity, Montreal.

Myers N., Mittermeier, R.A., Mittermeier, C.G., Fonseca, G.A.B. da, & Kent, J. 2000. Biodiversity hotspots for conservation priorities. *Nature* 403: 853–858.

Peterson, A. L., Gallagher, L.A., Huberman, D., and Mulder, I. (2007). Seeing REDD: Reducing Emissions and Conserving Biodiversity by Avoiding Deforestation. Presentation at the 9th Annual BIOECON Conference on the Economic Analysis of Ecology and Biodiversity. King's College, University of Cambridge – 19-20 September 2007.

Sedjo, R. A. (2001). From foraging to cropping: the transition to plantation forestry, and implications for wood supply and demand, *Unasylva*, 204(52).

Stern, N. (2006). The economics of climate change: The Stern review. Cambridge University Press: Cambridge.



Taiyab, N., 2006. Exploring the market for voluntary carbon offsets. International Institute for Environment and Development, London.

UNEP. (2007). The last stand of the orangutan – State of emergency: Illegal logging, fire and palm oil in Indonesia’s national parks. United Nations Environment Programme, GRID-Arendal: Norway.

van Beers, C.P. & de Moor, A.P.G. 1999. Addicted to Subsidies. The Hague: Institute for Research on Public Expenditure.

World Bank (2007), At loggerheads? Agricultural expansion, poverty reduction, and environment in the tropical forests. The International Bank for Reconstruction and Development /The World Bank, Washington.

WWF (2007). Rain forest for biodiesel? Ecological effects of using palm oil as source of energy. WWF Germany: Frankfurt am Main

WWF (2006). Sustainability standards for bioenergy. WWF Germany: Frankfurt am Main

INVASIVE ALIEN SPECIES

In today’s global world, is it really possible to stop the spread of such species?

If we apply the precautionary approach, the spread of invasive alien species can be limited. Preventing international movement of potentially invasive living organisms and rapid detection at borders are less costly than control and eradication. When non-native species are introduced, early detection and control is the key to prevent the threats from invasive alien species. Building capacity to conduct risk assessments prior to introductions of such species and appropriate control for preventing the establishment of the species in the environment is urged.

What can be done to limit the spread of invasive species due to climate change?

Early detection and monitoring of introduced species can prevent or limit the spread of invasive alien species caused by changes in the climate. However, the root of the problem should also be addressed through mitigation of climate change.

Isn’t this the true biodiversity crisis – ignored but a lot more important than all the other issues put together?

The causes of biodiversity loss are multiple. Invasive alien species and climate change are both considered major causes of biodiversity loss by the Millennium Ecosystem Assessment, a global assessment on ecosystems conducted between 2001 and 2005.



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However, to truly address the loss of biodiversity, one must consider all the factors leading to such loss. The threats of invasive alien species, when added to existing stressors and compounded by climate change, represent a real challenge for biodiversity conservation.

How is climate change helping the spread of invasive species?

As the climate changes, the opportunities for tropical invasive alien species to extend to new ranges may increase. In addition, climatically-induced stress can negatively affect native plants. The vegetation gap caused by such stress may quickly be occupied by invasive alien species. Both droughts and freezing are likely to increase in frequency and intensity due to climate change. This may reduce the resistance of plants and trees to insect and pest attacks. For example, in Australia "sensitive plant" (*Mimosa pigra*), a woody legume, escaped from the Darwin Botanical Gardens during a major flood. The seeds were transported into the Adelaide River, which transverses the sensitive Kakadu National Park. The spread of *Mimosa pigra* has now become a significant problem in the region and in other areas of the world.

Which are the worst invasive species? -- rabbits in Australia, zebra mussels in the Great Lakes, etc

The following examples are taken from:

Source: Lowe S., Browne M., Boudjelas S., De Poorter M. (2000) *100 of the World's Worst Invasive Alien Species A selection from the Global Invasive Species Database*. Published by The Invasive Species Specialist Group (ISSG), a specialist group of the Species Survival Commission (SSC) of the World Conservation Union (IUCN), 12pp. First published as special lift-out in *Aliens 12*, December 2000. Updated and reprinted version: November 2004.

