United Nations Framework Convention on Climate Change

# UNITING ON CLIMATE

UNFCCC

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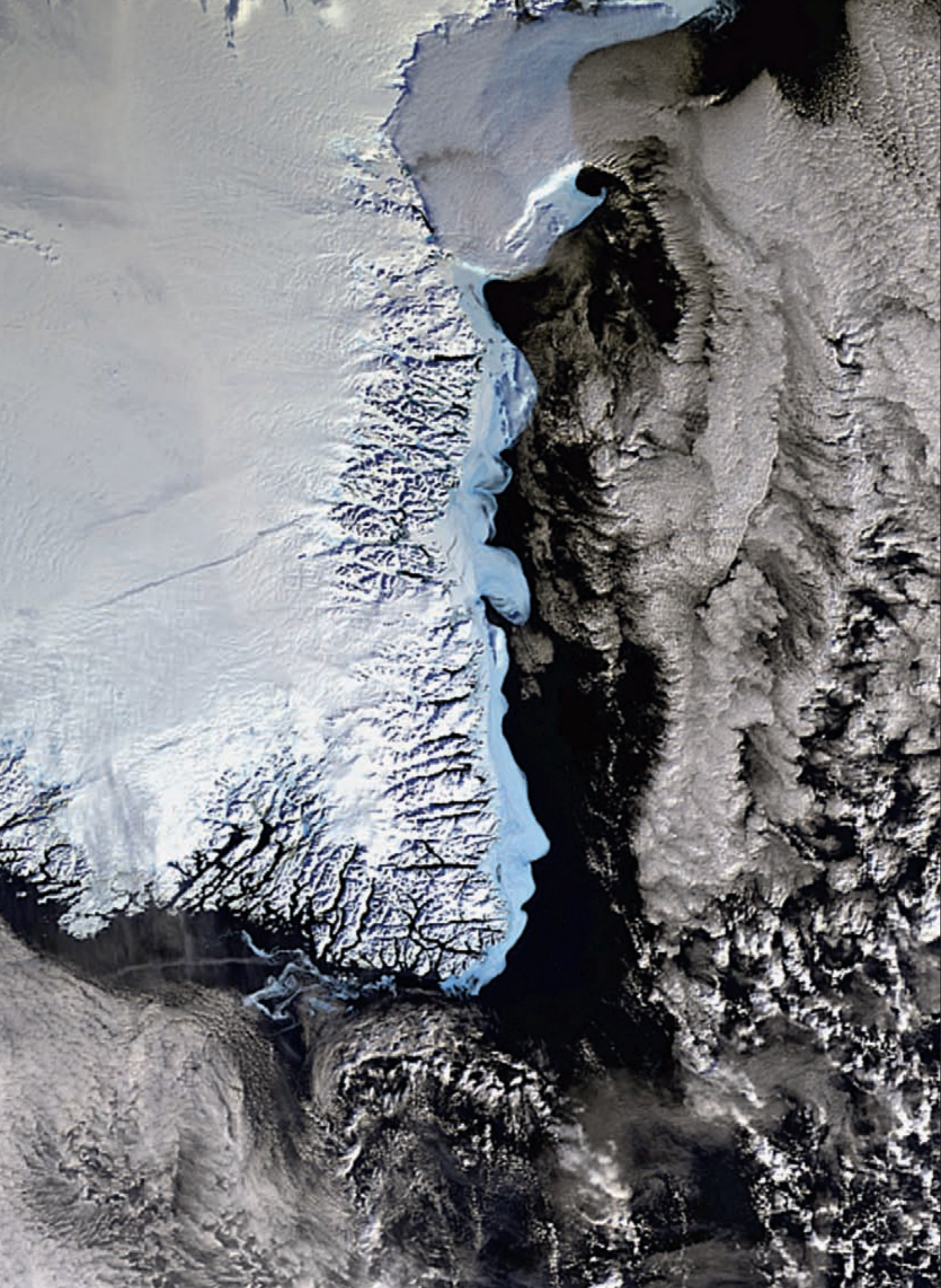
A guide to
the Climate Change Convention
and the Kyoto Protocol

UNFCCC



# FOREWORD

Climate Change has come to be recognized as one of the most critical challenges ever to face human-kind. The impacts range from sea level rise, melting ice caps and glaciers, along with increased incidences of drought and flooding. This in turn is already leading to more agricultural shortfalls, endangered water security and the spread of vector-borne diseases.

The world has recognized that climate change is no longer solely an environmental problem. Rather, it has become an economic, trade and security issue that will increasingly dominate global and national policies as its impacts become more apparent. We know that the costs of inaction outweigh the costs of action. Whilst mitigating climate change needs to be financed, so does adapting its inevitable effects. These effects will be felt the most by those least responsible for them – people in developing countries.

Since climate change is a global problem, it needs a global response that embraces the interests and needs of all countries. Since taking effect in 1994, the United Nations Framework Convention on Climate Change (UNFCCC) has been crucial in addressing climate change and the need for a reduction of emissions of greenhouse gases. The ultimate objective of the Convention, which has near-universal membership, is to stabilise greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous human interference with the climate system.

The Kyoto Protocol, the daughter Treaty of the Convention, entered into force in 2005. The Protocol constitutes an important first step in the fight against global climate change by setting out specific, binding emission reduction commitments. The Treaty has meanwhile spawned an international carbon market that has brought about significant emission reductions and contributed to the transfer of clean technologies from industrialised to developing countries. As such, it provides much of the basic legal architecture needed for any future international agreement or set of agreements.

This guide provides an overview of the Convention's and Protocol's evolution, as well as providing an overview of the commitments that countries have taken on so far. It also outlines several of the building blocks already understood to be needed for an ambitious post-2012 climate change framework – the type of international framework that can bring about emission reductions in line with what science tells us in needed whilst generating essential and significant funding for adaptation.

**Yvo de Boer**, *Executive Secretary*
United Nations Framework Convention on Climate Change
November 2007

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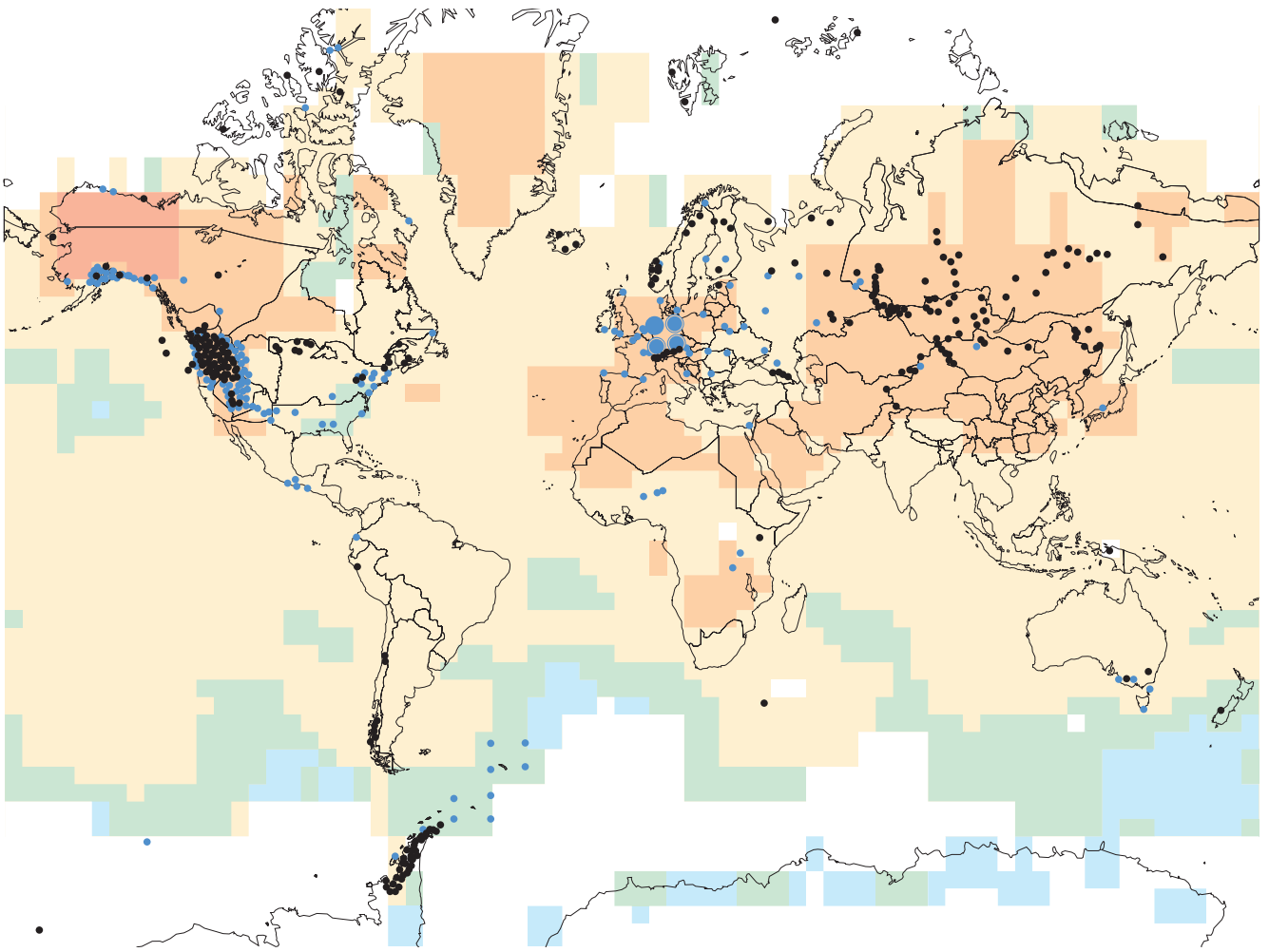
**Figure I-1.** **Changes in physical and biological systems and surface temperature 1970 – 2004**




| Physical | Biological |
|---|---|
| Number of significant observed changes | Number of significant observed changes |
| Percentage of significant changes consistent with warming | Percentage of significant changes consistent with warming |

| NAM | | LA | | EUR | | AFR | | AS | | ANZ | | PR[b] | | TER | | MFW[c] | | GLO | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 355 | 455 | 53 | 5 | 119 | 28,115 | 5 | 2 | 106 | 8 | 6 | 0 | 120 | 24 | 764 | 28,586 | 1 | 85 | 765 | 28,671 |
| 94% | 92% | 98% | 100% | 94% | 89% | 100% | 100% | 96% | 100% | 100% | – | 91% | 100% | 94% | 90% | 100% | 99% | 94% | 90% |

Locations of significant changes in data series of physical systems (snow, ice and frozen ground; hydrology; and coastal processes) and biological systems (terrestrial, marine, and freshwater biological systems), are shown togetherwith surface air temperature changes over the period 1970 – 2004. A subset of about 29,000 data serieswas selected fromabout 80,000 data series from 577 studies. Thesemet the following criteria: (1) ending in 1990 or later; (2) spanning a period of at least 20 years; and (3) showing a significant change in either direction, as assessed in individual studies. These data series are from about 75 studies (of which about 70 are new since the Third Assessment) and contain about 29,000 data series, of which about 28,000 are from European studies. White areas do not contain sufficient observational climate data to estimate a temperature trend. The 2 x 2 boxes showthe total number of data series with significant changes (top row) and the percentage of those consistent with warming (bottom row) for (i) continental regions: North America (NAM), Latin America (LA), Europe (EUR), Africa (AFR), Asia (AS), Australia and New Zealand (ANZ), and Polar Regions (PR) and (ii) global-scale: Terrestrial (TER), Marine and Freshwater (MFW), and Global (GLO). The numbers of studies from the seven regional boxes (NAM, ..., PR) do not add up to the global (GLO) totals because numbers from regions except Polar do not include the numbers related to Marine and Freshwater (MFW) systems. Locations of large-area marine changes are not shown on the map. [Working Group II Fourth Assessment F1.8, F1.9; Working Group I Fourth Assessment F3.9b].

