

A GUIDE TO THE CLIMATE CHANGE CONVENTION AND ITS KYOTO PROTOCOL



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INTRODUCTION

On 9 May 1992, the world's governments adopted the UN Framework Convention on Climate Change. In doing so, they took the first step in addressing one of the most urgent environmental problems facing humankind. Five years later, on 11 December 1997, governments took a further step forwards and adopted the landmark Kyoto Protocol. Building on the framework of the Convention, the Kyoto Protocol broke new ground with its legally-binding constraints on greenhouse gas emissions and its innovative "mechanisms" aimed at cutting the cost of curbing emissions. Today, 186 countries (including the European Community) are Parties to the Convention, more than most any other environmental treaty, and the entry into force of the Kyoto Protocol is expected soon.

This guide, prepared in the tenth anniversary year of the adoption of the Convention, explains in detail the commitments of both the Convention and the Kyoto Protocol, along with the "rulebook" for their implementation, as of May 2002.

A companion booklet, *A Guide to the climate change process*, focuses in more depth on the institutions, procedures, participants and organization of work of the on-going climate change negotiations.

These two guides have been prepared for information purposes only, and do not constitute the official negotiated texts agreed by governments. These may be found on the UNFCCC web site (<http://www.unfccc.int>), which also contains databases and links to other relevant web pages and sites.

LIST OF ABBREVIATIONS

AGBM	Ad Hoc Group on the Berlin Mandate (1995-97)
AAU	Assigned Amount Unit (exchanged through emissions trading)
AIJ	Activities implemented jointly
CBD	Convention on Biological Diversity
CDM	Clean development mechanism
CER	Certified emission reduction (generated through the CDM)
CGE	Consultative Group of Experts on National Communications from Non-Annex I Parties
COP	Conference of the Parties
COP/MOP	Conference of the Parties serving as the meeting of the Parties to the Kyoto Protocol
EIT	Economy in transition (countries of the former Soviet Union and Central and Eastern Europe)
ERU	Emission reduction unit (generated through joint implementation projects)
GCOS	Global Climate Observing System
GEF	Global Environment Facility
GWP	Global warming potential
GRULAC	Group of Latin America and the Caribbean states (UN regional group)
HFC	Hydrofluorocarbon
INC	Intergovernmental Negotiating Committee for the UNFCCC (1990-95)
IPCC	Intergovernmental Panel on Climate Change
JLG	Joint Liaison Group (between the UNFCCC, CBD and UNCCD secretariats)
LDC	Least developed country
LULUCF	Land use, land-use change and forestry
NAPA	National adaptation programme of action (for least developed countries)
NGO	Non-governmental organization
OECD	Organization for Economic Co-operation and Development
PFC	Perfluorocarbon
RMU	Removal unit (generated by LULUCF projects that absorb greenhouse gases)
SBI	Subsidiary Body for Implementation
SBSTA	Subsidiary Body for Scientific and Technological Advice
UNCCD	United Nations Convention to Combat Desertification
UNCED	United Nations Conference on Environment and Development (Rio de Janeiro, Brazil, 1992)
UNDP	United Nations Development Programme
UNEP	United Nations Environment Programme
UNFCCC	United Nations Framework Convention on Climate Change
WEOG	Western European and Others Group (UN regional group)
WHO	World Health Organization
WMO	World Meteorological Organization

THE SCIENCE

While the world's climate has always varied naturally, the vast majority of scientists now believe that rising concentrations of "greenhouse gases" in the earth's atmosphere, resulting from economic and demographic growth over the last two centuries since the industrial revolution, are overriding this natural variability and leading to potentially irreversible climate change. Greenhouse gases – especially carbon dioxide, the most abundant from human sources – act like a blanket over the Earth's surface, keeping it warmer than it would otherwise be. The Third Assessment Report of the Intergovernmental Panel on Climate Change (IPCC), released in 2001, confirms that "an increasing body of observations gives a collective picture of a warming world" with "new and stronger evidence that most of the warming observed over the last 50 years is attributable to human activities".

Updating the findings of its 1995 Second Assessment Report, the IPCC projects that the climate will change more rapidly than previously expected. Global mean surface temperatures are projected to increase by 1.4 - 5.8°C by 2100, the fastest rate of change since the end of the last ice age. Global mean sea levels are expected to rise by 9 - 88 cm by 2100, flooding many low-lying coastal areas. Changes in rainfall patterns are also predicted, increasing the threat of drought or floods in many regions. Overall, the climate is expected to become more variable, with a greater threat of extreme weather events, such as intense storms and heatwaves. There is also the risk of abrupt and large-scale "surprises", for instance, the weakening or complete shut down of the ocean thermohaline circulation (such as the Gulf Stream), or the collapse of the Greenland and West Antarctic ice sheets. While the likelihood that such devastating events will happen over the next hundred years is very low, it increases with the rate and scale of global warming.

The IPCC reports that the effects of climate change are already starting to be felt, for example, in the earlier flowering of plants and egg-laying in birds. The climate system is complex and scientists still need to improve their understanding of the extent, timing and impacts of climate change, but what we know already alerts us to its dangers. Although some people may benefit from climate change, the IPCC warns that more will suffer, with potentially dramatic negative impacts on human health, food security, economic activity, water resources and physical infrastructure. Farming could be seriously disrupted with falling crop yields in many regions, and tropical diseases, such as malaria or dengue fever, are expected to spread into new areas. Fresh water, already in short supply in many arid and semi-arid regions, is likely to become even scarcer in those regions, while sea level rise and changing weather patterns could trigger large-scale migration from more seriously affected areas. While no one will be able to escape from climate change, it is the poorer people and countries who are most vulnerable to its negative impacts.

A BRIEF HISTORY OF THE CLIMATE CHANGE PROCESS

Increasing scientific evidence of human interference with the climate system, coupled with growing public concern over global environmental issues, began to push climate change onto the political agenda in the mid-1980s. Recognising the needs of policy-makers for authoritative and up-to-date scientific information, the World Meteorological Organization (WMO) and the UN Environment Programme (UNEP) established the Intergovernmental Panel on Climate Change in 1988. That same year, following a proposal by the Government of Malta, the United Nations General Assembly took up the issue of climate change for the first time and adopted resolution 43/53 on the “Protection of global climate for present and future generations of mankind”.

In 1990, the IPCC issued its First Assessment Report, confirming that climate change was indeed a threat and calling for a global treaty to address the problem. This call was echoed by the Ministerial Declaration of the Second World Climate Conference, held in Geneva in October/November of that year. The UN General Assembly responded to these calls in December of 1990, formally launching negotiations on a framework convention on climate change by its resolution 45/212. These negotiations were conducted by an Intergovernmental Negotiating Committee (INC), chaired by Jean Ripert (France).

The INC met for the first time in February 1991 and, after just 15 months of negotiations, governments adopted the United Nations Framework Convention on Climate Change at the INC’s resumed fifth session on 9 May 1992. The Convention was opened for signature on 4 June 1992 at the UN Conference on Environment and Development (UNCED), the so-called “Earth Summit”, in Rio de Janeiro, Brazil, and came into force on 21 March 1994. A decade after its adoption, 186 governments (including the European Community) are now Parties to the Convention and it is approaching universal membership.

Since the Convention’s entry into force, Parties have met annually in the Conference of the Parties (COP) to monitor its implementation and continue talks on how best to tackle climate change. The many decisions taken by the COP at its annual sessions now make up a detailed rulebook for the effective implementation of the Convention.

When they adopted the Convention, however, governments knew that its commitments would not be sufficient to seriously tackle climate change. At the first COP (Berlin, March/April 1995), in a decision known as the *Berlin Mandate*, Parties therefore launched a new round of talks to decide on stronger and more detailed commitments for industrialized countries. After two and a half years of intense negotiations, the Kyoto Protocol was adopted at COP 3 in Kyoto, Japan, on 11 December 1997.

The complexity of the negotiations, however, meant that considerable “unfinished business” remained even after the Kyoto Protocol itself was adopted. The Protocol sketched out the basic features of its “mechanisms” and compliance system, for example, but did not flesh out the all-important rules of how they would operate. Although 84 countries signed the Protocol indicating that they intended to ratify,

many were reluctant to actually do so and bring the Protocol into force before having a clearer picture of the treaty's rulebook.

A new round of negotiations was therefore launched at COP 4 (Buenos Aires, November 1998) to draft the Kyoto Protocol's rulebook. This round, based on an ambitious work programme known as the *Buenos Aires Plan of Action*, linked together negotiations on the Protocol's rulebook with talks on implementation issues under the Convention (such as finance and technology transfer). The deadline for negotiations under the Buenos Aires Plan of Action was set as COP 6 (The Hague, November 2000). However, the volume of work facing that session, and the difficult political issues at stake, led to a breakdown in negotiations.

Talks reconvened at a resumed session of COP 6 in Bonn, Germany, in July 2001. Here, governments struck a political deal – the so-called *Bonn Agreements* – signing off on the most politically controversial issues under the Buenos Aires Plan of Action. A few months later at COP 7 (Marrakesh, October/ November 2001), negotiators built on the Bonn Agreements to finally adopt a comprehensive package of decisions – known as the *Marrakesh Accords* – containing a detailed rulebook for the Kyoto Protocol, as well as important advances in the implementation of the Convention and its rulebook. The adoption of the Marrakesh Accords thus marked the close of a major negotiating cycle. Climate change is a long-term problem, however, and the climate change process is far from over. Governments will continue to meet to discuss how best to implement the Convention and the Protocol, and to decide on next steps to combat climate change.