Feral Pig (*Sus scrofa*)

Feral pigs are escaped or released domestic animals. Introduced to many parts of the world, they damage crops, stock and property, and transmit many diseases such as Leptospirosis and foot and mouth disease. Rotting pigs dig up large areas of native vegetation and spread weeds, disrupting ecological processes such as succession and species composition. They are omnivorous and their diet can include juvenile land tortoises, sea turtles, sea birds and endemic reptiles. Management of this invasive species is complicated by the fact that complete eradication is often not acceptable to communities that value feral pigs for hunting and food.



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Strawberry Guava (*Psidium cattleianum*)

The strawberry guava is native to Brazil, but has been naturalised in Florida, Hawai'i, tropical Polynesia, Norfolk Island and Mauritius for its edible fruit. It forms thickets and shades out native vegetation in tropical forests and woodlands. It has had a devastating effect on native habitats in Mauritius and is considered the worst plant pest in Hawai'i, where it has invaded a variety of natural areas. It benefits from feral pigs (*Sus scrofa*) which, by feeding on its fruit, serve as a dispersal agent for its seeds. In turn, the guava provides favourable conditions for feral pigs, facilitating further habitat degradation.

Miconia (*Miconia calvescens*)

A highly ornamental tree from South America, Miconia was introduced to a botanical garden on the island of Tahiti in 1937. Its huge red and purple leaves made it highly desirable for gardeners. It was spread into the wild by fruit-eating birds and today, more than half the island is heavily invaded by this plant. It has a superficial and tentacular rooting system that contributes to landslides and has become the dominant canopy tree over large areas of Tahiti, shading out the entire forest under-story. Scientists estimate that several of the island's endemic species are threatened with extinction as a result of habitat loss due to Miconia. It has been introduced to other Pacific islands, including Hawaii where it was introduced as an ornamental in the 1960s. The plant has since been found in many locations on the Hawaiian islands. It is still sold as an ornamental plant in the tropics.

Western Mosquito fish (*Gambusia affinis*)

The mosquito fish is a small, harmless-looking fish native to the fresh waters of the eastern and southern United States. It has become a pest in many waterways around the world following initial introductions early last century as a biological control of mosquito. In general, it is considered to be no more effective than native predators of mosquitoes. The highly predatory mosquito fish eats the eggs of economically desirable fish and preys on and endangers rare indigenous fish and invertebrate species. Mosquito fish are difficult to eliminate once established, so the best way to reduce their effects is to control their further spread. One of the main avenues of spread is continued, intentional release by mosquito-control agencies

Small Indian Mongoose (*Herpestes javanicus (auro-punctatus)*)

This voracious and opportunistic predator is native to areas from Iran, through India to Myanmar and the Malay Peninsula. It was introduced to Mauritius and Fiji and to the West Indies and Hawaii in the late 1800s to control rats. Unfortunately, this early attempt



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at biological control has had disastrous impacts. Island populations of native fauna, which had evolved without the threat of a fast moving, mammalian predator, were no match for the mongoose. It has caused the local extinction of several endemic birds, reptiles and amphibians and threatens others including the rare Japanese Amami rabbit (*Pentalagus furnessi*). The small Indian mongoose is also a vector of rabies.

Rosy wolf snail (*Euglandina rosea*)

Native to the southeastern United States, the predatory rosy wolf snail was introduced to islands in the Pacific and Indian Oceans from the 1950s onwards as a biological control agent for another alien species, the giant African snail (*Achatina fulica*). The giant African snail was intended as a food source for humans but became an agricultural pest. In French Polynesia, the fast moving rosy wolf snail rapidly eliminated local endemic species. One group threatened by the rosy wolf snail is the Partulid tree snails, which evolved separately from each other in isolated valleys and exhibit a variety of unique characteristics. Many Partulid tree snails have been lost already and today the survivors exist in zoos and in the world's first wildlife reserves for snails. This invasion by a biological control agent has caused a significant loss of biodiversity.