[a] Circles in Europe represent 1 to 7,500 data series.
[b] Polar regions include also observed changes in marine and freshwater biological systems.
[c] Marine and freshwater includes observed changes at sites and larger areas in oceans, small islands and continents. Locations of large-area marine changes are not shown on the map.

*Source:* IPCC WG II Fourth Assessment Report, Figure SPM-1.

# I. INTRODUCTION

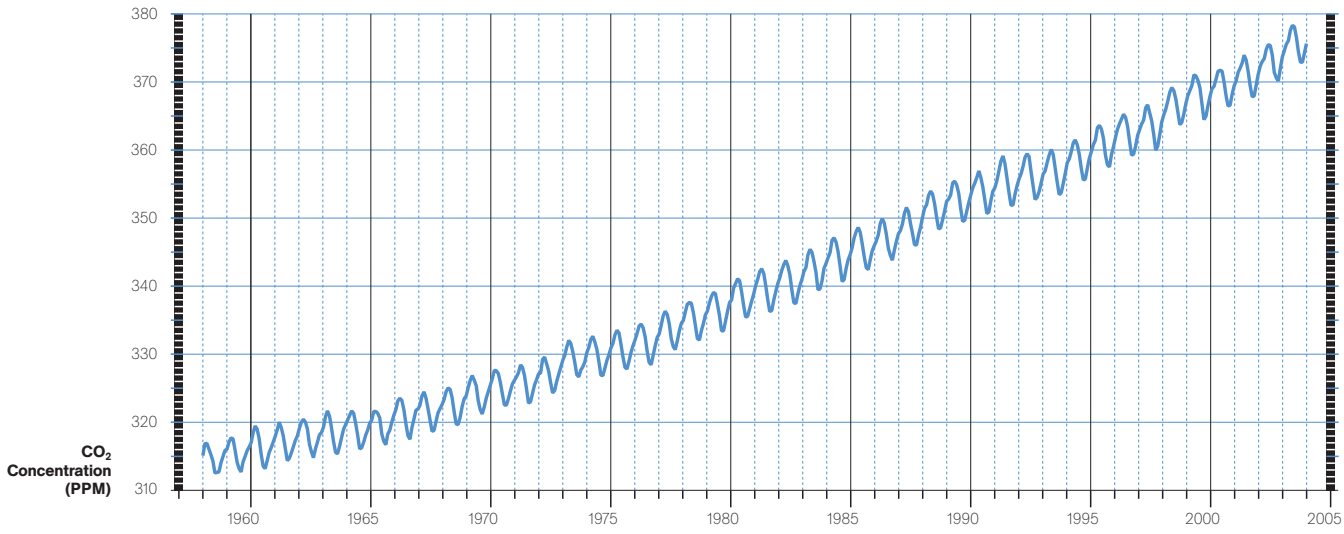
The world's climate has always varied naturally but compelling evidence from around the world indicates that a new kind of climate change is now under way, foreshadowing drastic impacts on people, economies and ecosystems. Levels of carbon dioxide and other 'greenhouse gases' in the atmosphere have risen steeply during the industrial era owing to human activities like fossil fuel use and deforestation, spurred on by economic and population growth. Like a blanket round the planet, greenhouse gases trap heat energy in the Earth's lower atmosphere (see below). If levels rise too high, the resulting overall rise in air temperatures – global warming – is liable to disrupt natural patterns of climate.

In its Fourth Assessment Report, the Intergovernmental Panel on Climate Change (IPCC) concluded that the evidence that climate change is already occurring is unequivocal and is due in large part to human activity. The IPCC says the world faces an average temperature rise of around 3°C this century if greenhouse gas emissions continue to rise at their current pace and are allowed to double from their pre-industrial level. The impacts of this climate change, particularly temperature increases, are already being witnessed on natural and human systems around the world and are very likely to increase (See opposite side).

People in some areas may benefit from climate change, but many more will struggle to cope. Developing countries will suffer more than others, as their lack of resources makes them especially vulnerable to adversity or emergencies on any major scale. Yet on a per person basis, people in developing countries contribute only a small proportion of greenhouse gas emissions.

The particular needs of developing countries in adapting to climate change is of critical importance. In many key ways, the problem of climate change is interlinked with development: economic growth is essential for developing countries to improve the health, economic livelihood and quality of life of their citizens. Economic growth is also essential to increase the capacity of developing countries to adapt to the negative impacts of climate change. But historically, increased economic development and the corresponding increase in energy use have also led to increased emissions of greenhouse gases. The challenge of addressing climate change is to break the link between economic development and greenhouse gas emissions. In this way, climate change is fundamentally a sustainable development issue.

Figure I-2. **Carbon dioxide in the atmosphere, Records from Mauna Loa, Hawaii (in parts per million by volume) show how $CO_2$ concentrations in the atomspere have increased since accurate records began.**




*Source:* Keeling and Whorf 2001 in Global Environment Outlook 3 (UNEP/Earthscan Publication 2002)

## THE MAIN GREENHOUSE GASES

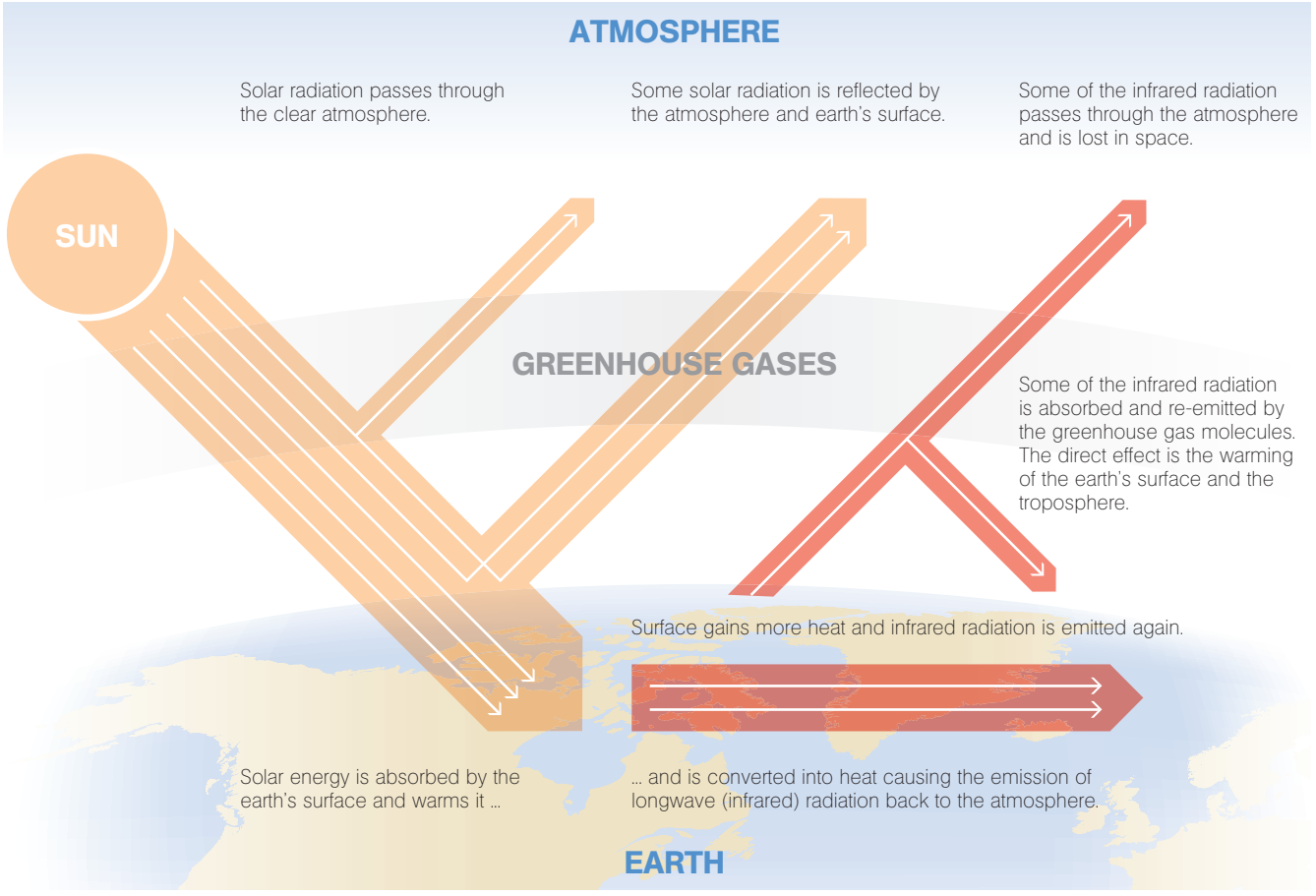
The Convention's provisions concern all greenhouse gases not covered by the 1987 Montreal Protocol to the United Nations Convention on Protection of the Ozone Layer. The focus of the Kyoto Protocol, however, is on the following six:

- Carbon dioxide ($CO_2$)
- Methane ($CH_4$)
- Nitrous oxide ($N_2O$)
- Hydrofluorocarbons (HFCs)
- Perfluorocarbons (PFCs)
- Sulphur hexafluoride ($SF_6$)

The first three are estimated to account for 50, 18 and 6 per cent, respectively, of the overall global warming effect arising from human activities. Although these gases are naturally occurring, their emissions have increased dramatically over the past two centuries due to human activities. $CO_2$ is produced in large quantities from the consumption of energy from burning fossil fuels, and deforestation. $CH_4$ and $N_20$ emissions are produced mainly from agricultural activities. The HFCs and PFCs are used as replacements for ozone-depleting substances such as chlorofluorocarbons (CFCs) currently being phased out under the Montreal Protocol. $SF_6$ is used in some industrial processes and in electric equipment.

The relative level and impact of the six greenhouse gases is compared using their respective global warming potentials (GWP). A GWP is a measure, defined by the IPCC, of the relative effect of a substance in warming the atmosphere over a given period (100 years in the case of the Kyoto Protocol), compared with a value of one for carbon dioxide. The IPCC Fourth Assessment report lists methane's GWP as 25.

Figure I-3. **The greenhouse effect**




*Source:* Okanagan University College in Canada, Department of Geography; United States Environmental Protection Agency (EPA), Washington; Climate change 1995, The science of climate change, constribution of working group 1 to the second assessment report of the Intergovermental Panel on Climate Change, UNEP and WMO, Cambridge University Press, 1996. GRID Arendal.

# II. BACKGROUND

Scientific evidence of human interference with the climate first emerged in the international public arena in 1979 at the First World Climate Conference (see timelines). As public awareness of environmental issues continued to increase in the 1980s, governments grew even more concerned about climate issues. In 1988 the United Nations General Assembly adopted resolution 43/53, proposed by the Government of Malta, urging: "... protection of global climate for present and future generations of mankind."

In the same year, the governing bodies of the World Meteorological Organization and of the United Nations Environment Programme created a new body, the Intergovernmental Panel on Climate Change, to marshal and assess scientific information on the subject. In 1990 the IPCC issued its First Assessment Report, which confirmed that the threat of climate change was real. The Second World Climate Conference, held in Geneva later that year, called for the creation of a global treaty. The General Assembly responded by passing resolution 45/212, formally launching negotiations on a convention on climate change, to be conducted by an Intergovernmental Negotiating Committee (INC).