A chronology of the climate change process

Date	Event
1988	WMO and UNEP establish the IPCC. The UN General Assembly takes up climate change for the first time.
1990	The IPCC's First Assessment Report is published. It concludes that international negotiations on a framework convention should start as quickly as possible. The UN General Assembly opens negotiations on a framework convention on climate change and establishes an Intergovernmental Negotiating Committee (INC) to conduct these.
February 1991	The INC meets for the first time.
9 May 1992	The UN Framework Convention on Climate Change is adopted in New York at the resumed fifth session of the INC.
4 June 1992	The Convention is opened for signature at the "Earth Summit" in Rio de Janeiro, Brazil.
21 March 1994	The Convention enters into force.
7 April 1995	The first Conference of the Parties (COP 1) in Berlin launches a new round of negotiations on a "protocol or other legal instrument".
11-15 Dec 1995	The IPCC approves its Second Assessment Report. Its findings underline the need for strong policy action.
19 July 1996	COP 2 in Geneva takes note of the Geneva Ministerial Declaration, which acts as a further impetus to the on-going negotiations.
11 Dec 1997	COP 3 meeting in Kyoto adopts the Kyoto Protocol to the UN Framework Convention on Climate Change.
16 March 1998	The Kyoto Protocol is opened for signature at UN headquarters in New York. Over a one-year period, it receives 84 signatures.
14 Nov 1998	COP 4 meeting in Buenos Aires adopts the "Buenos Aires Plan of Action", setting out a programme of work on the Kyoto Protocol's operational details and the implementation of the Convention. COP 6 is set as the deadline.
13 – 24 Nov 2000	COP 6 meets in The Hague, but fails to agree on a package of decisions under the Buenos Aires Plan of Action.
4 – 6 April 2001	The IPCC accepts the three Working Group contributions to its Third Assessment Report, which give stronger evidence of a warming world.
16 – 27 July 2001	COP 6 resumes in Bonn. Parties adopt the "Bonn Agreements", registering consensus on key political issues under the Buenos Aires Plan of Action.
29 Oct – 9 Nov 2001	COP 7 in Marrakesh adopts the "Marrakesh Accords", a set of detailed decisions giving effect to the Bonn Agreements.
26 Aug – 4 Sept 2002	The World Summit on Sustainable Development is scheduled to meet in Johannesburg, South Africa, to review progress since the 1992 Earth Summit.
23 Oct – 1 Nov 2002	COP 8 is scheduled to meet in New Delhi, India.
200?	<i>Entry into force of the Kyoto Protocol?</i>

THE CLIMATE CHANGE CONVENTION

THE FRAMEWORK FOR ACTION

The Convention sets the overall framework for intergovernmental efforts to address climate change. It establishes an objective and principles, commitments for different groups of countries, and a set of institutions to enable governments to monitor the Convention's implementation and continue their talks on how best to tackle the problem.

Objective and principles

The *ultimate objective* of the Convention is “to achieve stabilization of atmospheric concentrations of greenhouse gases at levels that would prevent dangerous anthropogenic (human-induced) interference with the climate system...”. The Convention does not define what levels might be “dangerous”, although it does state that ecosystems should be allowed to adapt naturally, food supply should not be threatened, and economic development should be able to proceed in a sustainable manner. Defining what we mean by “dangerous” is a tough political question, involving social and economic considerations as well as scientific judgement.

Addressing climate change is clearly not an easy task, raising difficult dilemmas such as how to distribute the burden of reducing emissions among different countries and dealing with scientific uncertainty. The Convention's *principles* embody the common understanding of governments on how to deal with these dilemmas.

The principles of “equity” and “common but differentiated responsibilities” respond to the fact that, although climate change is a global issue and must be tackled as such, the industrialized countries have historically contributed the most to the problem and have more resources to address it. The developing countries, for their part, are more vulnerable to its adverse effects and their technological, economic and institutional capacity to respond is generally lower. The Convention thus defines a global framework for addressing climate change, but requires industrialized countries to take the lead by modifying their long-term emission trends. It also calls on the richest among them to provide financial and technological resources to help developing countries tackle the problem and adapt to its adverse effects.

The so-called “precautionary principle”, in turn, responds to the dilemma that, although many uncertainties still surround climate change, waiting for full scientific certainty before taking action will almost certainly be too late to avert its worst impacts. The Convention, following many environmental treaties before it, thus calls for “precautionary measures” to combat climate change, stating that, “where there are threats of serious or irreversible damage, lack of full scientific certainty should not be used as a reason for postponing such measures”.

Another important dimension to climate change is its linkage with development – indeed, many see climate change as fundamentally a development problem, rather than an environmental one. Patterns of energy consumption, land use and demographic growth are all key drivers of both development and climate change. Tackling climate change must be compatible with advancing the aspirations of the

world's poor, as part of their efforts to achieve sustainable development. At the same time, industrialized countries in particular are concerned that the economic costs of mitigating climate change should be minimized. The Convention recognizes these concerns in a number of ways. It acknowledges, for example, that the first and overriding priorities of developing countries are development and poverty alleviation. It also emphasizes the importance of promoting sustainable development, noting that sustainable economic growth and development will enable countries to better address climate change. In addition, the Convention calls for policies and measures to deal with climate change to be cost-effective, so as to ensure global benefits at the lowest possible cost.

Groups of countries and their differentiated commitments

The Convention divides countries into two main groups: A total of 41 industrialized countries are currently listed in the Convention's *Annex I*, including the relatively wealthy industrialized countries that were members of the Organization for Economic Co-operation and Development (OECD) in 1992, plus countries with economies in transition (the EITs), including the Russian Federation, the Baltic States, and several Central and Eastern European States).

The OECD members of Annex I – not the EITs – are also listed in the Convention's *Annex II*. There are currently 24 such Annex II Parties.

All other countries not listed in the Convention's Annexes – mostly the developing countries – are known as *non-Annex I* countries. They currently number 145.

Countries included in Annex I to the Convention

Australia	Austria	Belarus*
Belgium	Bulgaria*	Canada
<u>Croatia</u> *	<u>Czech Republic</u> *	Denmark
Estonia*	European Community	Finland
France	Germany	Greece
Hungary*	Iceland	Ireland
Italy	Japan	Latvia*
<u>Liechtenstein</u>	Lithuania*	Luxembourg
<u>Monaco</u>	Netherlands	New Zealand
Norway	Poland*	Portugal
Romania*	Russian Federation*	<u>Slovakia</u> *
<u>Slovenia</u> *	Spain	Sweden
Switzerland	<i>Turkey</i>	Ukraine*
United Kingdom	United States of America	

* Countries with economies in transition; **Bold** denotes countries also included in Annex II; Underline denotes countries added to Annex I at COP 3 in 1997.

Turkey has not yet ratified the Convention. A decision taken at COP 7 deleted its name from Annex II and invited Parties to recognize its special circumstances, which will place Turkey in a different situation from that of other Annex I Parties when it becomes a Party.

Note: Kazakhstan has announced its intention to be bound by the commitments of Annex I Parties, but is not formally classified as an Annex I Party under the Convention. It will, however, be considered an Annex I Party under the Kyoto Protocol, once it enters into force.

All Parties to the Convention – those countries that have ratified, accepted, approved, or acceded to the treaty – are subject to an important set of general commitments

which place a fundamental obligation on both industrialized and developing countries to respond to climate change. Under these commitments, all Parties must prepare and regularly update national climate change mitigation and adaptation programmes, including measures to address sources of greenhouse gas emissions and to protect and enhance so-called carbon “sinks” and “reservoirs” (forests and other natural systems that remove carbon from the atmosphere). They must also take climate change considerations into account in their other relevant social, economic and environmental policies, and use such methods as impact assessments to minimize any adverse economic, health or environmental consequences of climate change measures.

As part of these general commitments, all Parties must also promote the development, application and transfer of climate-friendly technologies and practices, as well as the sustainable management of carbon sinks. In addition, Parties are required to make preparations to adapt to climate change, participate in climate research, systematic observation and information exchange, and promote education, training and public awareness relating to climate change. All Parties must also compile an inventory of their greenhouse gas emissions, and submit reports – known as “national communications” – on the action they are taking to implement the Convention.

The Annex I Parties alone, however, in order to demonstrate their leadership in addressing climate change, are subject to a specific commitment to adopt climate change policies and measures with the non-legally binding aim that they should have returned their greenhouse gas emissions to 1990 levels by the year 2000.

The Convention grants EITs “a certain degree of flexibility” in implementing their commitments, on account of the economic and political upheavals recently experienced in those countries. Several EITs have exercised this flexibility to select a baseline for their specific commitment other than 1990, that is, prior to the economic changes that led to big cuts in their emissions.

Although the emissions data needed to assess whether Annex I Parties have succeeded in returning their emissions to 1990 levels by 2000 is not yet complete, preliminary indications suggest that, although Annex I Parties as a whole will probably have met this goal, that achievement masks great variations among the Parties. While emissions in the EITs have declined steeply (by over 40% between 1990 and 1999), emissions in most Annex II Parties (the OECD members) have continued to rise (by 6.6% between 1990 and 1999), with some experiencing percentage increases in double figures.

The Annex II Parties are also required to provide financial resources to enable developing countries to meet their obligations under the Convention, and to help them adapt to the adverse effects of climate change. In addition, the Annex II Parties must “take all practicable steps” to promote the development and transfer of environmentally-friendly technologies to both EITs and developing countries. Financial assistance provided by Annex II Parties is mostly channelled through the Convention’s financial mechanism, currently operated by the Global Environment Facility (GEF).