Water Hyacinth (*Eichhornia crassipes*)

This South American native is one of the worst aquatic weeds in the world. Its beautiful, large purple and violet flowers make it a popular ornamental plant for ponds. It is now found in more than 50 countries on five continents. Water hyacinth is a very fast growing plant, with populations known to double in as little as 12 days. Infestations of this weed block waterways, limiting boat traffic, swimming and fishing. Water hyacinths also prevent sunlight and oxygen from reaching the water column and submerged plants. Its shading and crowding of native aquatic plants dramatically reduces biological diversity in aquatic ecosystems.

Nile Perch (*Lates niloticus*)

The Nile perch was introduced to Lake Victoria, Africa in 1954 to counteract the drastic drop in native fish stocks caused by over-fishing. It has contributed to the extinction of more than 200 endemic fish species through predation and competition for food. The flesh of Nile perch is oilier than that of the local fish, so more trees were felled to fuel fires to dry the catch. The subsequent erosion and runoff contributed to increased nutrient levels, opening the lake up to invasions by algae and water hyacinth (*Eichhornia*



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crassipes). These invasions in turn led to oxygen depletion in the lake, which resulted in the death of more fish. Commercial exploitation of the Nile perch has displaced local men and women from their traditional fishing and processing work. The far-reaching impacts of this introduction have been devastating for the environment as well as for communities that depend on the lake.

What can shipping companies do to stop invasive species in ballast water tanks?

The main solution for shipping companies to prevent the transport of invasive alien species in ballast water tanks is to follow the International Maritime Organization (IMO) “Guidelines for the Control and Management of Ship’s Ballast Water to Minimize the Transfer of Harmful Aquatic Organisms and Pathogens”.

These include:

- 1) Minimizing uptake of harmful aquatic organisms, pathogens and sediments,
- 2) Removing ballast sediment on a timely basis
- 3) Avoiding unnecessary discharge of ballast water
- 4) Conducting ballast exchange in deep sea where the organisms from shallow water do not generally survive
- 5) Non-release or minimal release of ballast water
- 6) Discharge the ballast to reception facilities provided by port

ISLAND BIODIVERSITY

Is it true to say that the invasion of alien species is the greatest global threat to island water diversity?

It is difficult to assess the relative weight of the many environmental pressures on islands – climate change, invasive alien species, pollution and coastal degradation. Furthermore, they are often inter-related. However, it is true that the complex impacts of invasive alien species are among the top concerns. Just recently, the nine Pacific island Parties to the Convention on Biological Diversity issued a statement for COP 9 that says “invasive species remain our most critical threat to achieving the CBD objectives and one that may be more difficult to combat given the impacts of climate change and climate change responses”. Please see more on this issue at: <http://www.cbd.int/island/invasive.shtml> .

What can you do to protect island animals and plants to ensure they do not go the way of the dodo in Mauritius?

It is true that islands are a particularly sensitive ecosystem. Of the 724 recorded animal extinctions in the last 400 years, about half were of island species. At least 90% of the



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bird species that have become extinct in that period were island-dwellers. It is, however, possible to avoid this fate, and progress has been made recently. The Convention on Biological Diversity adopted a specific programme of work on island biodiversity at COP 8 in 2006. It sets out almost 50 priority actions for Parties, organized under seven focal areas, including the protection of biodiversity and promotion of its sustainable use, maintaining ecosystem goods and services, fostering traditional knowledge systems, and ensuring appropriate funding for the implementation of the programme of work. Recent breakthroughs include the Micronesia and Caribbean Challenges, the Coral Triangle initiative, and the commitment by the Global Environmental Facility to allocate over 100 million US dollars to the implementation of the programme. At the CBD's COP 9, Parties will discuss this issue on Monday 19 May, under agenda item 4.10. A document highlighting what Parties are doing on islands is available as UNEP/CBD/COP/9/19, at www.cbd.int/doc/meetings/cop/cop-09/official/cop-09-19-en.doc. You can also learn more about what is being done at <http://www.cbd.int/island/casestudies.shtml>.