**Convention Timeline**

2007 DEC: **COP 13 and CMP 3 (Bali, Indonesia)**
SEP: **High-level Event on Climate Change, UN Headquarters (New York, USA)**

2006 NOV: **COP 12 and COP/MOP 2 (Nairobi, Kenya)**
**Nairobi Work Programme on Adaption**

2005 NOV/DEC: **COP 11 and COP/MOP 1 (Montreal, Canada)**
FEB: **Entry into force of Kyoto Protocol**

2004 DEC: **COP 10 (Buenos Aires, Argentina)**
**Buenos Aires Programme of Work on Adaption and Response Measures**

2002 OCT/NOV: **COP 8 (New Delhi, India) Delhi Decleration**
AUG/SEP: **Progress since 1992 reviewed at World Summit on Sustainable Development**

2001 OCT/NOV: **COP 7 (Marrakesh, Morocco),**
**Marrakesh Accords**
JUL: **COP 6 resumes (Bonn, Germany),**
**Bonn Agreements**
APR: **IPCC Third Assessment Report**

2000 NOV: **COP 6 (The Hague, Netherlands),**
**Talks based on the Plan break down**

1998 NOV: **COP 4 (Buenos Aires, Argentina),**
**Buenos Aires of Plan of Action**

1997 DEC: **COP 3 (Kyoto, Japan), Kyoto Protocol adopted**

1995 MAR/APR: **COP 1 (Berlin, Germany), Berlin Mandate**

1994 MAR: **Convention enters into force**

1992 JUN: **Convention opened for for signature at Earth Summit**

1992 MAY: **INC adopts UNFCCC text**

1991 **First meeting of the INC**

1990 **IPCC and second WCC call for global treaty on climate change**
SEP: **United Nations General Assembly negotiations on a framework convention**

1988 **IPCC established**

1979 **First World Climate Conference (WCC)**

## THE CONVENTION TAKES OFF

The INC first met in February 1991 and its government representatives adopted the United Nations Framework Convention on Climate Change, after just 15 months of negotiations, on 9 May 1992. At the Rio de Janeiro United Nations Conference on Environment and Development (or Earth Summit) of June 1992, the new Convention was opened for signature. It entered into force on 21 March 1994. Thirteen years later, the Convention had been joined by 191 States and the European Community. This almost worldwide membership makes the Convention one of the most universally supported of all international environmental agreements. For a full checklist, turn to pages 22 and 23.

Since it entered into force, Parties to the Convention – those countries that have ratified, accepted, approved, or acceded to the treaty – have met annually at the Conference of the Parties, known informally as the COP. They meet to foster and monitor its implementation and continue negotiations on how best to tackle climate change. Successive decisions taken by the COP at its sessions now make up a detailed set of rules for practical and effective implementation of the Convention.

Even as they adopted the Convention, however, governments were aware that its provisions would not be sufficient by themselves to tackle climate change in all its aspects. At the first Conference of the Parties (COP 1), held in Berlin, Germany in early 1995, a new round of talks was launched to discuss firmer, more detailed commitments for industrialized countries, a decision known as the Berlin Mandate.

## THE KYOTO PROTOCOL EVOLVES

In December 1997, after two and a half years of intensive negotiations, a substantial extension to the Convention that outlined legally binding commitments to emissions cuts was adopted at COP 3 in Kyoto, Japan. This Kyoto Protocol sketched out basic rules, but did not specify in detail how they were to be applied. It also required a separate, formal process of signature and ratification by governments before it could enter into force.

A fresh round of negotiations launched in Buenos Aires, Argentina at COP 4 in November 1998 linked negotiations on the Protocol's rules to implementation issues – such as finance and technology transfer – under the umbrella of the Convention. In July 2001. Governments struck a political deal – the Bonn Agreements – signing off the controversial aspects of the Buenos Aires Plan of Action. A third report from the IPCC, meanwhile, improved the climate for negotiations by offering the most compelling scientific evidence so far presented, of a warming world.

At COP 7, held a few months later in Marrakesh, Morocco, negotiators built on the Bonn Agreements and brought a major negotiating cycle to a close by adopting a broad package of decisions. The *Marrakech Accords* spelt out more detailed rules for the Protocol as well as advanced prescriptions for implementing the Convention and its rules. These rules were further elaborated by subsequent decisions at COP 8, 9 and 10.

The Protocol could only enter into force after at least 55 Parties to the Convention had ratified it, including enough industrialized countries listed in the Convention's Annex I to encompass 55 per cent of that group's carbon dioxide emissions in 1990. The first Parties ratified the Protocol in 1998. With the ratification by the Russian Federation on 18 November 2004, the prescribed 90-day countdown was set in motion: The Kyoto Protocol entered into force on 16 February 2005.

# III. THE CONVENTION

The Convention divides countries into three main groups with differing commitments:

ANNEX I Parties include the industrialized countries that were members of the OECD (Organisation for Economic Co-operation and Development) in 1992, plus countries with economies in transition (the EIT Parties), including the Russian Federation, the Baltic States, and several Central and Eastern European States. For countries currently listed under Annex I, see table page 15.)

A requirement that affects only Annex I Parties is that they must adopt climate change policies and measures with the aim of reducing their greenhouse gas emissions to 1990 levels by the year 2000. This provision obliges them to set an example of firm resolve to deal with climate change. The Convention grants EIT Parties "flexibility" in implementing commitments, on account of recent economic and political upheavals in those countries. Several EIT Parties have exercised this flexibility to select a base year other than 1990 against which to measure their emission limitation efforts, to take account of intervening economic changes that led to big cuts in emissions.

ANNEX II Parties consist of the OECD members of Annex I, but not the EIT Parties. They are required to provide financial resources to enable developing countries to undertake emissions reduction activities under the Convention and to help them adapt to adverse effects of climate change. In addition, they have to "take all practicable steps" to promote the development and transfer of environmentally friendly technologies to EIT Parties and developing countries. Funding provided by Annex II Parties is channelled mostly through the Convention's financial mechanism.

NON-ANNEX I Parties – as they are termed for ease of reference – are mostly developing countries (see pages 22 – 23 for a full list of all Parties to the Convention). Certain groups of developing countries are recognized by the Convention as being specially vulnerable to the adverse impacts of climate change, including countries with low-lying coastal areas and those prone to desertification and drought. Others (such as countries that rely heavily on income from fossil fuel production and commerce) feel more vulnerable to the potential economic impacts of climate change response measures.

The Convention emphasizes activities that promise to answer the special needs and concerns of these vulnerable countries, such as investment, insurance and technology transfer. The 48 Parties classified as least developed countries (LDCs) by the United Nations are given special consideration under the Convention on account of their limited capacity to respond to climate change and adapt to its adverse effects. Parties are urged to take full account of the special situation of LDCs when considering funding and technology transfer activities.

**Countries included in Annex I**

| | |
|---|---|
| Australia | Lichtenstein |
| Austria | Lithuania* |
| Belarus* | Luxembourg |
| Belgium | Monaco |
| Bulgaria* | New Zealand |
| Canada | Norway |
| Croatia* | Poland* |
| Czech Republic* | Portugal |
| Demark | Romania* |
| Estonia* | Russian Federation* |
| European Community | Slovakia* |
| Finland | Slovenia* |
| France | Spain |
| Germany | Sweden |
| Greece | Switzerland |
| Hungary* | The Netherlands |
| Iceland | Turkey |
| Ireland | Ukraine* |
| Italy | United Kingdom of Great Britain and Northern Ireland |
| Japan | |
| Latvia* | United States of America |

*Countries with economies in transition (EIT Parties)

## COMMITMENTS

All Parties to the Convention – those countries that have ratified, accepted, approved, or acceded to it – are subject to general commitments to respond to climate change. They agree to compile an inventory of their greenhouse gas emissions, and submit reports – known as national communications – on actions they are taking to implement the Convention. To focus such actions, they must prepare national programmes containing:

- Climate change mitigation measures, i.e. measures to control GHG emissions
- Provisions for developing and transferring environmentally friendly technologies
- Provisions for sustainably managing carbon 'sinks' (a term applied to forests and other ecosystems that can remove more greenhouse gases from the atmosphere than they emit)
- Preparations to adapt to climate change
- Plans for climate research, observation of the global climate system and data exchange
- Plans to promote education, training and public awareness relating to climate change.

## INSTITUTIONS

The supreme body of the Convention is its *Conference of the Parties* (COP). It meets every year to review the implementation of the Convention, adopt decisions to further develop the Convention's rules, and negotiate new commitments. Two subsidiary bodies meet at least twice a year to steer preparatory work for the COP:

- *The Subsidiary Body for Scientific and Technological Advice* (SBSTA) provides advice to the COP on matters of science, technology and methodology, including guidelines for improving standards of national communications and emission inventories.
- *The Subsidiary Body for Implementation* (SBI) helps to assess and review the Convention's implementation, for instance by analysing national communications submitted by Parties. It also deals with financial and administrative matters.

## SECRETARIAT SERVICES

A secretariat staffed by international civil servants and hosted since 1996 by Germany in Bonn supports all institutions involved in the climate change process, particularly the COP, the subsidiary bodies and their Bureaux. Its mandate is to make arrangements for the sessions of the Convention bodies, to help Parties fulfil their commitments, to compile and disseminate data and information, and to confer with other relevant international agencies and treaties.

## PARTNERSHIPS

The Convention's business is interwoven with that of other international organizations that work towards sustainable development. The IPCC is a crucial source of information on climate change. At five-year intervals it publishes comprehensive progress reports on the state of climate change science. The IPCC's Fourth Assessment Report is scheduled to be published in 2007. It also prepares Special Reports or Technical Papers on specific issues in response to requests from the COP or SBSTA. The IPCC's work on methodologies has also played a major part in the process of developing common guidelines for Parties to compile their inventories of greenhouse gases

The Global Environment Facility (GEF) currently operates the Convention's financial mechanism, which channels funds to developing countries on a grant or loan basis. It was established in 1991 to fund developing country projects that have global environmental benefits, not only in the area of climate change but also in biodiversity, protection of the ozone layer and international waters. The COP provides regular policy guidance to the GEF on its climate change policies, programme priorities and eligibility criteria for funding, while the GEF reports on its climate change work to the COP every year.

To make the most of potential synergies and to avoid duplication, areas where the Conventions agendas are liable to overlap with other environmental issues receive special attention. A Joint Liaison Group was set up in 2001 by the Secretariats of the three so-called 'Rio Conventions' – UNFCCC, the CBD (Convention on Biological Diversity) and UNCCD (United Nations Convention to Combat Desertification). It enables them to share insights about their work and methods, identify potential joint actions and anticipate any potential problems.

Input may be sought on specific issues, for instance from the UN Food and Agriculture Organization (FAO) on matters related to land use, land-use change and forestry, or the International Civil Aviation Organization on methodologies relating to fuel used for international transportation. The SBSTA also works with the bodies of the Montreal Protocol on potential synergies and conflicts between efforts to combat climate change and measures to curb ozone layer depletion, as some ozone-depleting substances and some of their replacements also happen to be greenhouse gases.

The secretariat cooperates with many UN organizations/ agencies, such as the United Nations Environment Programme (UNEP) and the United Nations Development Programme (UNDP) and World Meteorological Organization (WMO), regarding activities related to vulnerability and adaptation, technology transfer, capacity building and climate change research. The secretariat also cultivates links with national or international non-governmental organizations (NGOs), trade associations and various other non-statutory bodies.

The UNFCCC secretariat plays an important role in facilitating the national and international response to climate change, but the core work of implementation is the responsibility of other UN agencies, notably UNEP, UNDP and the World Bank. In their role as implementing agencies for the GEF, they assist developing countries to identify and implement activities to respond to climate change. Several other regional development banks and specialized UN agencies support the three implementing agencies.

## REPORTING

Central to the intergovernmental process of the COP is an imperative to share, communicate and respond to information by way of national communications. These reports provide the means by which the COP monitors progress made by Parties in meeting their commitments and in achieving the Convention's ultimate objectives. For the purposes of transparency and comparability in reporting, the COP provides guidelines for Parties to use when reporting information in their national communications. The COP uses this information to assess and review the implementation of the Convention and assess the overall aggregated effect of steps taken by Parties. Since 1995, the guidelines have been successively revised and improved in the light of Parties' experience of putting them to use. For Annex I Parties, guidelines for preparing national communications were last revised in 1999, those for emissions inventories in 2005. Guidelines for non-Annex I Parties were changed in 2002.