The Convention recognizes the particular vulnerability of certain groups of developing countries. This vulnerability has two dimensions. Some groups, such as countries with low-lying coastal areas and those prone to drought and desertification.

face particularly high risks from the adverse impacts of climate change. Others, such as countries that are highly dependent on income generated from fossil fuel production, processing or export, feel more vulnerable to the potential economic impact of climate change response measures. The Convention calls for full consideration to be given to possible funding, insurance and technology transfer that could help meet the specific needs and concerns of these vulnerable countries.

The 48 countries that are classified as least developed countries (LDCs) by the UN are given special consideration under the Convention, on account of their particularly low 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 with regard to funding and technology transfer.

The institutions

The supreme decision-making 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 rulebook, and negotiate substantive new commitments.

The Convention's two subsidiary bodies – the *Subsidiary Body for Scientific and Technological Advice* (SBSTA) and the *Subsidiary Body for Implementation* (SBI) – meet at least twice a year to carry out preparatory work for the COP. As their names suggest, the SBSTA is responsible for providing advice to the COP on scientific, technological and methodological issues, including on the improvement of guidelines for preparing national communications and emission inventories, as well as cooperation with the IPCC and other relevant international organizations. The SBI helps with the assessment and review of the Convention's implementation, including the analysis of national communications submitted by Parties, liaison with the GEF, and financial and administrative issues.

The climate change *secretariat* provides support to the COP and the subsidiary bodies, performing such functions as preparing background documents, organizing negotiating sessions, compiling emissions data and giving advice on technical matters, as requested by the Parties. The secretariat, composed of some 150 staff including short-term staff and consultants, is currently based in Bonn.

Two other intergovernmental organizations, which are not formally part of the Convention's institutions, provide important services to it. These are the *Global Environment Facility* and the *Intergovernmental Panel on Climate Change*.

The GEF currently operates the Convention's financial mechanism, which channels funds to developing countries on a grant or concessional basis. It was established by the World Bank, UNEP and the UN Development Programme (UNDP) in 1991 (with a pilot phase up to 1994) to fund certain 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.

The IPCC is now one of the most important sources of information for the climate change regime. As well as its regular comprehensive assessments on the state of climate change science, published roughly every five years (the latest Third Assessment Report came out in 2001), the IPCC prepares shorter Special Reports and Technical Papers on specific issues in response to requests from the COP or the SBSTA. The IPCC's methodological work has also played an important role in the development of common guidelines for Parties to compile their inventories of greenhouse gases.

More detailed information on the institutions of the Convention (and the Kyoto Protocol) may be found in the companion *Guide to the climate change process*.

THE DETAIL

This section describes the provisions of the Convention and its rulebook in more depth, including decisions taken as part of the Marrakesh Accords adopted at COP 7 in 2001.

Reporting and review

The requirement for all Parties to report on their greenhouse gas emissions and climate change activities is one of their most important obligations, providing the basis for the COP to assess the implementation of the Convention and its effectiveness.

Annex I Parties

Although all Parties must submit reports under the Convention, Annex I Parties must report more often and in more detail. A first report – known as a ***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 was due on 15 April 1997 (15 April 1998 for EITs) and the third by 30 November 2001. The deadline for the next communication has not yet been set, but will be within three to five years of the last one. The secretariat has now received two national communications from almost all Annex I Parties, except those who only recently joined the Convention, with third national communications still being submitted. Most national communications are available from the secretariat web site.

Annex I Parties must also submit an ***annual inventory*** of their greenhouse gas emissions to the secretariat by 15 April every year, including data on emissions for their base year (1990 except for some EITs) and for all years up to the last but one year prior to submission. Inventories due in April 2002, for example, should contain emissions data up to the year 2000.

Annex I Parties must prepare their national communications and emission inventories according to agreed guidelines, using methodologies developed by the IPCC. These guidelines, the first of which were adopted by the INC in 1994 before the Convention's entry into force, have been revised twice, at COP 2 in 1996 for the second national communications and COP 5 in 1999 for the third. each time setting

out in more detail the content and presentation required in order to improve the completeness, accuracy and consistency of information provided. Separate guidelines were adopted at COP 5 for reporting annual emission inventories, as well as for reporting on global climate observation activities. These guidelines will, in turn, be subject to continuous revision and improvement; COP 8 in 2002, for example, is due to decide on revisions to the guidelines for annual emission inventories.

The national communications submitted by Annex I Parties are compiled and synthesized by the secretariat. In addition, each national communication is subject to an *in-depth review* by teams of experts. These teams, consisting of some four to five people, are coordinated by the secretariat and selected from a roster of experts nominated by Parties. The in-depth review typically involves both a desk-based study and an in-country visit, and aims to provide a comprehensive, technical assessment of a Party's implementation with its commitments. The reports of the in-depth review teams, which typically expand on and update the national communications themselves, are made publicly available (including from the secretariat web site). The in-depth review of third national communications is due to be finished by COP 9 in 2003.

The secretariat compiles the latest emissions data submitted by Parties in their annual inventories on a regular basis. Since 2000, annual inventories have also been subject to a *technical review*, during a trial period to be evaluated by COP 8. The technical review involves an initial check and a synthesis and assessment of all Annex I Party annual inventories, along with a review of individual inventories on a voluntary basis. For the trial period, these individual inventory reviews use different approaches, including desk-based reviews, centralized reviews covering 5-10 inventories, and in-country reviews. The individual review process will be extended to all Annex I Parties in 2003. Status reports on the annual greenhouse gas inventories of Annex I Parties can be found on the secretariat web site, as well as synthesis and assessment reports of greenhouse gas inventories, and review reports on individual countries.

Non-Annex I Parties

According to the Convention, the preparation of national communications from non-Annex I Parties is dependent on the receipt of funding. Once funding is received, non-Annex I Parties are granted three years to prepare their initial national communications. LDC Parties may prepare a national communication at their discretion. Some 80 non-Annex I Parties have now submitted their initial national communications, and this figure continues to rise as Parties secure the necessary funding from the GEF. No deadline has been set for second national communications, although Mexico has already submitted its second communication and some other non-Annex I Parties are also working on theirs. Non-Annex I Parties are not required to submit a separate annual emission inventory.

Guidelines for the preparation of national communications from non-Annex I Parties were first agreed at COP 2 in 1996. The information required is less detailed than that asked of Annex I Parties, in line with the more general commitments of non-Annex I Parties under the Convention. The guidelines are currently under review; the aim is to agree on improvements to them by COP 8.

As with Annex I Parties, the national communications of non-Annex I Parties are compiled and synthesized by the secretariat. The secretariat has prepared an updated compilation and synthesis annually since 1999, to take account of new initial communications sent in by Parties. National communications from non-Annex I Parties are not subject to in-depth review.

A Consultative Group of Experts on National Communications from Non-Annex I Parties (CGE) was established by COP 5 in 1999 in order to improve the preparation of national communications from developing countries. Its mandate is to analyse problems encountered by non-Annex I Parties in preparing their national communications (e.g. concerning financial or technical support, or data quality and availability) and provide a forum for these Parties to exchange information on their experiences with the national communication process. The CGE, which is composed of 24 members, meets twice a year, and also holds workshops to gather information on national experiences. It reports to the SBI on its work.

At COP 7, the CGE was given an additional mandate to look at technical problems and constraints that have affected the preparation of initial national communications by those non-Annex I Parties that have not yet completed them. It was also asked to provide input to the on-going review and improvement of the reporting guidelines. The CGE's mandate and terms of reference will be reviewed again by COP 8.

Methodological work

Work is on-going within the SBSTA, in collaboration with the IPCC, to help improve the completeness and accuracy of reporting on national greenhouse gas inventories. The IPCC, for example, has developed "good practice guidance" for compiling emission inventories, including suggested quality assessment and control procedures.

Several specific methodological issues are also currently on the SBSTA's agenda. One particularly tricky issue concerns emissions from so-called "bunker fuels" used in international aviation and marine transport. These emissions are reported separately from national emission totals, as no agreed methodology currently exists for allocating them to the different countries involved (the countries of registration, origin and destination of a ship/aircraft, for example, may all differ). Other ongoing methodological work includes how to account for emissions from forest harvesting and wood products (e.g. plywood, pulp and paper), along with the development of methodologies to assess climate impacts, vulnerability and adaptation options.

Funding

The main funding channel for developing countries is the Global Environment Facility, which operates as the Convention's financial mechanism. Since 1991, approximately US\$ 1.3 billion has been provided in grants from the GEF Trust Fund for climate change activities. An additional US\$ 6.9 billion was contributed through co-financing from bilateral agencies, recipient countries and the private sector, making a total of US\$ 8.2 billion. Over the most recent reporting period (July 2000 to June 2001), total project financing for climate change activities exceeded US\$ 817 million, of which the GEF provided US\$ 197 million in grant financing.

As part of the Marrakesh Accords, the COP gave additional guidance to the GEF that expanded the scope of activities eligible for funding, including in the areas of adaptation and capacity building. The Marrakesh Accords also established two new funds under the Convention (plus another fund, the adaptation fund, under the Kyoto Protocol). These will be managed by the GEF, as the operating entity of the Convention and Protocol's financial mechanism, in addition to its climate change focal area:

- A *special climate change fund* will finance projects relating to: capacity building; adaptation; technology transfer; climate change mitigation; and economic diversification for countries highly dependent on income from fossil fuels; and
- A *least developed countries fund* will support a special work programme to assist LDCs.

A number of Annex II Parties have already declared that they will collectively contribute US\$ 410 million (€450 million) annually in extra funding for developing countries by 2005, with this level to be reviewed in 2008. The Marrakesh Accords require Annex II Parties to report on their financial contributions on an annual basis, with these reports to be reviewed by the COP.