Can you get rid of invaders such as rats if they manage to get a foothold?

Definitely yes, and the recovery of the original ecosystems is relatively quick. Many Parties to the Convention, such as New Zealand, have achieved remarkable success at this. Close to Auckland, various islands have been freed of invasive species such as rodents (Rangitoto, Motutapu, Motuora, Kawau, Tiritiri Matangi Islands), and are already in various stages of invasive species control and recovery of its original endemic flora and fauna. Some protected areas such as Tawharanui Regional Park display pest-proof fences and are a showcase of ecosystem restoration. Karori Sanctuary in Wellington is a successful example of a public-private partnership to control invasive species resulting in rapid recovery of indigenous fauna (tuatara, amphibians, and birds). IUCN's Invasive Species Specialist Group records a number of successful experiences (www.issg.org/). The Pacific Invasives Initiative (PII) of the Cooperative Islands Initiative, supported by New Zealand, was launched in 2004 and has recently secured another five-year funding arrangement (see www.issg.org/cii/PII/).

How is biodiversity at risk on islands from climate change (rising seas, nowhere to go if the climate becomes unsuitable)?

Islands suffer different effects from climate change: the onset and duration of wet and dry seasons change, affecting natural ecosystems and traditional agro-forestry systems, phenomena of severe and extreme weather become more pronounced, coral reef bleaching and degradation will in turn reduce protection against wave and weather impacts, and the sea level may rise, which also affects freshwater levels and erosion of



coastal landscapes. As the microclimate changes, several species cannot adapt by migrating upwards or pole-wards to find suitable habitats. What can be done involves adaptation to climate change and mitigation (i.e. reducing the carbon emissions). Islanders can, for instance, choose climate-resilient species (those that can adapt to the changes) for cultivation and restoration, can set up networks of protected areas for species mobility, and can start reforestation programmes with mangroves, coral reef protection and ecosystem restoration (endemic species are often quite resilient). You can find more information on what can be done at www.cbd.int/climate/done.shtml.

PROTECTED AREAS

Do protected areas help the livelihoods of the people who live near them?

Protected areas, when carefully designed and managed, can contribute to poverty reduction, sustainable development including the achievement of the Millennium Development Goals. The provisioning services (food, fuel, fresh water and herbal medicines) of protected areas have direct use value to rural communities. Many poor people in rural areas depend on protected forests, pastures, wetlands and marine areas for their livelihoods. There is increasing recognition that conservation efforts supporting protected area creation and management are essential to achieving the Millennium Development Goals, since these areas maintain healthy ecosystems and their services.

- Studies have shown that nearly 1.1 billion people worldwide depend on forest protected areas for their livelihoods, and that forest-related income provides a significant share of total household income.
- Marine and inland water protected areas serve as an excellent source of substantial income and food security from fishing for poverty-stricken households. A study in Cambodia has shown that fuel wood, fishing and other resources, provided by mangrove protected areas, constituted 20 to 58% of household incomes, with heavier reliance among poorer households.
- The 50,000 residents of Lupande Game Management Area in Zambia raise annual revenue of US\$ 230,000 (representing 80% of the total revenue) from two hunting concessions.
- The Maya Biosphere Reserve in Guatemala generates an annual income of approximately US\$ 47 million and provides employment to 7000 people.