Annex I Parties must report more often and in more detail. Non-Annex I Parties normally depend on receiving funding from the GEF to cover reporting costs. Non-Annex I Parties are differentiated into two groups; the LDCs and other developing country Parties to the Convention. Initial national communications of non-Annex I Parties are required to be presented within three years of the entry into force of the Convention for that Party, or of the date when financial resources become available. LDCs, however, can do so "at their discretion". The deadlines for submission of subsequent national communications by all Parties are decided by the COP.

## HOW ANNEX I COUNTRIES REPORT

A first national communication was due from each Annex I Party within six months of the entry into force of the Convention for that Party. The second national communication fell on 15 April 1997 (or 15 April 1998 for those EIT Parties, for which the date of entry into force fell a year later) and the third on 30 November 2001. The deadline for the fourth submission was 1 January 2006. Annex I Parties must also submit to the secretariat an annual inventory of their greenhouse gas emissions and removals by 15 April each year, including data on emissions for 1990 (or another applicable base year for EIT Parties), and for the years between this base year and the last-but-one year prior to the year of the submission. Inventories due in April 2006, for instance, had to show emissions data for the year 2004.

## BUNKER FUELS

Emissions from aviation and marine bunker fuels used in international transport are reported separately from the overall emission totals of Parties under the Convention, and are treated differently. The Protocol requires Parties to work with the International Civil Aviation Organization (ICAO) and the International Maritime Organization (IMO) to control emissions from these sources. A separate decision taken on adoption of the Kyoto Protocol urges the SBSTA to continue ongoing work on how best to track and classify bunker fuel emissions.

## REVIEW PROVISIONS

National communications and greenhouse gas inventories from Annex I Parties are subject to review by international teams of independent experts. The aim is to provide a thorough technical assessment of steps taken by each Party to implement its commitments. Expert review teams are selected from a roster of experts nominated by Parties and coordinated by the secretariat. The results of their work are published in reports available on the secretariat web site <unfccc.int>.

National communications are typically reviewed through in-country visits and desk reviews. A separate in-depth review report is provided for each Party. In addition, the secretariat prepares compilation and synthesis reports on national communications.

Since 2003, greenhouse gas inventories from all Annex I Parties have been reviewed annually. The review is conducted in three stages: an initial check of the completeness of the submissions; a synthesis and assessment, which compares inventory information across Parties; and an individual review of the methods and data used to prepare each inventory.

## HOW NON-ANNEX I PARTIES REPORT

Non-Annex I Parties are not required to submit a separate annual greenhouse gas inventory, and their national communications are not subject to in-depth reviews. As of January 2007, 132 Parties have submitted their initial national communication. Three Parties have submitted a second national communication and one Party has already submitted a third. Most of these communicationscover most gases by sectors, making it possible to build up a much more complete picture of emissions across the world. Many contained estimates of both emissions and removals. The latest UNFCCC guidelines only require non-Annex I Parties to estimate GHG inventories for the year 1994 for the initial national communication, or alternatively 1990, and for the second national communication for the year 2000. However, by 2005, 36 countries had presented data for two or more years. Despite these encouraging trends, many developing countries still face reporting challenges, notably the LDCs, which in view of their lack of resources are not required to submit initial communications within a specified period. Even so, 44 of the 48 LDCs that are Parties to the Convention had submitted their national communications by January 2007.

## THE GREENHOUSE GAS DATABASE

To manage and blend the abundant flows of data emerging from reporting and review processes, the UNFCCC secretariat has developed a Greenhouse Gas Information System as the basis for the provision of information to the Conference of the Parties and for various types of data analysis. The database is continuously maintained to ensure the reliability of data. The most important information from the database is accessible to the public online at the GHG page on the UNFCCC website (http://unfccc.int/ghg_emissions_data/items/3800.php) where data on GHG emissions in various breakdowns (by sector, gas and year) can be viewed and downloaded.

## FUNDING

Since 1991, grants worth about US$ 2.3 billion have been provided from the GEF Trust Fund for action on climate change in developing countries. 8 per cent of this total was used to fund enabling activities for the preparation of national communications of non-Annex I Parties. Another US$ 6.9 billion was injected through co-financing from bilateral agencies, recipient countries and the private sector, making a total of US$ 8.2 billion. As part of the Marrakesh Accords, the COP advised the GEF to expand the scope of activities eligible for funding, such as work on adaptation and capacity-building.

The Accords also established three new funds. Two under the Convention and one under the Protocol. The funds are managed by the GEF:

- *A Special Climate Change Fund* that complements other funding mechanisms and exists to finance projects relating to capacity-building, adaptation, technology transfer, climate change mitigation and, for countries highly dependent on income from fossil fuels, economic diversification. As of January 2007, grants in the amount of US$ 38.9 million have already been allocated for projects.
- *A Least Developed Countries Fund* which supports implementation of national adaptation activities in LDCs. As of August 2006, US$ 11.6 million have been allocated for initial activities in 44 countries, and an additional US$ 89.6 million has been pledged to support project implementation.

In addition, an Adaptation Fund will finance practical adaptation projects and programmes in developing countries, and support capacity-building activities. It will be funded from the adaptation levy on CDM projects (see page 29). In addition Annex I Parties can make contributions to it. Because the COP/MOP has not yet taken a decision on the institutional arrangements for the fund, the adaptation levy is currently held as CERs in the CDM registry. As of January, 2007 over five hundred and sixty thousand CERs have been set aside towards this fund. At a price of US$ 20 per tonne, which is a conservative estimate of the expected price of CERs during the Kyoto Protocol's commitment period, this fund has the potential to generate over US$ 11.2 million for adaptation activities.

## ADAPTATION TO CLIMATE CHANGE

How should the Convention recognise and respond to the vulnerability of countries, particularly developing countries, to the impacts of climate change? Since COP 7, political emphasis on adaptation to climate change steadily has increased to complement work on mitigation, the main subject of negotiations until then. Emphasis on adaptation culminated at COP 11 in a mandate for the SBSTA to undertake a five year work-programme on the scientific, technical and socio-economic aspects of impacts, vulnerability and adaption to climate change.

At COP 12, the Nairobi Work Programme was elaborated. The goal of the work programme is to enhance Parties' understanding and assessment of the impacts, vulnerabilities to, and adaptation to climate change and enable them to make informed decisions on practical adaptation measures. To this end, the work programme promotes the collection, development and sharing of methodologies, data, tools and technologies, in particular related to:

- Impact and vulnerability assessments;
- Data collection and analysis, including through the enhancement of systematic observation and monitoring networks related to historic and projected climate change;
- Modelling, in particular related to general circulation models and their downscaling to regional and national levels;
- Adaptation assessment, planning and actions.

In its early stages the work programme will synthesize and disseminate and identify any gaps in existing information and tools, through expert meetings and workshops drawing on wide range of organizations, experts and stakeholders. Based on these outcome of these initial activities, the SBSTA will decide the next steps under the work programme.

## ADVERSE EFFECTS AND RESPONSE MEASURES

The Convention calls upon Parties to consider the specific needs and concerns of developing countries arising from the adverse effects of climate change or the impact of response measures, including countries that are particularly vulnerable to climate change, such as small island countries, and countries whose economies are highly dependent on fossil fuels. The Convention also gives special attention to the situation of the least developed countries (LDCs). At COP 10, Parties made significant steps forward in each of these areas with the adoption of the Buenos Aires programme of work.

In relation to the impact of the implementation of response measures, the range of activities under the Convention cover issues like:

- Economic diversification
- Developing and transferring more climate-friendly technologies, such as non-energy uses of fossil fuels, advanced fossil fuel technologies and carbon capture or storage
- Expanding the use of climate-friendly energy sources
- Capacity-building.

The GEF also provides funding for technical assistance and capacity-building to countries in these areas through the Special Climate Change Fund.

The COP has put much emphasis on support for LDCs. Many LDCs already need help in adapting to climate change but are ill-equipped to prepare full national communications that promptly detail those needs. Instead, LDCs are encouraged to prepare and submitnational adaptation programmes of action (NAPAs) that open the way for LDCs to inform donors of their vulnerability to climate change and of their adaptation needs. The LDC Expert Group, composed of 12 members with wide-ranging experience in climate change and sustainable development, provides technical advice to LDCs in the preparation and implementation of their NAPAs. As of January 2007, nine LDCs had submitted NAPAs. Several more have NAPAs under preparation.

Through the NAPA process, LDCs assess their vulnerability to climate change, and identify their priorities for adaptation. The *Least Developed Country Fund* (see page 19) provides funds for the implementation of adaptation activities in LDCs, based on the priorities identified in that Party's NAPA.

## BUILDING CAPACITY

Developing countries, countries with economies in transition (EIT Parties) and LDCs need help to build their capacities to respond to climate change. Areas where this need is acute include improving and transferring technology, preparing national communications and drawing on the financial mechanism. A Consultative Group of Experts (CGE) was established during COP 5 in 1999 to look into ways to improve national communications prepared by non-Annex I Parties and at COP 7 this Group was given an additional mandate to study problems and constraints hindering their completion.

In the Marrakesh Accords, governments agreed on two new frameworks for capacity-building, one for developing countries and another for EIT Parties. These frameworks enable both groups to implement the Convention and participate to the full in the Kyoto Protocol process. Part of the guidance the frameworks offer to the GEF and others is the advice that capacity-building should be country-driven, involve learning-by-doing and build on existing national and bilateral activities. They also call on developing countries and EIT Parties to continue to declare specific needs and priorities, while interacting with one another to share lessons and experiences. Annex II Parties are expected to provide additional financial and technical resources, and all Parties should improve on existing activities. Progress on all these fronts is monitored by the SBI.

## TECHNOLOGY TRANSFER

Adopting environmentally friendly technologies and sustainable development approaches should enable developing countries to avoid wrong turns taken by industrial countries in the past, before the risks were known. The secretariat supports Parties' efforts in this direction mainly by synthesizing and sharing information, such as assessments of the technology needs of developing countries and information on technology transfer activities of Annex II Parties and others. It offers technical papers on such topics as adaptation technologies and terms of transfer.

It has also developed a technology information system (TT: CLEAR, accessible on the secretariat web site), including an inventory of environmentally friendly technologies. Following a two-year consultative process, a framework for 'meaningful and effective actions' was agreed as part of the Marrakesh Accords covering the following areas:

- Assessing technology needs
- Establishing a technology information system
- Creating enabling environments for technology transfer
- Providing capacity-building for technology transfer
- Funding to implement the framework.

Funding for this work is available through the GEF's climate change focal area programme andthrough the Special Climate Change Fund. An Expert Group on Technology Transfer (EGTT) has been established to oversee the implementation of the framework and to identify ways of advancing activities in this area. Composed of 20 members, the group meets twice a year and reports to the SBSTA.