Development and transfer of technologies

Promoting the effective development and transfer of environmentally-friendly technologies is critical to enabling developing countries to pursue their sustainable development objectives, while avoiding the climate-destructive development path of the industrialized world.

The secretariat has carried out a number of activities in support of Parties' efforts to promote technology development and transfer. At the request of the COP and the SBSTA, these activities have focussed on the synthesis and dissemination of information, such as assessing the technology needs of developing countries and compiling information on the existing technology transfer activities of both Annex II Parties and relevant intergovernmental organizations. The secretariat has also prepared technical papers on specific topics, such as adaptation technologies and terms of transfer. A key on-going project is the development of a technology information system, including an inventory of environmentally-friendly technologies, to be accessible on the internet.

This issue was given a boost at COP 4 in 1998, when Parties decided to launch a consultative process, led by the Chairman of the SBSTA. The aim of this consultative process was to formulate an agreed framework to promote the effective development and transfer of environmentally-friendly technologies under the Convention. Formulating an agreed framework in this way was considered important, as Parties often had different understandings of the concept of technology transfer, making it difficult to make progress on the issue. The consultative process, which included several regional workshops, culminated in agreement, as part of the Marrakesh Accords, on a "framework for meaningful and effective actions" to improve the implementation of the Convention's technology commitments.

The framework covers five key themes, including the assessment of technology needs, the establishment of an efficient technology information system, the promotion of enabling environments to facilitate and remove barriers to technology transfer, and capacity building. Funding to implement the framework is to be provided through the GEF climate change focal area and the special climate change fund.

A new *expert group on technology transfer* was established to oversee the implementation of the framework and to identify ways of advancing technology transfer activities. Composed of 20 members, the expert group meets twice a year and reports to the SBSTA. Its work will be reviewed by COP 12 in 2006.

Capacity building

The need for capacity building to help Parties, especially developing countries, to respond to climate change has long been recognized in the climate change process, in the context of such issues as the development and transfer of technology, the preparation of national communications and the financial mechanism. It was only during COP 5 in 1999, however, that it was first considered as a separate agenda item.

As part of the Marrakesh Accords, governments agreed on two frameworks for capacity building in developing countries and in EITs. These frameworks are intended to guide capacity-building activities for the implementation of the Convention and effective participation in the Kyoto Protocol process in both groups of countries. The frameworks also provide guidance to the GEF and other multilateral and bilateral organizations for their work in this area.

The frameworks include a set of guiding principles and approaches – for example, that capacity building should be country-driven, involve learning by doing, and build on existing activities – and provide an initial list of priority areas for both developing countries and EITs, also covering the specific needs of LDCs. The frameworks call on developing countries and EITs to continue to provide information on their specific needs and priorities, while promoting cooperation among themselves and stakeholder participation. Annex II Parties, for their part, should provide additional financial and technical resources for capacity building through the GEF and other channels, while all Parties should improve the coordination and effectiveness of existing activities. Progress in implementing the frameworks will be monitored by the SBI, and a comprehensive review will be conducted by COP 9.

Vulnerability of developing countries

How to address the vulnerability of developing countries – to both climate change impacts and response measures, along with the specific concerns of LDCs – first appeared on the COP agenda as a separate item when Parties launched a process, together with the adoption of the Protocol, to consider what action should be taken. This process, involving several information-gathering workshops, culminated in agreement as part of the Marrakesh Accords. The agreement includes the establishment of new funds (see “Funding” above), along with a separate decision on the impacts of climate change and response measures, and the specific concerns of LDCs.

Impacts of climate change and response measures

The Marrakesh Accords emphasize the need to exchange information on the impacts of climate change and response measures, calling on non-Annex I Parties to provide information on their needs and priorities, and on Annex II Parties to report on the policies they have in place to help vulnerable developing countries.

The Accords also identify a number of activities to be supported by the GEF, the special climate change fund and other bilateral and multilateral sources (plus the Kyoto Protocol's adaptation fund), to help vulnerable developing countries:

- Regarding vulnerability to the ***impacts of climate change***, these activities include: data collection; research and monitoring of climate change impacts; assessment of vulnerability and adaptation options; capacity building; improving early warning systems for rapid response to extreme weather events; and starting to implement adaptation activities where appropriate.
- Concerning vulnerability to ***response measures***, the activities cover: promoting investment for economic diversification; development and transfer of more climate-friendly technologies, including non-energy uses of fossil fuels, advanced fossil fuel technologies and carbon capture/storage; the expansion of climate-friendly energy sources (e.g. natural gas and renewables); and capacity building.

The subsidiary bodies will review progress in these activities, and report to COP 8.

Looking ahead, the Marrakesh Accords set out a programme of continuing analytical work on the impacts of climate change and response measures, involving a series of regional and issue-specific workshops, including on the topic of possible insurance measures. These workshops will form the basis for further discussion at COP 8.

Least developed countries

The Marrakesh Accords also established a separate work programme for LDCs. This work programme is centred on the preparation of ***national adaptation programmes of action*** (NAPAs), which open up a simplified channel for LDCs to inform donors of their vulnerability to climate change and their urgent adaptation needs. This responds to the fact that many LDCs already need support to help them adapt to climate change, but lack the capacity to prepare full national communications detailing those needs in the near future. The preparation of NAPAs will be funded by the newly-created least developed countries fund.

In order to support LDCs in their preparation and implementation of NAPAs, the Marrakesh Accords launched a ***least developed country expert group*** with a mandate to provide technical guidance and advice to LDCs and to facilitate information exchange with other multilateral environmental treaties. The expert group, which is composed of 12 experts, will convene twice a year until COP 9 and will cooperate closely with the Consultative Group of Experts on National Communications from Non-Annex I Parties.

Research and public outreach

Two important commitments that apply to all Parties under the Convention concern cooperation in *research and systematic observation* of the climate system, and promotion of *education, training and public awareness* on climate change.

The Convention's work on research and systematic observation is carried out in collaboration with the Global Climate Observing System (GCOS) of the World Meteorological Organization (WMO), along with other agencies participating in WMO's Climate Agenda. Key concerns surrounding this topic include addressing the deterioration of climate observing systems in many regions, and increasing the participation of developing countries in climate observation. GCOS has a number of activities underway to advance these aims (such as regional workshops), and reports regularly to the SBSTA on its work. An important step forwards was taken at COP 5, when Parties adopted guidelines for reporting on their global climate observation activities as part of their national communications.

Education, training and public awareness are all critical to harnessing public support for measures to combat climate change. While the secretariat has long been active in public outreach, the issue was first discussed by the SBSTA only in 1998. A work programme on education, training and public awareness is currently under development, including workshops, the expansion of the secretariat's web site to serve as an information clearing-house, and improved dissemination of information products and reports (including those of the IPCC). Additional financial resources will be needed for these activities. As part of the Marrakesh Accords, guidance was given to the GEF stating that funding should be provided for public awareness and education activities in developing countries.

Activities implemented jointly

The Convention allows Annex I Parties to implement policies and measures jointly with other Parties to help them return their emissions to 1990 levels. This clause underpinned the decision, at COP 1, to launch a pilot phase of so-called "activities implemented jointly" (AIJ). Under AIJ, an Annex I Party may implement a project that reduces emissions (e.g. energy conservation) or increases the removal of greenhouse gases by carbon sinks (e.g. reforestation) in the territory of another Party, including a developing country, but without gaining credit for the resulting emission reductions or removals. The pilot phase is intended to build experience through learning by doing, for example in establishing baselines and calculating the environmental benefits of projects. Although the pilot phase was due to conclude by 2000, COP 5 decided to prolong it beyond that date to continue the learning process. This was especially important for some developing country regions, notably Africa, whose experience with AIJ had so far been limited.

The secretariat compiles an annual synthesis report on the AIJ projects reported to it, which must have been endorsed by both host and investing countries. In reporting on their AIJ projects, Parties are expected to use a Uniform Reporting Format (URF), in order to maximize the comparability of information. The COP reviews the progress of the pilot phase every year, based on this synthesis report.

By June 2001, more than 150 AIJ projects had been communicated to the secretariat, engaging around one quarter of Parties to the Convention, either as investors or as hosts. Interest in the AIJ pilot phase has steadily grown, especially since the adoption of the Kyoto Protocol, with an almost 50% increase in the number of projects since 1997. While 70% of host Parties are non-Annex I Parties, EITs still host the majority of AIJ projects, although the balance is gradually shifting towards the developing countries. Most projects are in the renewable energy and energy efficiency sectors, although the largest projects involve forest preservation, reforestation or restoration.

Linkages with other international organizations

The issue of climate change is so wide-ranging that the work of the Convention is interlinked with that of many other international organizations that share the common objective of sustainable development. An effective response to climate change, and progress towards sustainable development, thus requires that areas of possible conflict or overlap be properly managed, and that opportunities for synergies be exploited. The Convention recognizes this, authorizing the COP to work with other international organizations, and calling on the secretariat to ensure the necessary coordination.

A joint liaison group (JLG) was established in 2001 between the secretariats of the UNFCCC, the Convention on Biological Diversity (CBD) and the UN Convention to Combat Desertification (UNCCD), in order to enhance cooperation between these so-called “Rio Conventions” (the origins of all three Conventions are associated with the 1992 Rio de Janeiro “Earth Summit”). Through the JLG, the three secretariats share information on the work of their conventions, and identify possible joint activities and any potential conflicts. One of the first activities of the JLG, for example, will be to hold a joint workshop on forests and forestry, an area of common interest to the three conventions.