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- Pollination services of protected areas in Cape Region in South Africa are worth approximately US\$ 400 million annually.
 - Wetland and woodland products from the community –managed Mtanza-Msona Village Forest Reserve, adjacent to the Selous Game reserve in Tanzania, are worth almost eight times as much as all other sources of farm production and off-farm income of the poorest household in the village. The value of the wide range of wild foods harvested from wetlands is more than 14 times that of household's average annual expenditures on food from market.
 - Marine protected areas (MPAs) help empower women economically and, in some cases, socially. In Navakavu MPA in Fiji, women are the reef gleaners and benefit financially by collecting and selling the bountiful shellfish from just outside the marine protected area. In MPAs of Bunaken in Indonesia and Apo Islands in the Philippines, diving tourism created more high-income job opportunities for women, improving their lives. In the Arnavons MPA in Solomon Islands, women gained a stronger voice in community meetings when they became involved in income earning activities of seaweed farming and traditional clothes making.

For further information: CBD Technical series number 36 - [Protected Areas in Today's World: Their Values and Benefits for the Welfare of the Planet](http://www.cbd.int/doc/publications/cbd-ts-36-en.pdf)
www.cbd.int/doc/publications/cbd-ts-36-en.pdf

The value of nature: ecological, economic, cultural and social benefits of protected areas.
www.cbd.int/doc/publications/cbd-value-nature-en.pdf

Are there enough protected areas? About 11% of the world's land area?

Globally, the number of protected areas has been increasing significantly over the last decade, and there are now more than 100,000 protected sites worldwide covering 11.6% of the Earth's land surface, making them one of the Earth's most significant land uses. However, while the number and size of protected areas have been increasing, biological diversity loss continues unabated. Moreover, there are substantial differences in coverage between different biomes, ecosystems and habitats. Only 5% of the world's temperate needle-leaf forests and woodlands, 4.4% of temperate grasslands and 2.2% of lake systems are protected. Furthermore, marine coverage lags far behind terrestrial coverage, with approximately 0.6% of the ocean's surface area and about 1.4% of the coastal shelf areas protected. A more detailed analysis of the 825 terrestrial ecoregions and 64 large marine ecosystems shows that for a large percentage of these ecosystems, which are



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characterized by distinct populations of species, the target of 10% protected area coverage is yet to be achieved.

However, many protected areas are ineffective for a number of reasons, including: (i) insufficient financial and technical resources to develop and implement management plans or lack of trained staff; (ii) lack of scientific data and information for management decisions, including information on the impacts of resource use and on the status of biological resources; (iii) lack of public support and unwillingness of users to follow management rules, often because users have not been involved in establishing such rules; (iv) inadequate commitment to enforcing management rules and regulations; (v) unsustainable use of resources occurring within protected areas, including impacts of human settlement, illegal harvesting, unsustainable tourism, and introduced invasive alien species; (vi) contribution to poverty where local people are excluded; (vii) impacts from activities in land and sea areas outside the boundaries of protected areas, including pollution and overexploitation; (viii) poor governance or lack of clear organizational responsibilities for management and absence of coordination between agencies with responsibilities relevant to protected areas; and (ix) conflicting objectives of the protected areas. These issues were discussed at length at the fifth World's Parks Congress, held in 2003 in Durban, South Africa and reviewed in CBD Technical Series No 15.

Should there be more marine protected areas? (Currently less than 1% of oceans protected)

Yes there is a need for more marine protected areas. Recent research has shown that Marine Protected Areas (MPAs) can contribute to the conservation of ocean species and habitat, and aid in the development of sustainable fisheries. MPAs protect exploited species during critical stages of their life, and act as insurance against poor and inadequate fishery management. They protect sedentary species such as shellfish, reef fish, and rockfish; they can also help protect migratory species such as salmon and cod through protection of key spawning, rearing grounds, and migration corridors. MPAs have been shown to increase the average size of organisms, as well as their density within their boundaries. They enhance the fish populations outside of the reserve by spillover into adjacent areas. Yet, only a mere 0.5% of the oceans are protected through MPAs against 12% of the terrestrial lands, and marine waters beyond national jurisdiction have nearly no MPA to support deep-sea fisheries and the “global marine commons.



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The implementation of MPAs for fisheries management has increased recently due to the role of MPAs in conserving biodiversity, increasing fish stocks, and enhancing the food security of coastal communities.

How do you fund protected areas -- persuade people to keep out and see the benefits from safeguarding nature?