**Country checklist**

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|---|---|---|---|---|---|---|
| Afghanistan | × | | | | | |
| Albania | × | × | | | | |
| Algeria | × | × | | | | |
| Andorra | | | | | | |
| Angola | × | × | | | | |
| Antigua and Barbuda | × | × | | | | |
| Argentina | × | × | | | | |
| Armenia | × | × | | | | |
| Australia | × | | ● | | ● | ○ |
| Austria | × | × | ● | | ● | ○ |
| Azerbaijan | × | × | | | | |
| Bahamas | × | × | | | | |
| Bahrain | × | × | | | | |
| Bangladesh | × | × | | | | |
| Barbados | × | × | | | | |
| Belarus | × | × | | ○ | | |
| Belgium | × | × | ● | | ● | ○ |
| Belize | × | × | | | | |
| Benin | × | × | | | | |
| Bhutan | × | × | | | | |
| Bolivia | × | × | | | | |
| Bosnia and Herzegovina | × | × | | | | |
| Botswana | × | × | | | | |
| Brazil | × | × | | | | |
| Brunei Darussalam | × | | | | | |
| Bulgaria | × | × | | ○ | | ○ |
| Burkina Faso | × | × | | | | |
| Burundi | × | × | | | | |
| Cambodia | × | × | | | | |
| Cameroon | × | × | | | | |
| Canada | × | × | ● | | ● | ○ |
| Cape Verde | × | × | | | | |
| Central African Republic | × | | | | | |
| Chad | × | | | | | |
| Chile | × | × | | | | |
| China | × | × | | | | |
| Colombia | × | × | | | | |
| Comoros | × | | | | | |
| Congo | × | × | | | | |
| Cook Islands | × | × | | | | |
| Costa Rica | × | × | | | | |
| Cote d'Ivoire | × | × | | | | |
| Croatia | × | × | | ○ | | ○ |
| Cuba | × | × | | | | |
| Cyprus | × | × | | | | |
| Czech Republic | × | × | | ○ | | ○ |
| Democratic People's Republic of Korea | × | × | | | | |
| Democratic Republic of the Congo | × | × | | | | |
| Denmark | × | × | ● | | ● | ○ |
| Djibouti | × | × | | | | |
| Dominica | × | × | | | | |
| Dominican Republic | × | × | | | | |
| Ecuador | × | × | | | | |
| Egypt | × | × | | | | |
| El Salvador | × | × | | | | |
| Equatorial Guinea | × | × | | | | |
| Eritrea | × | × | | | | |
| Estonia | × | × | | ○ | | ○ |
| Ethiopia | × | × | | | | |
| Fiji | × | × | | | | |
| Finland | × | × | ● | | ● | ○ |
| France | × | × | ● | | ● | ○ |
| Gabon | × | × | | | | |
| Gambia | × | × | | | | |
| Georgia | × | × | | | | |
| Germany | × | × | ● | | ● | ○ |
| Ghana | × | × | | | | |
| Greece | × | × | ● | | ● | ○ |
| Grenada | × | × | | | | |
| Guatemala | × | × | | | | |
| Guinea | × | × | | | | |
| Guinea-Bissau | × | × | | | | |
| Guyana | × | × | | | | |
| Haiti | × | × | | | | |
| Holy See | | | | | | |
| Honduras | × | × | | | | |
| Hungary | × | × | | ○ | | ○ |
| Iceland | × | × | ● | | ● | ○ |
| India | × | × | | | | |
| Indonesia | × | × | | | | |
| Iran (Islamic Republic of) | × | × | | | | |
| Iraq | | | | | | |
| Ireland | × | × | ● | | ● | ○ |
| Israel | × | × | | | | |
| Italy | × | × | ● | | ● | ○ |
| Jamaica | × | × | | | | |
| Japan | × | × | ● | | ● | ○ |
| Jordan | × | × | | | | |
| Kazakhstan | × | | | | | |
| Kenya | × | × | | | | |
| Kiribati | × | × | | | | |
| Kuwait | × | × | | | | |
| Kyrgyzstan | × | × | | | | |
| Lao People's Democratic Republic | × | × | | | | |
| Latvia | × | × | | ○ | | ○ |
| Lebanon | × | × | | | | |
| Lesotho | × | × | | | | |
| Liberia | × | × | | | | |
| Libyan Arab Jamahiriya | × | × | | | | |
| Lichtenstein | × | × | ● | | | ○ |
| Lithuania | × | × | | ○ | | ○ |
| Luxembourg | × | × | ● | | ● | ○ |

**Country checklist** (continued)

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Madagascar | × | × | | | | | Sao Tome and Principe | × | | | | | | |
| Malawi | × | × | | | | | Saudi Arabia | × | × | | | | | |
| Malaysia | × | × | | | | | Senegal | × | × | | | | | |
| Maldives | × | × | | | | | Serbia | × | × | | | | | |
| Mali | × | × | | | | | Seychelles | × | × | | | | | |
| Malta | × | × | | | | | Sierra Leone | × | × | | | | | |
| Marshall Islands | × | × | | | | | Singapore | × | × | | | | | |
| Mauritania | × | × | | | | | Slovakia | × | × | | ○ | | | |
| Mauritius | × | × | | | | | Slovenia | × | × | | ○ | | ○ | |
| Mexico | × | × | | | | | Salomon Islands | × | × | | | | | |
| Micronesia (Federated States of) | × | × | | | | | Somalia | | | | | | | |
| Monaco | × | × | ● | | ● | ○ | South Africa | × | × | | | | | |
| Mongolia | × | × | | | | | Spain | × | × | ● | | ● | ○ | |
| Montenegro | × | × | | | | | Sri Lanka | × | × | | | | | |
| Morocco | × | × | | | | | Sudan | × | × | | | | | |
| Mozambique | × | × | | | | | Suriname | × | × | | | | | |
| Myanmar | × | × | | | | | Swaziland | × | × | | | | | |
| Namibia | × | × | | | | | Sweden | × | × | ● | | ● | ○ | |
| Nauru | × | × | | | | | Switzerland | × | × | ● | | ● | ○ | |
| Nepal | × | × | | | | | Syrian Arab Republic | × | × | | | | | |
| New Zealand | × | × | ● | | ● | ○ | Tajikistan | × | | | | | | |
| Nicaragua | × | × | | | | | Thailand | × | × | | | | | |
| Niger | × | × | | | | | The Former Yugoslav Republic of Macedonia | × | × | | | | | |
| Nigeria | × | × | | | | | The Netherlands | × | × | ● | | ● | ○ | |
| Niue | × | × | | | | | Timor-Leste | × | | | | | | |
| Norway | × | × | ● | | ● | ○ | Togo | × | × | | | | | |
| Oman | × | × | | | | | Tonga | × | | | | | | |
| Pakistan | × | × | | | | | Trinidad and Tabago | × | × | | | | | |
| Palau | × | × | | | | | Tunesia | × | × | | | | | |
| Panama | × | × | | | | | Turkey | × | | ● | | | | |
| Papua New Guinea | × | × | | | | | Turkmenistan | × | × | | | | | |
| Paraguay | × | × | | | | | Tuvalu | × | × | | | | | |
| Peru | × | × | | | | | Uganda | × | × | | | | | |
| Philippines | × | × | | | | | Ukraine | × | × | | ○ | | ○ | |
| Poland | × | × | ● | | ● | ○ | United Arab Emirates | × | × | | | | | |
| Portugal | × | | ● | | ● | ○ | United Kingdom of Great Britain and Nothern Ireland | × | × | ● | | ● | ○ | |
| Qatar | × | × | | | | | United Republic of Tanzania | × | × | | | | | |
| Republic of Korea | × | × | | | | | United States of America | × | | ● | | ● | ○ | |
| Republic of Moldova | × | × | | | | | Uruguay | × | × | | | | | |
| Romania | × | × | | ○ | | ○ | Uzbekistan | × | × | | | | | |
| Russian Federation | × | × | | ○ | | ○ | Vanuatu | × | × | | | | | |
| Rwanda | × | × | | | | | Venezuela | × | × | | | | | |
| Saint Kitts and Nevis | × | | | | | | Viet Nam | × | × | | | | | |
| Saint Lucia | × | × | | | | | Yemen | × | × | | | | | |
| Saint Vincent and the Grenadines | × | × | | | | | Zambia | × | × | | | | | |
| Samoa | × | × | | | | | Zimbabwe | × | | | | | | |
| San Marino | × | | | | | | European Community | × | × | ● | | ● | ○ | |

● Annex I
○ Annex I EIT*
● Annex II
○ Annex B (Kyoto Protocol)
× Ratified** UNFCCC
× Ratified** the Kyoto Protoco

* Annex I country with economy in transition.
**Indicates country has ratified, or acceded to, or accepted, or approved the treaty in question.

The status of retifaction is subject to change. For the latest update consult <unfccc.int>.

## RESEARCH

All Parties under the Convention commit themselves to cooperative activities on research and observation of the global climate system, and to education, training and public awareness efforts relating to climate change. The Convention's work on research and observation is carried out in cooperation with the GCOS secretariat, together with other agencies that share in the World Meteorological Organization's Climate Agenda. Common concerns include the deterioration of climate observing systems in many regions and the need to increase participation by developing countries in climate observation networks. The GCOS secretariat has held a number of regional workshops and other activities and periodically reports to the SBSTA on its work. Progress was made at COP 5, when Parties adopted guidelines for reporting global climate observation activities in national communications. Following a request of COP 9, GCOS is implementing a 10 year plan to coordinate the activities of national, regional and international programmes in support of the needs of the Convention. The Convention's research and observation needs are kept under review by the SBSTA.

## INVOLVING THE PUBLIC

Education, training, public awareness, public participation and public access to information are essential for gaining public support for measures to combat and cope with climate change. Article 6 of the Convention seeks to spur action at national level, as well as cooperation at regional and international levels, to provide the education, training and public awareness needed to understand and deal with climate change impacts.

At COP 8, in New Delhi, a five-year work programme was adopted, aimed at integrating Article 6 activities into existing sustainable development and climate change strategies. It also set out to build on actions relating to the Convention's technology transfer and capacity-building frameworks. Named the New Delhi Work Programme, it defines the scope of possible activities at the national and international levels, encourages the spread and exchange of information and promotes partnership and networking efforts. International partnerships and synergies figure prominently in the work programme. It recognizes the importance of non-governmental and inter-governmental organisations to efforts under Article 6 and encourages them to gear their own activities to this agenda.

The secretariat was called on to develop a clearing house to facilitate access to and exchange of information resources on public education, outreach and training. The clearing house, called the Climate Change Information Network (CC: iNet) draws on information contributed by partner organizations and by Parties.

# IV. THE KYOTO PROTOCOL

The processes prescribed in the Convention have evolved apace since it was adopted in 1992. The foregoing pages describe moves made towards implementing its provisions, which have boosted the world community's response to climate change in many ways. The Convention continues to serve as the focus for intergovernmental action to combat climate change. It also remains the hub for critical work on reporting, finance, technology transfer and other baseline issues that form the backbone of the climate change process.

A parallel advance has been the adoption in 1997 of the Kyoto Protocol with its legally binding emissions targets for industrialized countries and subsequent development of the rules for its implementation.

Only Parties to the Convention can become Parties to the Protocol. The Kyoto Protocol shares the ultimate objective of the Convention to stabilize atmospheric concentrations of greenhouse gases at a level that will prevent dangerous interference with the climate system. In pursuit of this objective, the Kyoto Protocol builds upon and enhances many of the commitments already in place under the Convention:

- Each Annex I Party must undertake domestic policies and measures to reduce GHG emissions and to enhance removals by sinks. In implementing this commitment, each Annex I Party must strive to minimize any adverse impact of these policies and measures on other Parties, particularly developing country Parties.
- Annex I Parties must provide additional financial resources to advance the implementation of commitments by developing countries.
- Both Annex I and non-Annex I Parties must cooperate in the areas of:
- Development, application and diffusion of climate-friendly technologies;
- Research on and systematic observation of the climate system;
- Education, training, and public awareness of climate change;
- The improvement of methodologies and data for greenhouse gas inventories.

However, the Kyoto Protocol's most notable elements are its binding commitments on Annex I Parties to limit or reduce greenhouse gas emissions, and its innovative mechanisms to assist these Parties in meeting their emission commitments.

## EMISSION TARGETS AND ASSIGNED AMOUNTS

At the heart of the Protocol lie its legally binding emissions targets for Annex I Parties. These targets are listed in Annex B to the Protocol, which lists GHG reduction or limitation targets for 38 developed countries and for the European Community as a whole. The 15 member States of the European Community (prior to the EU expansion to 25 states in May 2004) agreed to redistribute their reduction targets among themselves, forming the so-called "EU bubble".

Annex B emission targets are set relative to each Party's GHG emissions in a specific reference year, called the base year. For most Parties, the base year is 1990. However, some EIT Parties, have another base year. In addition, any Party may choose a base year of either 1990 or 1995 for its emissions of HFCs, PFCs and SF6 (see page 27). The emission target covers the six GHGs from sources and sectors listed in Annex A of the Protocol. Annex A excludes emissions and removals from the LULUCF sector, which are treated differently than emissions from the other sectors.