The SBSTA regularly hears reports from international organizations whose work is linked to climate change, such as the World Health Organization (WHO) and the Ramsar Convention. The secretariat in turn attends, and makes statements at, related international meetings. Input from other organizations is also sought on specific issues, such as collaboration with GCOS on research and systematic observation and UNEP on education, training and public awareness. In addition, the SBSTA has worked with the bodies of the Montreal Protocol on Substances That Deplete the Ozone Layer on linkages between efforts to combat climate change and ozone depletion; this is an issue that involves synergies as well as potential conflicts, given that both ozone-depleting substances and some of their replacements are also greenhouse gases.

THE KYOTO PROTOCOL

THE FRAMEWORK FOR ACTION

The Kyoto Protocol supplements and strengthens the Convention. Only countries that are already Parties to the Convention can ratify (or accept, approve, or accede to) the Protocol, and thereby become Parties to it. Conversely, only Parties to the Protocol will be subject to its commitments, once it has been ratified by enough countries to enter into force (see “The road ahead” below).

The Kyoto Protocol is based on the general framework established by the Convention, sharing its ultimate objective and principles, as well as its grouping of countries into Annex I, Annex II (the OECD members of Annex I), and non-Annex I Parties.

The Kyoto Protocol will share the Convention’s institutions, including its two subsidiary bodies and secretariat, while the Convention’s Conference of the Parties will serve as the “meeting of the Parties” to the Protocol, forming a body known as the *COP/MOP*.

The GEF, operating as the Convention’s financial mechanism, will also channel funding to developing countries under the Kyoto Protocol, while the IPCC is expected to play a similarly important role in support of the Protocol as it does for the Convention through its continued scientific, technical and methodological work.

The Kyoto Protocol and its rulebook set out in the Marrakesh Accords consist of five main elements:

- **Commitments:** At the heart of the Protocol lie its *legally-binding emissions targets* for Annex I Parties. All Parties are also subject to a set of *general commitments*.
- **Implementation:** To meet their targets, Annex I Parties must put in place *domestic policies and measures* that cut their greenhouse gas emissions. They may also offset their emissions by increasing the removal of greenhouse gases by *carbon sinks*. Supplementary to domestic actions, Parties may also use the three mechanisms – *joint implementation*, the *clean development mechanism* and *emissions trading* – to gain credit for emissions reduced (or greenhouse gases removed) at lower cost abroad than at home.
- **Minimizing impacts on developing countries:** The Protocol and its rulebook include provisions to address the specific needs and concerns of developing countries, especially those most vulnerable to the adverse effects of climate change and to the economic impact of response measures. These include the establishment of a new *adaptation fund*.
- **Accounting, reporting and review:** Rigorous monitoring procedures are in place to safeguard the Kyoto Protocol’s integrity, including an *accounting system*, regular *reporting* by Parties and *in-depth review* of those reports by expert review teams.

- **Compliance:** A *Compliance Committee*, consisting of a facilitative and an enforcement branch, will assess and deal with any cases of non-compliance.

These five main elements are discussed in more detail below.

THE DETAIL

Commitments

At the heart of the Kyoto Protocol lies its set of legally-binding emissions targets for industrialized countries. These amount to a total cut among all Annex I Parties of at least 5% from 1990 levels by 2008-2012.

The total cut is shared out so that each Annex I Party has its own individual emissions target. These individual targets, which are listed in the Protocol's Annex B, were decided upon in Kyoto through intense negotiation. The 15 member States of the European Union will take advantage of a scheme under the Protocol, known as a "bubble", to redistribute their -8% reduction targets among themselves.

Countries included in Annex B to the Kyoto Protocol and their emissions targets

Country	Target (1990* - 2008/2012)
EU-15, Bulgaria, Czech Republic, Estonia, Latvia, Liechtenstein, Lithuania, Monaco, Romania, Slovakia, Slovenia, Switzerland	-8%
US**	-7%
Canada, Hungary, Japan, Poland	-6%
Croatia	-5%
New Zealand, Russian Federation, Ukraine	0
Norway	+1%
Australia	+8%
Iceland	+10%

* Some economies in transition (EITs) have a baseline other than 1990.

*** The US has indicated its intention not to ratify the Kyoto Protocol.

Note: Although they are listed in the Convention's Annex I, *Belarus* and *Turkey* are not included in the Protocol's Annex B as they were not Parties to the Convention when the Protocol was adopted. Upon entry into force, *Kazakhstan*, which has declared that it wishes to be bound by the commitments of Annex I Parties under the Convention, will become an Annex I Party under the Protocol. As it had not made this declaration when the Protocol was adopted, Kazakhstan does not have an emissions target listed for it in Annex B.

The Protocol's emissions targets cover the six main greenhouse gases:

- Carbon dioxide (CO₂);
- Methane (CH₄);
- Nitrous oxide (N₂O);
- Hydrofluorocarbons (HFCs);
- Perfluorocarbons (PFCs); and
- Sulphur hexafluoride (SF₆)

Parties may offset their emissions by increasing the amount of greenhouse gases removed from the atmosphere by carbon sinks in the land use, land-use change and forestry (LULUCF) sector. However, only certain activities that remove greenhouse

gases are eligible, and subject to defined rules. Specific rules also govern the extent to which removals from the LULUCF sector can be used to help meet emissions targets. (see “The land use, land-use change and forestry sector” below).

All six greenhouse gases, including emissions and removals from the LULUCF sector, are put together in the same basket for accounting purposes, according to their respective global warming potentials (GWPs). GWPs, as defined by the IPCC, are a measure of the relative effect of a substance in warming the atmosphere over a given time period (100 years in the case of the Kyoto Protocol), compared against a value of one for carbon dioxide. Methane’s GWP over 100 years, for example, is 23, while that of SF₆ is 22,200.

Generally, Parties must reduce or limit their emissions from their 1990 levels (the *baseline*). The EITs, however, may choose a different baseline, as they can do under the Convention. In addition, any Party may choose a baseline of either 1990 or 1995 for its emissions of HFCs, PFCs and SF₆, to take account of the increased use of these gases in the early 1990s as replacements for ozone-depleting substances (such as chlorofluorocarbons – CFCs) being phased out under the 1987 Montreal Protocol.

Emissions targets must be achieved by the so-called *commitment period* of 2008-2012. However, in order to encourage early action, Parties must have already made “demonstrable progress” in meeting their commitments under the Kyoto Protocol by 2005, and must submit a report, by 1 January 2006, providing evidence of that progress.

A five-year commitment period was chosen rather than single target year, in order to smooth out annual fluctuations in emissions due to uncontrollable factors, such as the weather or economic cycles. The total emissions that an Annex I Party may emit over the commitment period and still meet its emissions target is known as its *assigned amount*. Prior to the start of the commitment period, each Annex I Party must submit a report providing emissions data for its baseline in order to formally establish its assigned amount. (In doing so, Annex I Parties need to make a number of choices, for example, whether to use 1990 or 1995 as a baseline for their emissions of HFCs, PFCs and SF₆).

If a Party achieves more substantial cuts in its emissions than is required by its target, it may carry over the difference to the next commitment period, subject to certain limits. Credits earned from increased removals by sinks cannot be carried over, while credits from joint implementation projects and the clean development mechanism (see below) can only be carried over up to 2.5% of the assigned amount.

The Kyoto Protocol’s targets may appear modest but, if they are met, this will mark a historic turnaround in the persistent upward trend in the emissions of many industrialized countries since the industrial revolution. As noted above, the emissions of many industrialized countries – except for the EITs and only a handful of OECD members – have continued to rise since 1990. This makes achieving the Protocol targets tougher than it may sound; for some, reducing their emissions below 1990 levels would in fact represent a reduction of over 20% compared to predicted emissions in 2012. In practice, the job is made easier by the Protocol’s mechanisms and the possibility of using greenhouse gas removals by sinks to offset emissions.

In addition to its emissions targets for Annex I Parties, the Kyoto Protocol also contains a set of more general commitments (mirroring those in the Convention) that reinforce the fundamental obligation of all Parties – both industrialized and developing – to tackle climate change. These commitments include preparing national climate change mitigation and adaptation programmes, taking steps to improve the quality of emissions data, promoting environmentally-friendly technology transfer, cooperating in scientific research and international climate observation networks, and supporting climate change education, training, public awareness and capacity-building initiatives.

Annex II Parties (the OECD countries) are committed to providing financial resources, through the GEF as the Convention and Protocol's financial mechanism, to help non-Annex I Parties meet their general commitments under the Protocol.

Policies and measures

To achieve the Protocol's targets, Annex I Parties will need to implement climate change policies and measures at home. The Protocol does not oblige governments to implement any particular policy, but rather gives an indicative list of policies and measures that might help mitigate climate change and promote sustainable development. This list includes:

- Enhancing energy efficiency;
- Protecting and enhancing greenhouse gas sinks;
- Promoting sustainable agriculture;
- Promoting renewable energy, carbon sequestration and other environmentally-friendly technologies;
- Removing subsidies and other market imperfections for environmentally-damaging activities;
- Encouraging reforms in relevant sectors to promote emission reductions;
- Tackling transport sector emissions; and
- Controlling methane emissions through recovery and use in waste management.

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

The Protocol paves the way for greater intergovernmental cooperation to help improve the effectiveness of climate policy, calling on Parties to share their experiences and exchange information on their mitigation measures. Work on “good practices” in policies and measures is currently underway in the SBSTA in preparation for the Protocol's entry into force. As part of the Marrakesh Accords, Parties decided that this work should aim at improving transparency, effectiveness and comparability of policies and measures (e.g. through specific criteria and

quantitative parameters). It should also aim at identifying further options for cooperation, in order to enhance the individual and combined effectiveness of policies and measures. A participatory process is envisaged, with workshops and other activities also involving non-governmental organizations (NGOs) from the business and environmental communities, along with interested international organizations.