Establishing and managing protected areas costs money. There are significant running costs associated with ensuring that protected areas are effectively protected, that local communities benefit from them and that the value of protected areas are maintained in perpetuity. Three separate studies estimated the total annual cost for effective management of the existing protected areas in developing countries ranges from US \$1.1 billion to \$2.5 billion per year and the funding shortfall (total cost minus current funding) between US \$1 and 1.7 billion per year.

Governments are conscious of these estimated shortfalls and, in adopting the programme of work on protected areas, called for increased financing, including external financial assistance for developing countries and countries with economies in transition. The Conference of the Parties therefore urged Parties, other Governments and funding organizations to “mobilize as a matter of urgency through different mechanisms adequate and timely financial resources for the implementation of the programme of work by developing countries, particularly in the least developed and the small island developing States amongst them, and countries with economies in transition, in accordance with Article 20 of the Convention, with special emphasis on those elements of the programme of work requiring early action” (paragraph 9 of decision VII/28). The Conference of the Parties also called on Parties and development agencies to integrate protected area objectives into their development strategies (paragraph 11 of decision VII/28).

Implementation of the programme of work needs enhanced funding. Since the Convention came into force in 1993, the world’s protected areas grew by almost 100% in number and 60% in size, yet in the same period, international financing for biodiversity conservation grew only 38%. How are we to meet the additional resource requirements? There is no one-size-fits-all solution. We need an open-minded, pragmatic and flexible approach. Expanded public funding will be fundamental to financial sustainability. Building strong institutional arrangements for financing the implementation of the programme of work is essential. Institutions, including governments, donors, international NGOs and the private sector, should seek opportunities to create synergies



and partnerships, and approach the lack of funding through concerted efforts. There is a need for developing a diversified financial portfolio of both traditional and innovative financial mechanisms and a need for development and implementation of innovative financial mechanisms.

Isn't one of the greatest threats to all this talk by indigenous people that the colonialists 'stole' land from them and turned it into protected areas?

For over a century, protected areas in the form of government notified sites for wildlife conservation have been managed through centralized bureaucracies in ways that totally or largely excluded local communities. Given that most Protected Areas (PAs) have traditionally had people living inside or adjacent to them, dependent on their resources and often with associated age-old beliefs and practices, such management has alienated communities. There is also increasing evidence that PAs have often caused further impoverishment of already economically marginal communities, through loss of access to livelihood resources, physical displacement, and other impacts. One of the common features of many recent innovations is the notion of participatory or community based governance. Simply put, the focus is on greater involvement of local communities, with net benefits for both conservation and people.

Ecological, economic and social benefits of protected areas can only be enhanced and sustained when they are effectively managed through good governance. Participatory decision-making and management processes that incorporate and respond to the rights and interests of a broader range of stakeholders – particularly the indigenous and local communities living in and around protected areas are essential ingredients of good governance. Participatory and equitable conservation, with involvement of indigenous and local communities, can enhance net benefits for both conservation and people. Collaboratively Managed Protected Areas and Community Conserved Areas are the two broad categories of participatory conservation that incorporate several principles of 'good governance' and there are now many documented examples of these areas around the world.

Is a wetland, a forest or a mangrove worth more left alone or converted to anything from farmland to aquaculture? Some studies show that intact ecosystems are worth far more



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Land use change and conversion is one of the major drivers of biodiversity loss. The value of intact ecosystems is far more than the benefits accrued from their conversion. Over the last 40 years there has been a paradigm shift in the role of protected areas from “national parks and reserves” to a broader conceptual and practical approach, including sustainable use areas. Currently, it is recognized that protected areas contribute, besides their conservation function, to human welfare, poverty alleviation and sustainable development. The goods and services that protected areas provide include, *inter alia*, protection of species and genetic diversity; maintenance of ecosystem services, such as watershed and storm protection; carbon sequestration; products for livelihoods of local people (for example, improvement of fishery and forestry yields); and other socioeconomic benefits, such as in relation to tourism and recreation. Protected intact ecosystems, possessing and protecting both material and non-material riches, play key role in economic and social welfare of humanity and the ecological health of the planet. Protected areas provide valuable and numerous benefits to:

- Protect biological diversity, and ecological and evolutionary processes
- Prevent and reduce poverty by supporting livelihoods, providing social and cultural governance and subsistence values, and maintaining ecosystem services
- Ensure breeding grounds for wildlife and fish, critical to the food security of hundreds of millions of people
- Protect commercial fisheries from collapse
- Provide medicinal plants, biochemical components for the pharmaceutical industry and ecological balance that controls and acts as a barrier for diseases (e.g. malaria) and epidemics
- Hold important plant genetic resources for food and agriculture, including endemic and threatened wild crop relatives as well as land races for food production
- Filter and supply freshwater for both rural and urban populations around the world
- Mitigate the effects of natural disasters by acting as barriers and buffer zones for storms, floods, and drought
- Provide capacity to adapt to climate change
- Act as enormous natural carbon sinks and play a key role in global climate regulation



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- Generate tremendous direct economic benefits, and serve as a key asset for the tourism industry -- critical to the economies of the majority of less developed, developing and island states, and one of the world's largest economic engines
 - Offer space for people to enjoy recreation as well as spiritual and physical renewal
 - Hold irreplaceable and immeasurable spiritual value for particular communities and faiths
 - Protect the territories and rights of indigenous and local communities providing them the resources and space to continue traditional lifestyles and retain control of their destinies
 - Facilitate governance mechanisms that enhance social capital and bring together a diversity of stakeholders at different levels, from transboundary conservation areas and peace parks, to local and municipal areas managed by collections of stakeholders

The benefits of protected areas extend spatially far beyond their boundaries.

The CBD process

What are the main negotiating blocks?

The main negotiating groups are the same as in other United Nations fora, that is five main regional groups: Asia and the Pacific, Africa, Latin America and the Caribbean (GRULAC), the Western and others Group (WEOG), which itself is subdivided in two main components (the European Union and the JUSCANZ). In addition, from time to time the developing countries speak as one voice through the "Group of 77 and China".

Other groups, cutting across regional groups, also exist and/or are created from time-to-time in connection with specific issues. For example, the "Group of Like-minded Megadiverse Countries" brings together 17 States from Africa, Asia and the Pacific and Latin America and the Caribbean in the context of the negotiation of the international regime on access and benefit-sharing. Also, the Group of Small Island Developing Countries (known as SIDS) speaks on the issue of biodiversity and climate change, as well as other issues of special interest to this group of countries. In the framework of discussions on the Cartagena Protocol on Biosafety, the "Group of Like-minded



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countries" has defended the interests of the main exporters of genetically modified organisms.

What are the main obstacles to progress at the talks?

How does the CBD relate to the UNFCCC and the UNCCD?



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TRADITIONAL KNOWLEDGE 8(J)

Isn't it the case that as soon as any group has a chance to dump its so-called traditional knowledge it does so?

Traditional knowledge is actually quite valuable.

In fact 80% of humanity uses traditional knowledge for their health needs – something that many people in the occidental world forget. Many western medicines discovered and developed and fast-tracked by using traditional knowledge – as such many medicines are derived from traditional knowledge.

Traditional knowledge is locally based and based on practice and passed on through countless generations (usually orally) and as such is a valuable and useful heritage in managing the local area. In fact indigenous peoples have accumulated an encyclopedic knowledge of their traditional territories and this is necessary for effective environmental management. Indigenous peoples have the on-going and historic experience that their traditional knowledge has been taken and used without their consent. Much money has been made from derivatives of traditional knowledge with little return to the knowledge holders/owners and often those same communities do not have access to those products including medicines derived from their traditional knowledge.

At this time traditional knowledge is not adequately protected by many national or international law because of its collective nature (these legal systems are based on individual rights and largely ignore collective rights), making it vulnerable to unauthorised use.



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