The Protocol establishes a specific time frame, called the commitment period, for achieving emission targets. A five-year period was preferred to a single target year as a way to smooth out annual fluctuations in emissions arising from unforeseen factors such as economic cycles or weather patterns. During the commitment period, each Annex I Party must ensure that its total GHG emissions from Annex A sources do not exceed its allowable level of emissions. The allowable level of emissions is called the Party's assigned amount. For the first commitment period (2008 – 2012), the assigned amount of each Party is calculated by multiplying the Party's base year GHG emissions from Annex A, by its emission target, by five (for the five years of the commitment period.) The resulting quantity is denominated in individual units called assigned amount units or AAUs. Each AAU represents an allowance to emit one metric tonne of carbon dioxide equivalent over the commitment period.

Unlike other multilateral environmental agreements, the Kyoto Protocol allows Annex I Parties to change the level of their allowed emissions over the commitment period through participation in the Kyoto Protocol mechanisms and enhancement of carbon sinks. Through these activities,

Parties may generate or acquire additional emission allowances, which are then added to the Party's assigned amount. Each of the mechanisms, and sink activities have a specific emission allowance associated with it, which are collectively referred to as Kyoto Protocol units and are subject to explicit rules for how they can be used.

## THE KYOTO MECHANISMS

The Kyoto Protocol broke new ground with three innovative mechanisms (joint implementation, the clean development mechanism and emissions trading) designed to boost the cost-effectiveness of climate change mitigation by opening ways for Parties to cut emissions, or enhance carbon 'sinks', more cheaply abroad than at home. Although the cost of limiting emissions or expanding removals varies greatly from region to region, the effect for the atmosphere is the same regardless where the action is taken. Even so, concerns have been voiced that the mechanisms could allow Parties to avoid taking climate change mitigation action at home, or could confer a 'right to emit' on Annex I Parties or lead to exchanges of fictitious credits, undermining the Protocol's environmental goals. The Marrakesh Accords sought to dispel such fears, asserting that the Protocol creates no 'right, title or entitlement' to emit. They call on Annex I Parties to implement domestic action to reduce emissions in ways that could help to narrow per capita differences between developed and developing countries, while pursuing the Convention's ultimate objective.

The Marrakesh Accords imposed no quantitative limits on the extent to which the mechanisms could be used to meet emissions targets. Annex I Parties were obliged, however, to provide information in their national communication showing that their use of the mechanisms is 'supplemental to domestic action' and that domestic policies and measures constitute 'a significant element' of efforts to meet commitments.

To be eligible to participate in the mechanisms, Annex I Parties must have ratified the Kyoto Protocol and must meet specific eligibility criteria, based on the methodological and reporting requirements related to GHG inventories and tracking of assigned amounts. These eligibility criteria help to ensure that an Annex I Party is accounting accurately for its emissions and assigned amount, so that use of the Kyoto mechanisms will not jeopardize the Party's ability to meet its emission commitment. Each Party's eligibility to participate in each of the Kyoto mechanisms will be determined as a normal outcome of reporting, review and compliance procedures under the Protocol.

Kyoto Protocol units acquired from another Party under the Kyoto mechanisms are added to an Annex I Party's assigned amount, whereas units transferred to another Annex I Party are subtracted from the Annex I Party's assigned amount.

## THE CLEAN DEVELOPMENT MECHANISM (CDM)

The CDM is a mechanism by which Annex I Parties can invest in emission reduction projects or afforestation or reforestation projects in developing countries and receive credit for the emission reductions or removals achieved. These projects contribute to sustainable development of the host country and generate emission allowances, called certified emission reductions (CERs) that can be used by the Annex I Party in meeting its emission target.

Investments in CDM projects are to be additional to the finance and technology transfer commitments of Annex II Parties under the Convention and the Kyoto Protocol and must not result in a diversion of official development assistance. The CDM is generating significant investment in developing countries, especially from the private sector, to enhance the transfer of environmentally friendly technologies and thus promote their sustainable development. Already, the CDM has resulted in a significant flow of resources to developing countries. The World Bank estimates that as of the third quarter of 2006, almost US$ 5.2 billion has been invested through the CDM.

CDM projects must have the approval of all Parties involved. This must be gained from designated national authorities set up by Annex I and non-Annex I Parties. Projects must lead to real, measurable and long-term climate benefits in the form of emission reductions or removals that are additional to any that would have occurred without the project. To demonstrate this, CDM projects must meet detailed requirements and procedures for registration, validation, verification, and certification to demonstrate that reductions or removals associated with the project are additional to what would otherwise occur in the absence of the project. The emission reductions or removals resulting from a CDM project must be calculated and monitored according to specific methodologies, including for project baselines (the starting point for measuring emissions and removals), and verified by designated operational entities.

Additional rules apply to afforestation and reforestation projects, which generate two special types of CERs called temporary certified emission reductions (tCERs) and long-term certified emission reductions (lCERs). Annex I Parties are limited in how much they may use CERs from

such 'sink' activities towards their targets – up to 1 per cent of the Party's emissions in its base year, for each of the five years of the commitment period.

Under the prompt start of the CDM, CERs may accrue from projects from the year 2000 onwards if they meet CDM requirements. The CDM Executive Board was elected at COP 7 and is guiding and overseeing practical arrangements of the CDM. Composed of 10 voting members, with 10 alternates, the Executive Board operates under the authority of the meeting of the Parties to the Kyoto Protocol. The Executive Board has defined procedures for accepting projects and encouraging the development of small-scale projects, notably for renewable energy and energy efficiency activities.

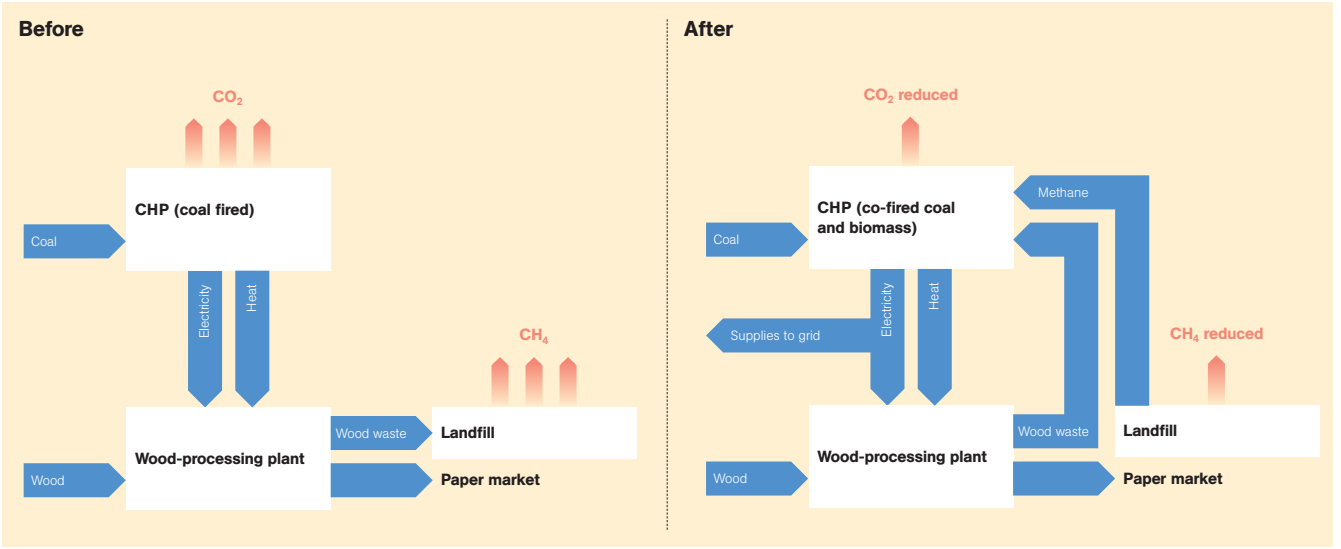
CDM projects must be based on appropriate, transparent and conservative baselines (the starting point for measuring emission reductions or removals) and must have in place a rigorous monitoring plan to collect accurate emissions data. These must be devised according to approved methodologies. If project participants wish to use a new methodology, it must first be authorized and registered by the Executive Board. The Board has accredited independent organizations, known as operational entities, to play a key role in the CDM project cycle (see page 30).

CDM projects are subject to a levy to fund adaptation projects. Under this levy, two per cent of the CERs generated by a project (a 'share of the proceeds') will be paid into a fund (see page 19) to help particularly vulnerable developing countries adapt to the adverse effects of climate change. Projects in LDCs are exempt from paying this share of the proceeds. Another small portion, yet to be determined, of the CERs from projects will be used to cover the CDM's administrative costs.

The CDM has evolved during its first years of operation. One early concern was that CDM projects were not equally distributed among non-Annex I Parties. To address this concern, the secretariat is cooperating with five other UN agencies United Nations Development Programme (UNDP), the United Nations Environment Programme (UNEP), the World Bank Group, and the African Development Bank to implement a capacity-building initiative to help developing countries, in particular those in Africa, to participate in and benefit from the CDM.

In addition, COP/MOP 2 agreed to allow project activities that are conducted under a policy programme to be registered as a single project. This development is expected to further expand the pool of CDM project activities, and to improve the efficiency of CDM operations.

Figure IV-5. **Multiple benefits**




The diagrams show a hypothetical example of a joint implementation project activity to retro-fit a wood-processing plant, involving recycling of wastes to power a combined heat and power plant. The new process not only reduces emissions at the CHP plant but also yields surplus electricity that can be sold to the public grid, replacing power generated by fossil burning and therefore reducing emissions outside the CHP and wood-processing plants.

*Source:* Climate Change Opportunities, *Refocus* magazine Sept/Oct 2002

## THE CDM PROJECT CYCLE

Participants must prepare a project design document, including a description of the baseline and monitoring methodology to be used, an analysis of environmental impacts, comments received from local stakeholders and a description of new and additional environmental benefits that the project is intended to generate. An operational entity will then review this document and, after providing an opportunity for public comment, decide whether or not to validate it. When a project is duly validated, the operational entity will forward it to the Executive Board for formal registration. Unless a participating Party or three Executive Board members request a review of the project, its registration becomes final after eight weeks. Once a project is running, it will be monitored by the participants. They will prepare a monitoring report, including an estimate of CERs generated by the project, and will submit it for verification by an operational entity. To avoid conflict of interest, this will be a different operational entity to that which validated the project. Following a detailed review of the project, which may include an onsite inspection, the operational entity will produce a verification report and, if all is well, will then certify the emission reductions as real. Unless a participating Party or three Executive Board members request a review within 15 days, the Board will issue the CERs and distribute them to project participants as requested. Finally, CERs generated by CDM projects will be subject to a levy known as the 'share of the proceeds'. Two per cent of the CERs from each project will be paid into the Adaptation Fund to help particularly vulnerable developing countries adapt to the adverse effects of climate change. Projects in LDCs are exempt from paying this share of the proceeds. Another per centage, yet to be determined, will be levied on projects to cover the CDM's administrative costs. In the meantime Parties have been urged to help finance these expenses by making voluntary contributions to a UNFCCC Trust Fund for Supplementary Activities.

## JOINT IMPLEMENTATION

Joint implementation is also a project-based mechanism. It allows Annex I Parties to implement projects that reduce emissions, or increase removals using sinks, in other Annex I countries. Emission reduction units (ERUs) generated by such projects can then be used by investor Annex I Parties to help meet their emissions targets. To avoid double counting, a corresponding subtraction is made from the host Party's assigned amount.

The term 'joint implementation' is convenient shorthand for this mechanism, although it does not appear in the Kyoto Protocol. In practice, joint implementation projects are most likely to take place in EIT countries, where there is generally more scope for cutting emissions at lower costs. Joint implementation projects must have the approval of all Parties involved and must lead to emission reductions or removals that are additional to any that would have occurred without the project. Projects such as reforestation schemes involving activities in the LULUCF sector must conform to the Protocol's wider rules on this sector and Annex I Parties are to refrain from using ERUs generated from nuclear facilities to meet their targets. Only projects starting from the year 2000 that meet these rules may be listed.