Since the adoption of the Protocol, many businesses have increased their investments in climate-friendly technologies and activities at the domestic level, such as fuel cell cars, renewable energy and underground carbon dioxide storage. The IPCC, in its 2001 Third Assessment Report, confirms that recent technical progress in greenhouse gas emission reduction has been faster than anticipated, and that “no regrets” opportunities exist to cut emissions from some sources at low cost or even no net cost (with efficiency savings, for example, outweighing implementation costs). Many political, economic and cultural barriers must be overcome, however, to fully exploit this potential. While meeting the Protocol’s targets cannot be done for free, a smart mix of policy instruments, integrated with wider sustainable development and societal goals, can help keep costs down.

The land use, land-use change and forestry sector

The LULUCF sector can provide relatively low cost opportunities to combat climate change, either by increasing the removal of greenhouse gases from the atmosphere through carbon sinks (e.g. by planting trees), or by reducing emissions from this sector (e.g. by curbing deforestation). Uncertainties abound, however, and it is often difficult to calculate emissions and removals from this sector. Greenhouse gases may also be unintentionally re-released if a sink is damaged or destroyed, through forest fire or disease, for example. The negotiators of the Kyoto Protocol and the Marrakesh Accords wanted to make sure that these potential problems were addressed, and that no credit would be given for natural greenhouse gas removals that would have occurred anyway.

The rules governing the LULUCF sector, as set out in the Kyoto Protocol and the Marrakesh Accords, include four main elements:

- A set of principles to guide activities in the LULUCF sector;
- A list of eligible activities;
- Common definitions; and
- A four-tier capping system limiting the use of LULUCF activities to meet emissions targets.

The principles respond to concerns that activities to enhance sinks or reduce emissions in the LULUCF sector should not undermine the environmental integrity of the Protocol. The principles underscore, for example, the need for sound science and consistent methodologies, as well as the importance of conserving biodiversity. They specify that naturally-occurring removals should be excluded from the system, along with increased removals due to faster forest growth caused by the higher carbon dioxide concentrations and indirect nitrogen deposition associated with climate change. Any re-release of greenhouse gases from sinks due to human activities (e.g. forest fires started deliberately) must also be promptly accounted for.

The Kyoto Protocol establishes that emissions and removals from the following activities in the LULUCF sector shall be accounted for to help meet emissions targets:

- *Afforestation*;
- *Reforestation*; and
- *Deforestation*.

The Marrakesh Accords designate four additional eligible activities in the LULUCF sector. Parties must choose which of these activities they will use to help meet their emissions targets, and the choice is then fixed. These additional activities are:

- *Forest management*;
- *Cropland management*;
- *Grazing land management*; and
- *Revegetation*.

In order to ensure consistency and comparability among Parties, common definitions are established for the term “forest” and for each of the eligible activities. Some flexibility is allowed to take account of national circumstances, so that a Party may choose, for example, to select a minimum tree height of between 2 to 5 metres for its definition of a forest. Once the values are chosen, however, they remain fixed.

Removals of greenhouse gases from sinks generate so-called *removal units* (RMUs) that an Annex I Party can use to help meet its emissions target. RMUs are only deemed valid, however, once the removals have been verified by expert review teams under the Protocol’s reporting and review procedures (see below). Any emissions from eligible activities in the LULUCF sector, in turn, must be offset by greater emission cuts or removals elsewhere.

The extent to which Parties can account for emissions and removals in this way, for the first commitment period, is limited by the following four tier capping system:

Tier 1: If a Party’s afforestation, reforestation and deforestation activities result in more emissions than removals, then the Party may offset these emissions through removals from forest management activities, up to a total level of 9 megatons of carbon per year for the five year commitment period.

Tier 2: The extent to which removals from forest management activities can be accounted for to help meet emissions targets beyond 9 megatons of carbon per year is subject to an individual cap for each Party, listed in the Marrakesh Accords. This cap includes joint implementation projects (see below).

Tier 3: Emissions and removals from cropland management, grazing land management and revegetation can be used to help meet emissions targets on a net-net basis. That is, net changes in carbon stocks (emissions minus removals) during 1990, multiplied by five, will be subtracted from the net changes in carbon stocks (emissions minus removals) during the first commitment period in the lands where these activities take place.

Tier 4: For projects under the clean development mechanism, only afforestation and reforestation activities are eligible, and greenhouse gas removals from such projects may only be used to help meet emissions targets up to 1% of a Party's baseline for each year of the commitment period.

Work is continuing in the SBSTA on methodologies to reduce uncertainties and improve the calculation, monitoring and reporting of emissions and removals from the LULUCF sector. The IPCC is providing important input to the SBSTA's work, including through the development of "good practice guidance" for the LULUCF sector.

The Kyoto mechanisms

The Protocol broke new ground with its three innovative mechanisms: joint implementation, the clean development mechanism (CDM) and emissions trading. These aim to maximise the cost-effectiveness of climate change mitigation by allowing Parties to pursue opportunities to cut emissions, or enhance carbon sinks, more cheaply abroad than at home. The cost of curbing emissions varies considerably from region to region as a result of differences in, for example, energy sources, energy efficiency and waste management. It therefore makes economic sense to cut emissions, or increase removals, where it is cheapest to do so, given that the impact on the atmosphere is the same.

However, there have been concerns that the mechanisms could allow Parties to avoid taking climate change mitigation action at home, confer a "right to emit" on certain Parties, or lead to exchanges of fictitious credits, which would undermine the Protocol's environmental goals. The negotiators of the Kyoto Protocol and Marrakesh Accords therefore sought to design a system that fulfilled the cost-effectiveness promise of the mechanisms, while addressing concerns about environmental integrity and equity.

The Marrakesh Accords thus recognize that the Kyoto Protocol has not created any "right, title or entitlement" to emit, and call on Annex I Parties to implement domestic action to reduce emissions, in a manner conducive to narrowing per capita differences between developed and developing countries, while working toward achievement of the ultimate objective of the Convention.

The Marrakesh Accords do not impose any concrete limits on the extent to which the mechanisms may be used to meet emissions targets. However, Annex I Parties must provide information in their national communications submitted under the Protocol demonstrating that their use of the mechanisms is "supplemental to domestic action", which must constitute "a significant element" of their efforts in meeting their commitments. This information is to be assessed by the facilitative branch of the Compliance Committee.

To be eligible to participate in the mechanisms, Annex I Parties must have ratified the Kyoto Protocol and be in compliance with their methodological and reporting commitments under the Protocol (for the first commitment period, some leeway is allowed for reporting on the LULUCF sector). Any questions over a Party's eligibility

will be dealt with by the Compliance Committee's enforcement branch, through an expedited procedure.

The operational rules of the mechanisms are based on openness and transparency. The proceedings of the CDM executive board and the Article 6 (joint implementation) supervisory committee will be open to observers, while all non-confidential information is to be made publicly accessible, including through the Internet. (There are safeguards in place to limit what type of information may be designated as confidential.) In addition, the Marrakesh Accords allow businesses, environmental NGOs and other "legal entities", to participate in the three mechanisms, albeit under the responsibility of their governments.

The three mechanisms operate on the basis of accounting units, which are tracked and recorded through *national registries* to be established and maintained by Annex I Parties. Joint implementation projects result in *emission reduction units (ERUs)*, CDM projects generate *certified emission reductions (CERs)* and, under emissions trading, Annex I Parties may exchange *assigned amount units (AAUs)*, that is, some of the emissions included in their assigned amounts. They may also exchange CERs and ERUs, as well as RMUs generated through sink activities in the LULUCF sector. These units are all equal to one metric tonne of carbon dioxide equivalent (calculated using GWPs), and will all have their own unique serial number.

Joint implementation

Joint implementation allows Annex I Parties to implement projects that reduce emissions, or increase removals by sinks, in the territories of other Annex I Parties. Emission reduction units – ERUs – generated by such projects can then be used by investing 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. While the term "joint implementation" does not appear in Article 6 of the Protocol where this mechanism is defined, it is often used as convenient shorthand.

A joint implementation project might involve, for example, replacing a coal-fired power plant with a more efficient combined heat and power plant, or reforesting land. In practice, joint implementation projects are most likely to take place in EITs, where there tends to be more scope for cutting emissions at low cost.

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 involving activities in the LULUCF sector (e.g. reforestation) must conform to the Protocol's wider rules on this sector, and Annex I Parties are to refrain from using ERUs generated from nuclear energy to meet their targets. Projects starting from the year 2000 that meet the above rules may be listed as joint implementation projects. However, ERUs may only be issued after 2008.

There are two possible procedures for carrying out a joint implementation project.

The first procedure (often called *track one*) applies when the host Party fully meets all the eligibility requirements related to the Protocol's methodological and reporting

obligations. In this situation, the host Party may apply its own procedures to projects, issue ERUs and transfer them to the investing Party.

The second procedure (*track two*) applies if the host Party does not meet all the eligibility requirements. In such cases, the amount of ERUs generated by a project must be verified under a procedure supervised by the 10-member **Article 6 supervisory committee**, which is to be set up by the COP/MOP at its first meeting. This allows joint implementation projects to begin operation before the host Party meets all the eligibility requirements. However, the host Party must meet several of the requirements before it may issue and transfer ERUs (it must, for example, have established its assigned amount and have submitted its most recent required emission inventory).