There are two approaches for verification of emission reductions under JI, commonly called 'track one' and 'track two'. Under track one, a host Party that meets all eligibility requirements may verify its own JI projects and issue ERUs for the resulting emission reductions or removals. Annex I Parties operating under track one are required to inform the secretariat of their national guidelines and procedures for approving these projects and to make information about each project publicly available.

The eligibility requirements for track two are less strict than those for track one, and are thus applicable for host Parties that do not meet the eligibility requirements for track one. Under track two, each JI project is subject to verification procedures established under the supervision of the Joint Implementation Supervisory Committee (JISC). The JISC was set up at COP/MOP 1. It is to be composed of 10 voting members with 10 alternates.

Track two procedures are similar to that of the CDM, in that each project must be reviewed by an accredited independent entity to determine whether the project meets the requirements. The emission reductions or removals resulting from the project must also be verified by an independent entity, accredited by the JISC, in order for the Party concerned to issue ERUs. Each project must adhere to strict monitoring requirements, and use approved methodologies for calculation the project baseline and the associated emission reductions or removals.

The track two provision allows joint implementation projects to begin before a host Party meets all its eligibility requirements. However, before that Party can issue and transfer ERUs, it must at least have established its assigned amount and have established its national registry.

## EMISSIONS TRADING

Emissions trading enables Annex I Parties to acquire AAUs from other Annex I Parties that are able to more easily reduce emissions. It enables Parties to pursue cheaper opportunities to curb emissions or increase removals wherever those opportunities exist, in order to reduce the overall cost of mitigating climate change.

Annex I Parties may also acquire, from other Annex I Parties, CERs from CDM projects, ERUs from joint implementation projects, or RMUs from sink activities. To answer concerns that some Parties could 'oversell' and then be unable to meet their own targets, each Annex I Party is required to hold a minimum level of credits at all times. This is known as the commitment period reserve. It is calculated as 90 per cent of the Party's assigned amount, or as the amount of emissions reported in its most recent emissions inventory (multiplied by five, for the five years of the commitment period), whichever figure is lower. If a recalculation of the commitment period reserve leaves it above the total credits held by the Party, it must restore the reserve to its required level in 30 days. ERUs verified through the Article 6 Supervisory Committee can be freely transferred, regardless of the level of the commitment period reserve.

Annex I Parties may choose to implement domestic or regional systems under which legal entities, such as industrial or power plants that are subject to GHG controls, can trade emission allowances and credits. Although the Kyoto Protocol does not address domestic or regional emissions trading, it provides an umbrella under which national and regional trading systems operate, in that the entity-level trading uses Kyoto Protocol units and needs to be reflected in the Kyoto Protocol accounting. Any transfer of units between entities in different Parties under domestic or regional trading systems is also subject to Kyoto Protocol rules. The emissions trading scheme (ETS) of the European Union is one example of a regional trading system, operating under the Kyoto Protocol umbrella.

## THE INTERNATIONAL CARBON MARKET

The implementation of the Kyoto Protocol has stimulated the development of national and regional ghg emission trading systems, as well as the emergence of multiple organizations and tools to facilitate the trading of emission allowances and credits. Even countries that are not Party to the Kyoto Protocol are seeing the emergence of emission crediting services and voluntary trading systems. Collectively, these trading systems, and the organization and tools that support it, are referred to as 'carbon markets', in that the standard unit for measuring GHG emission allowances under the Kyoto Protocol is one tonne of carbon dioxide equivalent.

At the center of the international carbon market are the companies that are subject to GHG controls imposed by Parties to meet their Kyoto Protocol targets, or that anticipate future GHG controls. These companies are the end-users of emission allowances and credits, and as such, drive the overall volume and price of trades. But there are many other players in the carbon market: companies that verify and certify emission credits under the CDM, JI and the various voluntary offset programmes; trading exchanges, such as the European Climate Exchange and the Chicago Climate Exchange, which provide platforms for trading of emissions allowances and credits; and a whole host of brokerages, advisors and analysts to help companies find and manage their emission allowances and credits.

The carbon market is important for the international efforts to address climate change because it helps reduce the overall cost of reducing greenhouse gas emissions. It does this in three ways: by enabling companies that can not reduce emissions cheaply to buy lower cost emission reductions elsewhere; by providing opportunities for companies that are cleaner, and more efficient to profit from their technologies and practices by selling excess allowances, and by making it easier for buyers and sellers to find each other, thereby lowering the transaction costs.

## SINKS AND SAFEGUARDS

Climate change can be partially counteracted at relatively low cost by removing greenhouse gases from the atmosphere – for example through planting trees or improving forest management. But it is often difficult to estimate emissions and removals from the land use, land-use change and forestry (LULUCF) sector. For this reason, LULUCF activities under the Kyoto Protocol are subject to special rules.

Unlike the Convention, which includes all emissions and removals from LULUCF in a Party's total emissions, the Protocol restricts the accounting of for emissions and removals to specific LULUCF activities, as long as they were begun in or after 1990. First, each Party must account for emissions and removals from all afforestation, reforestation and deforestation activities. Second, Parties may choose to account for forest management, cropland management, grazing land management and re-vegetation. Parties must make this choice before the commitment period and it may not be changed subsequently. To help ensure consistency and comparability among Parties, common definitions are established for the term 'forest' and for each of the seven classes of activity. Some variation is permitted, to allow for national conditions, but must be applied consistently.

In contrast to emissions from Annex A sources, emissions and removals from LULUCF activities are accounted by adding to or subtracting from Parties' assigned amount. Net removals from LULUCF activities result in the issuance of additional emission allowances, called removal units (RMUs,) which a Party may add to its assigned amount; while Parties must account for any net emissions from LULUCF activities by cancelling Kyoto Protocol units. Calculation of the quantity of emission allowances to be issued or cancelled is subject to specific rules and limits, which differ for each LULUCF activity.

Emissions and removals from the LULUCF sector must also be calculated and reported according to approved methods, which were developed specifically to meet the needs of the Kyoto Protocol. If a Party fails to report LULUCF emissions and removals correctly, it may be prevented from issuing RMUs.

| Market Indicator | Volume (Tonnes of $CO_2$ equivalent) |
|---|---|
| CERs issued under the CDM inception – 9 November 2007 | 91,997,346 |
| Projected CERs issued by end of commitment period | 1,500,000,000 |
| European Union allowances sold on the European Climate Exchange 2005 – 2006 | 547,122,000,000 |

## CHECKING FOR COMPLIANCE

At the end of the commitment period, the determination of each Annex I Party's compliance with its emission commitment will be made by comparing its total Annex A emissions to its final assigned amount. Each Party's final assigned amount will be equal to its initial assigned amount, plus any additional Kyoto Protocol units that the Party has acquired from other Parties through the Kyoto mechanisms or issued for net removals from a LULUCF activity, minus any units that the Party has transferred to other Parties or cancelled for net emissions from a LULUCF activity.

So long as the Party's total emissions over the commitment period are less than or equal to its final assigned amount, the Party will be in compliance with its emissions limitation and reduction commitment. The figure below shows the relationship between domestic action, LULUCF activities and the Kyoto mechanisms in meeting a Party's emission target.

## THE KYOTO PROTOCOL ACCOUNTING SYSTEM

Determination of each Party's compliance at the end of the commitment period depends on the accurate accounting of each Party's emissions and assigned amount. In order to ensure accurate accounting, the Kyoto Protocol elaborates requirements for the estimation of emissions and the tracking of Kyoto Protocol units by Parties at the national level. It also incorporates and intensifies the Convention's reporting requirements and review procedures. Finally, the Kyoto Protocol establishes a Compliance Committee to consider and determine cases of non-compliance. Together, these components, and the underlying data systems that support them, comprise the Kyoto Protocol accounting system.

Each Annex I Party is required to establish and maintain a national system for the estimation of anthropogenic emissions by sources and removals by sinks of greenhouse gases. A national system means the institutional, legal and procedural arrangements associated with the preparation of a national GHG inventory, and for reporting and archiving inventory information. Each national system must meet specific requirements for planning, preparing and maintaining GHG inventory data over time. Implementation of a reliable national system is an eligibility requirement for participation in the Kyoto Mechanisms

Similarly, each Annex I Party is also required to establish and implement an electronic database, called a national registry, to track its holdings and transactions of Kyoto Protocol units. As with any conventional banking system, these units are held by the registries in a system of accounts for Parties or entities authorized by the Parties. Transactions made under the Protocol's emissions trading provisions are implemented by making transfers from one account to another, either within the same national registry or between accounts in national registries of different Annex I Parties. Annex I Parties 'retire' units in their national registries by moving them to a special retirement account. It is these units which will be considered when assessing the compliance of a Party with its target. Units which are not retired at the end of the commitment period may be 'carried over' in national registries (subject to limits) for use in the next commitment period. These registries also set up cancellation and replacement accounts as depositories of units which may not be used towards a target. Each registry must conform to detailed technical standards that cover data format, data exchange and communication, data security, and transaction rules. The national registry must be in place by 31 December 2006 and is a criterion for eligibility to participate in the Kyoto mechanisms.

The CDM registry, administered by the secretariat under the guidance of the Executive Board, is responsible for generating and tracking CERs from CDM projects. The CDM registry must conform to the same technical standards as national registries.

The International Transaction Log (ITL), which is administered by the UNFCCC secretariat, monitors and tracks transactions of Kyoto Protocol units by Parties, and by the CDM registry. Whenever a national registry undertakes a transaction that affects the Party's holdings of Kyoto Protocol units available for compliance purposes, it communicates with the ITL. The ITL checks each transaction to ensure that it meets specific rules for the particular mechanism and transaction in question. The transaction will be approved only if it passes all these checks.

## REPORTING

Like the Convention, the Protocol imposes two regular, ongoing reporting requirements for Annex I Parties – an annual report and a periodic national communication. For each report, Parties are required to submit the information elements required by the Convention, and to include additional information related to implementation of the Kyoto Protocol. Submission of the annual report and the national communication under the Kyoto Protocol also fulfils the Party's reporting obligation under the Convention.

For the annual report, each Annex I Party must submit the following information on the implementation of the Kyoto Protocol with its annual greenhouse gas inventories it prepares under the Convention:

- Emissions and removals from LULUCF activities
- Any changes to national systems or national registries
- Holding and transactions of Kyoto Protocol units
- Actions to minimize adverse impacts on developing countries.

Each Annex I Party must incorporate information on its implementation of the Protocol in the national communications that it prepares under the Convention, including:

- Details of the Party's national system and national registry
- How the Party's use of the mechanisms is supplemental to domestic action
- Details of policies and measures implemented by the Party to meet emissions targets
- For Annex II Parties, information on new and additional financial resources provided to non-Annex I Parties to help them meet their commitments under the Protocol.

In addition to the annual report and national communication, the Kyoto Protocol establishes two special reports to facilitate the accounting of emissions and assigned amount: the initial report and the true-up period report. The initial report is required to facilitate the calculation of an Annex I Party's assigned amount and to demonstrate its capacity to account for its emissions and assigned amount. Initial reports were to be submitted by Annex I Parties by 31 December 2006 or one year after the entry into force of the Protocol for the Party.

The true-up period report, due at the end of the commitment period, is intended to enable the determination of the Party's compliance with its emission target. This report must contain final information on the Party's holdings of and transactions of Kyoto Protocol units, including all units retired for compliance purposes.

## REVIEW PROCEDURES

The Kyoto Protocol also incorporates and enhances the review procedures under the Convention. Each report submitted by a Party under the Kyoto Protocol is subject to a review by an international expert review team (ERT). The ERT conducts a thorough and technical assessment of the Party's implementation of its Kyoto Protocol commitment and prepares a review report. If the ERT identifies a problem with a Party's implementation of a particular commitment that is not resolved by the Party during the review, the ERT has the authority to list the problem as a 'question of implementation' in its final review report. An ERT can raise questions of implementation only when there is an unresolved problem regarding implementation by a Party of a mandatory element. All review reports, including those that do not list any questions of implementation, will be forwarded to the Compliance Committee for consideration.

ERTs have specific responsibilities with respect to the accounting of emissions and assigned amounts. During each year of the commitment period, expert review teams will check greenhouse gas inventories to ensure they are transparent, consistent, comparable, complete and accurate. Their work will involve at least one country visit during the commitment period. If an ERT believes that a Party's inventory is incomplete, or has not been prepared correctly, it may recommend the application of an 'adjustment.' An adjustment is essentially a change to the inventory estimate reported by the Party. They can only be applied with the consent of the Party concerned, or by the Compliance Committee. Adjustments to a Party's inventory can affect a Party's eligibility to participate in the Kyoto mechanisms or its ability to issue RMUs for LULUCF activities.

Similarly, ERTs will assess the Party's reported information on holdings of and transactions of Kyoto Protocol units and compare this information with that maintained by the ITL. If an ERT identifies a problem with a particular transaction, it may recommend a 'correction'. A correction is analogous to an inventory adjustment; but, while adjustments are applied to inventory estimates, corrections are applied to a Party's holdings of Kyoto Protocol units. Only the Compliance Committee may apply a correction.

Once any problems or questions of implementation have been resolved by the Compliance Committee , the records of the Party's emissions and holdings and transactions of Kyoto Protocol units for that year are updated in the compilation and accounting database, maintained by the secretariat. Every year the secretariat will publish a compilation and accounting report for each Annex I Party, based on information in its database. This report will be forwarded to the Compliance Committee, the COP/MOP and the Party concerned.

## THE COMPLIANCE COMMITTEE

The Kyoto Protocol establishes a Compliance Committee to facilitate, promote and enforce Parties' compliance with its commitments. It considers 'questions of implementation' concerning a Party's compliance with the Kyoto Protocol requirements. Only a Party or an ERT can bring a question of implementation to the attention of the Compliance Committee. An ERT may identify a question of implementation in a review report for a particular Party, or a Party may submit a question of implementation in respect of itself or another Party. Neither the UNFCCC secretariat nor the Committee itself may raise a question of implementation.

The Compliance Committee has two branches: the facilitative branch and the enforcement branch. The bureau of the Committee allocates a question of implementation to the appropriate branch, based on their mandates.

The facilitative branch provides advice and facilitation to Parties in implementing requirements under the Protocol and to promote compliance by Parties with their Kyoto commitments. It is responsible for addressing questions of implementation relating to measures taken by Annex I Parties aimed at mitigating climate change in a way that minimizes their adverse impacts on developing countries and the use by Annex I Parties of the Kyoto mechanisms as supplementary to domestic action. Furthermore, the facilitative branch may provide early warning of potential non-compliance with emissions targets, methodological and reporting commitments relating to GHG inventories, and commitments to provide the supplementary information required in a Party's annual inventory.

The enforcement branch is responsible for questions of implementation regarding a Party's implementation of its methodological and reporting requirements where its accounting of emissions and assigned amount is concerned, and has the authority to suspend and reinstate a Party's eligibility to participate in the Kyoto mechanisms. The enforcement branch will also determine whether a Party is non-compliance with its emissions commitment. If a Party's emissions exceed its holdings of Kyoto Protocol units at the end of the commitment period, it must make up the difference, plus a penalty of 30 per cent, in the second commitment period. It must also develop a compliance action plan and its eligibility to 'sell' credits under emissions trading will be suspended.

# LOOKING AHEAD

With submission of Annex I Party's initial reports, and establishment of their assigned amounts, the implementation of the Kyoto Protocol is well underway and has trigged the emergence of an international carbon market (see box on page 32). Annex I Parties are making concerted efforts to reduce their greenhouse gas emissions in order to meet their targets. In addition, investment in the CDM is facilitating technology transfer, and contributing to slowing emissions growth in developing countries.

None-the-less, it is widely recognized that these efforts will not be sufficient to stabilize atmospheric concentration of greenhouse gases and that further action is needed. Because the Protocol establishes emission commitments for Annex I Parties, it covers only a part of global GHG emissions. Further, these emissions commitments expire after 2012. For this reason, at COP 11 and COP/MOP1, Parties initiated two processes to explore the future direction of the international climate regime. The first is a dialogue to exchange experiences and analyze strategic approaches for long-term cooperative action under the Framework Convention on Climate Change. This dialogue is to occur without prejudice to any future negotiations or commitments and that the dialogue will be informed by the best available scientific information, including the IPCC's Fourth Assessment Report. The second process is an Ad Hoc Working Group on Further Commitments for Annex I Parties under the Kyoto Protocol (AWG). This work is intended to be completed in time to ensure that there is no gap between the first and second commitment periods.

Although it is too early to predict the future nature and scope of the climate regime, adaptation and technology transfer are certain to be central themes. In addition, emerging technologies, such as those for carbon capture and storage, will expand the options for reducing greenhouse gas emissions, and thus for international cooperation.

## SOURCES AND FURTHER READING

### OFFICIAL TEXTS

Definitive versions of both treaty texts appear on the UNFCCC web site unfccc.int and in hard copy or CD-ROM versions from the UNFCCC Library, at the address on the back cover.


Intergovernmental Negotiating Committee for a Framework Convention on Climate Change (1992). United Nations Framework Convention on Climate Change. In: *Report of the Intergovernmental Negotiating Committee for a Framework Convention on Climate Change on the work of the second part of its fifth session, held at New York from 30 April to 9 May 1992. Addendum.* (A/AC.237/18 (Part II) /Add.1, Annex I.) United Nations, New York.

UNFCCC (1998). Kyoto Protocol to the United Nations Framework Convention on Climate Change. In: *Report of the Conference of the Parties on its third session, held at Kyoto from 1 to 11 December 1997. Addendum. Part Two: Action taken by the Conference of the Parties at its third session.* Decision 1/CP.3, Annex (FCCC/CP/1997/7/Add.1.) UNFCCC, Bonn, Germany.


### OTHER REPORTS AND SOURCES


IPCC (2001). *Third Assessment Report.* Cambridge University Press for Intergovernmental Panel on Climate Change (IPCC). Cambridge UK and New York. Intergovernmental Panel on Climate Change. Also available online at: <http://www.ipcc.ch>.

UNFCCC (2004). *The First Ten Years.* United Nations Framework Convention on Climate Change. Bonn, Germany.

Feenstra, Jan F. Burton, Ian. Smith, Joel B. Tol, Richard S.J. (Eds) (1998). *Handbook on Methods for Climate Change Impact Assessment and Adaptation Strategies.* UNEP and Universiteit Amsterdam Institute for Environmental Studies. Also available online at <http://130.37.129/IVM/research/climatechange/fb_Handbook. htm>.

UNEP (2002). *Global Environment Outlook 3.* Published for the United Nations Environment Programme by Earthscan Publications Ltd. London, UK.

UNEP (2003). *A simplified guide to the IPCC's Climate Change 2001: Mitigation.* Geneva, Switzerland.

UNEP and UNFCCC (2002), revised edition. *Understanding climate change: a beginner's guide to the UN Framework Convention and its Kyoto Protocol.* Geneva, Switzerland.

UNEP and GRID-Arendal (2001). *Vital Climate Graphics.* Arendal, Norway.

UNEP and GRID-Arendal (2003). *The climate changing our world.* Arendal, Norway.

Williams, Michael (Ed.). (2001). *Climate change information sheets.* United Nations Environment Programme (UNEP) and the Climate Change Secretariat (UNFCCC). Geneva, Switzerland.


## ABBREVIATIONS AND ACRONYMS

| | |
|---|---|
| AAU | Assigned amount unit (exchanged through emissions trading) |
| AG13 | Ad Hoc Group on Article 13 (1995 – 1998) |
| AGBM | Ad Hoc Group on the Berlin Mandate (1995 – 1997) |
| AIJ | Activities implemented jointly |
| AOSIS | Alliance of Small Island States |
| CACAM | Group of countries of Central Asia and the Caucasus, Albania and Republic of Maldova (negotiating coalition) |
| CBA | Convention on Biological Diversity |
| CDM | Clean developement mechanism |
| CER | Certified emission reduction (generated through the CDM) |
| CFC | Chlorofluorocarbon |

## ABBREVIATIONS AND ACRONYMS (continued)

| | |
|---|---|
| CGE | Consultative Group of Experts on National Communications from Parties not included in Annex I to the Convention |
| $CH_4$ | Methane |
| CG | Central Group (negotiating coalition of Central European Annex I Parties) |
| $CO_2$ | Carbon dioxide |
| COP | Conference of the Parties |
| COP/MOP | Conference of the Parties serving as the meeting of the Parties to the Kyoto Protocol |
| EGTT | Expert Group on Technology Transfer |
| EIT | Economies in transition (former Soviet Union and Central and Eastern European nations) |
| ERU | Emissions reduction unit (generated through joint implementations projects) |
| GCOS | Global Climate Observing System |
| GEF | Global Enviroment Facility |
| GHG | Greenhouse gases |
| GRULAC | Group of Latin America and Caribbean States (United Nations regional group) |
| GWP | Global warming potentiial |
| HFC | Hydrofluorocarbons |
| ICAO | International Energy Agency |
| IGO | Intergovernmental organization |
| IMO | International Maritime Organization |
| INC | Intergovernmental Negotiating Committee for the UNFCCC (1990 – 1995) |
| IPCC | Intergovernmental Panel on Climate Change |
| JLG | Joint Liaison Group (between the UNFCCC, CBD and UNCCD secretariats) |
| JWG | Joint Working Group |
| LDC | Least developed country |
| LULUCF | Land use, land-use change and forestry |
| $N_2O$ | Nitrous oxide |
| NAPA | National adaption programms of action |
| NGO | Non-govermental organization |
| OECD | Organization of Economic Co-operation and Development |
| OPEC | Organization of Petroleum Exporting Countries |
| PFC | Perfluorocarbon |
| RMU | Removal unit (generated in Annex I Parties by LULUCF activities that absorb carbon dioxide) |
| SBI | Subsidiary Body for Implementation |
| SBSTA | Subsidiary Body for Scientific and Technological Advice |
| $SF_6$ | Sulphur hexafluoride |
| TT:CLEAR | Technology Transfer Information Clearing House |
| UN | United Nations |
| UNCCD | United Nations Convention to Combat Desertification |
| UNCED | United Nations Conference on Environment and Development (Rio de Janeiro, Brazil, 1992) |
| UNCTAD | United Nations Conference on Trade and Development |
| UNDP | United Nations Development Programme |
| UNFCCC | United Nations Framework Convention on Climate Change |
| UNIDO | United Nations Industrial Development Organization |
| URF | Uniform reporting format |
| WCC | World Climate Conference |
| WEOG | Western European and Others Group (United Nations regional group) |
| WHO | World Health Organization |
| WMO | World Meteorological Organization |
| WSSD | World Summit on Sustainable Development |

The United Nations Framework Convention on Climate Change and its Kyoto Protocol stand out among international agreements as innovative levers for sustainable development and environmental protection. This guide sketches their history, the way they work and the commitments that participating nations affirm. It also outlines enabling and financial mechanisms that countries can turn to as they strive to tackle the problems and dilemmas that can arise from the complex side-effects of climate change.



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ISBN 92-9219-045-8

Art direction and design: Heller & C

Satellite photos on inside cover and page 2 courtesy of ESA

Printing: Druck Center Meckenheim

Paper: Cover Fedrigoni Freelife vellum * and inside Classen-Papier BioArt Top *

* Recycling paper

# UNITING ON CLIMATE


United Nations Framework Convention on Climate Change