Under track two, project participants must prepare a project design document for a proposed joint implementation project. This document is then evaluated by an independent organization— known as an *independent entity* – that has been accredited to carry out this work by the Article 6 supervisory committee. The aim of the evaluation, which includes an opportunity for public comment on the proposed project, is to make sure that the project has an appropriate project-specific, transparent and conservative *baseline* (the starting point for measuring emission reductions or removals), along with a *monitoring plan* to ensure that emissions and removals can be accurately estimated. The baseline and monitoring plan must be devised according to standard criteria, and the project design document should also include an assessment of the project’s environmental impacts.

Based on its evaluation, the independent entity will determine whether the project should proceed. Unless a project participant or at least three supervisory committee members request a review of the project, it can then go ahead after 45 days. Once a project is underway, project participants must submit a report to the independent entity on the estimated emission reductions or removals generated by the project. The independent entity will review this report and determine the emission reductions or removals that may be issued as ERUs by the host Party. Unless a project participant or at least three supervisory committee members request a review, these will be deemed valid after 15 days. Subject to it having met the necessary eligibility requirements, the host Party may then issue the ERUs and transfer them to the investing Party.

Clean development mechanism

The CDM allows Annex I Parties to implement projects that reduce emissions in the territories of non-Annex I Parties. The certified emission reductions – CERs – generated by such projects can be used by Annex I Parties to help meet their emissions targets, while the projects also help non-Annex I Parties to achieve sustainable development and contribute to the ultimate objective of the Convention.

The rulebook for the CDM set forth in the Marrakesh Accords focuses on projects that reduce emissions. Rules are being developed, however, for adoption at COP 9, for including afforestation and reforestation activities in the CDM for the first commitment period. Annex I Parties will be limited in how much they may use CERs from such sink projects towards their targets, up to 1% of the Party’s emissions in its base year. for each of the five years of the commitment period.

Preliminary version

A CDM project might then involve, for example, a rural electrification project using solar panels, or the reforestation of degraded land. As with joint implementation projects, Annex I Parties are to refrain from using CERs generated through nuclear energy to meet their emissions targets.

The CDM is expected to generate investment in developing countries, especially from the private sector, and promote the transfer of environmentally sound technologies in that direction. However, the finance and technology transfer commitments of Annex II Parties under the Convention and the Kyoto Protocol are separate and remain valid. Furthermore, public funding for CDM projects must not result in the diversion of official development assistance.

CDM projects must have the approval of all Parties involved, and this may be gained from *designated national authorities* (to be set up by each Annex I and non-Annex I Party). Projects must lead to real, measurable and long-term benefits related to the mitigation of climate change, in the form of emission reductions or greenhouse gas removals that are additional to any that would have occurred without the project.

The Protocol envisages a prompt start to the CDM, allowing CERs to accrue from projects from the year 2000 onwards. The election of the CDM executive board at COP 7, and the beginning of its work, has already put this prompt start into effect.

The 10-member *executive board* supervises the CDM, operating under the authority of the COP/MOP (a role being performed by the COP until the COP/MOP meets). Key initial tasks of the executive board are to develop simplified procedures to encourage small-scale projects, notably for renewable energy and energy efficiency activities, and to accredit independent organizations, known as *operational entities*, pending their formal designation by the COP or COP/MOP. These operational entities play an important role in the CDM project cycle, which is described below.

CDM projects must be based on a project-specific, transparent and conservative *baseline* (the starting point for measuring emission reductions or removals), and must have in place a rigorous *monitoring plan* to collect accurate emissions data. The baseline and monitoring plan must be devised according to an approved methodology. If the project participants wish to use a new methodology, it must be authorized and registered by the executive board.

In order to implement a CDM project, the project participants must prepare a project design document, including a description of the baseline and monitoring plan to be used, an analysis of environmental impacts, comments received from local stakeholders and a description of the additional environmental benefits that the project will generate. An operational entity will then review the project design document and, after providing an opportunity for public comment, decide whether or not to *validate* it. If a project is duly validated, the operational entity will forward it to the executive board for formal *registration*. Unless a project participant or at least three executive board members request a review of the project, its registration will be deemed final after eight weeks.

Once a project is up and running, participants will *monitor* the project. 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 usually be a different operational entity to that which validated the project design document.) Following a detailed review of the project, which may include an on-site inspection, the operational entity will produce a verification report and, if all is well, it will then *certify* the CERs as legitimate. Unless a project participant or three executive board members request a review within 15 days, the executive board will *issue* the CERs and distribute them to project participants as requested. These six steps – validation, registration, monitoring, verification, certification and issuance – make up the CDM project cycle.

Finally, the CERs generated by projects will be subject to a levy, termed the “share of the proceeds”. Two percent of the CERs of each project will be paid into a newly-created *adaptation fund* to help particularly vulnerable developing countries adapt to the adverse effects of climate change (projects in least developed countries are exempt from this part of the levy in order to promote the equitable distribution of projects). Another percentage, yet to be determined, is to cover the CDM’s administrative costs.

Emissions trading

Through emissions trading, Annex I Parties may acquire assigned amount units (AAUs) from other Annex I Parties that find it easier, relatively speaking, to meet their emissions targets. This enables Parties to utilize lower cost opportunities to curb emissions or increase removals, irrespective of where those opportunities exist, in order to reduce the overall cost of mitigating climate change. Similarly, Annex I Parties may also acquire CERs (from CDM projects), ERUs (from joint implementation projects), or RMUs (from sink activities) from other Annex I Parties.

In order to address the concern that some Parties could “over-sell” and then be unable to meet their own targets, each Annex I Party is required to hold a minimum level of AAUs, CERs, ERUs and/or RMUs. This is known as the *commitment period reserve* and cannot be traded. It is calculated as 90% of the Party’s assigned amount, or as the amount of emissions reported in the Party’s most recent emission inventory (multiplied by five, for the five years of the commitment period), whichever is the lower figure. If an Annex I Party goes below its commitment period reserve, it is given 30 days to restore the reserve to its required level. (ERUs verified through the Article 6 supervisory committee, however, can be freely transferred, irrespective of the level of the commitment period reserve.)

The registry system

A computerized system of registries will keep track of transactions in AAUs, CERs, ERUs and RMUs. There are three components to the registry system:

Each Annex I Party must establish and maintain a *national registry*. This will contain accounts for holding AAUs, CERs, ERUs and RMUs by the Party, as well as by any legal entities (such as businesses) authorized by the Party to hold them. It will also contain accounts for setting units aside to comply with emissions targets at the end of the commitment period (“retirement”), and for removing units from the system

("cancellation"). Transactions between Parties or between account holding legal entities will take place through these national registries.

The executive board of the CDM will establish and maintain a *CDM registry*. This will contain CER accounts for non-Annex I Parties participating in the CDM.

In addition, the secretariat will establish and maintain a *transaction log*. This will verify transactions of AAUs, CERs, ERUs and RMUs as they are proposed, including their issuance, transfers and acquisitions between registries, cancellation and retirement. If any transaction is found not to be in order, the registry is required to stop the transaction.

Minimizing impacts on developing countries

The Protocol echoes the Convention in paying special attention to the concerns of developing countries, especially those particularly vulnerable either to the adverse impacts of climate change or to the implementation of response measures, along with the specific needs of least developed countries. The Protocol therefore commits Annex I Parties to strive to implement their emissions targets through policies that will minimize adverse impacts on developing countries.

The Marrakesh Accords require Annex I Parties to report on an annual basis on the actions they are taking to meet this commitment. The information reported may be considered by the facilitative branch of the Compliance Committee. Non-Annex I Parties, in turn, are invited to provide information on their specific needs and concerns. The Marrakesh Accords also call attention to certain actions that should be prioritised in order to minimize adverse impacts on developing countries. These include:

- Removal of subsidies for environmentally-unfriendly technologies;
- Development of non-energy uses of fossil fuels, advanced fossil-fuel technologies and carbon capture/storage technologies;
- Capacity building to improve efficiency; and
- Assisting developing countries that are highly dependent on fossil fuels to diversify their economies.

In addition, as noted above in the discussion on the CDM, the Marrakesh Accords established an *adaptation fund*. The fund, which will be managed by the GEF (as the Convention and Protocol's financial mechanism), is to be funded not only by the adaptation levy on CDM projects, but also by additional contributions from Annex I Parties. The adaptation fund will finance concrete adaptation projects and programmes in developing countries, along with such activities as supporting capacity building. Annex I Parties that intend to ratify the Kyoto Protocol are required to report on their contributions to the fund on an annual basis, and these reports will be reviewed by the COP/MOP.

Accounting, reporting and review

In order to assess compliance with the Kyoto Protocol, reliable information will be needed on the emissions of Parties over the commitment period. the actions they have

taken to implement the Protocol, and transactions under the mechanisms. Recognizing this, the Kyoto Protocol and the Marrakesh Accords include rigorous accounting, reporting and review procedures, which build on experience gained in the climate change process over the past decade.

Accounting

In addition to its ***national registry*** for recording transactions in AAUs, CERs, ERUs and RMUs (see “The registry system” above), each Annex I Party must have in place a ***national system*** to estimate its greenhouse gas emissions and removals. Prior to the start of the commitment period, each Annex I Party must submit a report describing its national system and registry, as well as providing the emissions data needed to formally establish its assigned amount.

Expert review teams will assess this information. Assuming no questions are raised, the assigned amount of each Annex I Party is then recorded in a ***compilation and accounting database*** held with the secretariat. This database will record the annual emissions of Parties (as reported in their annual inventories), along with their total annual transactions in AAUs, CERs, ERUs and RMUs.

The ***transaction log*** maintained by the secretariat will serve as an added monitoring tool (see “The registry system” above).

Every year, the secretariat will publish a ***compilation and accounting report*** for each Annex I Party, based on the information contained in its database. This report will be forwarded to the COP/MOP, the Compliance Committee and the Party concerned. The final secretariat report published at the end of the commitment period will form the basis for assessing whether Annex I Parties have complied with their emissions targets. This will be done by comparing each Party’s emissions during the commitment period with its holdings of AAUs, CERs, ERUs and RMUs in its national registry.

Reporting and review

Each Annex I Party must submit an ***annual inventory*** of its greenhouse gas emissions and removals to the secretariat, calculated using standard guidelines based on IPCC methodologies. The annual inventory will also include other information that must be submitted annually, for example, on any changes to national registries or national systems, on transfers and acquisitions of AAUs, CERs, ERUs and RMUs, and on actions taken to minimize adverse impacts on developing countries. Because they will be more detailed, annual inventories under the Kyoto Protocol will supersede those currently required under the Convention.

Expert review teams will check the annual inventories, to make sure they are complete, accurate and conform to the guidelines. The work of the expert review teams will be conducted through desk reviews and centralized reviews, and will involve at least one country visit during the commitment period. If any problems are found, the expert review team may recommend adjusting the data to make sure that emissions are not over or underestimated, as far as can be judged. If there is disagreement between a Party and the expert review team about the data adjustment

that should be made, the Compliance Committee will intervene. Aside from recommending data adjustments, the expert review team has the mandate to raise any apparent implementation problems – known as *questions of implementation* – with the Compliance Committee. Once any problems or questions of implementation have been resolved, the compilation and accounting database will be updated with a record of the Party's emissions for that year.

Annex I Parties must also submit regular *national communications* that will include information on the actions they are taking to implement the Protocol (these will be merged with national communications submitted under the Convention). Although no fixed timetable has yet been set, they will probably be required every three to five years. Information to be reported in national communications includes:

- Details of a Party's national system and national registry;
- How a Party's use of the mechanisms is supplemental to domestic action;
- Details of the policies and measures implemented by Parties to meet their emissions targets; and
- 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.

Each national communication submitted under the Kyoto Protocol will be subject to an in-depth review by an expert review team, including an in-country visit. The expert review team will prepare a report on its review, identifying any potential implementation problems that have emerged.

Expert review teams for both annual inventories and national communications will be coordinated by the secretariat. They will be composed of experts selected by the secretariat from a roster of individuals nominated by Parties. The teams will be led by two lead reviewers, one each from an Annex I and a non-Annex I Party. Expert reviewers will have to undergo training, to ensure that they possess the necessary competence to carry out reviews.

Compliance

The compliance regime for the Kyoto Protocol, as elaborated by the Marrakesh Accords, is among the most comprehensive and rigorous in the international arena. It makes up the “teeth” of the Kyoto Protocol, facilitating, promoting and enforcing adherence to the Protocol's commitments.

The compliance regime consists of a *Compliance Committee* made up of two branches: a *facilitative branch* and an *enforcement branch*, both of which are composed of 10 members. As their names suggest, the facilitative branch aims to provide advice and assistance to Parties in order to promote compliance, whereas the enforcement branch has the power to apply certain consequences on Parties not meeting their commitments.

Decisions of the facilitative branch may be taken by a three-quarters majority, but decisions of the enforcement branch require, in addition, a double majority of both Annex I and non-Annex I Parties. The Committee also meets in a *plenary* composed

of members of both branches, and a *bureau* made up of the Chairperson and vice-Chairperson of each branch, supports its work.

Certain commitments fall under the remit of one or the other branch. The requirement that use of the mechanisms be “supplemental” to domestic action, for example, is under the purview of the facilitative branch, as is the commitment of Annex I Parties to strive to minimize adverse impacts on developing countries. The facilitative branch also provides “early-warning” of cases where a Party is in danger of not complying with its emissions targets. In response to problems, the facilitative branch can make recommendations and also mobilize financial and technical resources to help Parties comply.

The enforcement branch, for its part, is responsible for determining whether an Annex I Party is not complying with its emissions target or reporting requirements, or has lost its eligibility to participate in the mechanisms. It can also decide whether to adjust a Party’s inventory or correct the compilation and accounting database, in the event of a dispute between a Party and the expert review team.

In the case of non-compliance with emissions targets, Annex I Parties are granted 100 days after the completion of the expert review of their final emission inventory for the commitment period to make up any shortfall in compliance (e.g. by acquiring AAs, CERs, ERUs or RMUs). If, at the end of this period, a Party has still missed its emissions target, it must make up the difference in the second commitment period, plus a penalty of 30%. It will also be barred from “selling” under emissions trading and, within three months, it must develop a *compliance action plan* detailing the action it will take to make sure that its target is met in the second commitment period.

Any Party not complying with reporting requirements must develop a similar plan and Parties that are found not to meet the criteria for participating in the mechanisms will have their eligibility withdrawn. In all cases, the enforcement branch will make a public declaration that the Party is in non-compliance and will also make public the consequences to be applied.

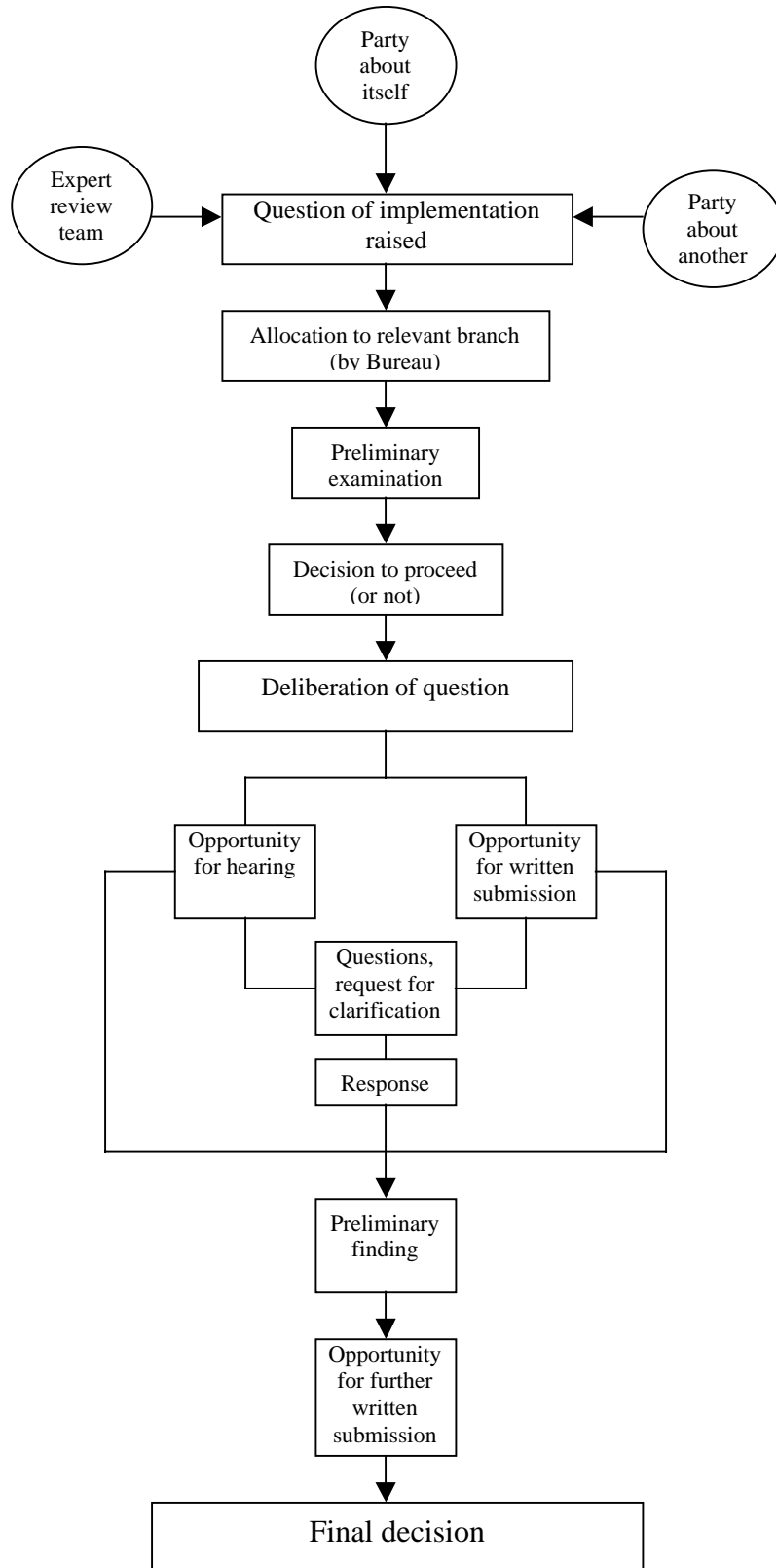
A potential compliance problem – a *question of implementation* – can be raised either by an expert review team, or by a Party about its own compliance (for example, if it wishes to seek help from the facilitative branch), or by a Party raising concerns about another Party. After a preliminary examination, the question of implementation will be considered in the relevant branch of the Compliance Committee. The Compliance Committee will base its deliberations on reports from expert review teams, the subsidiary bodies, Parties and other official sources. Competent intergovernmental and non-governmental organizations may also submit relevant factual and technical information to the relevant branch.

The Marrakesh Accords set out more detailed additional procedures (see figure below) with specific timeframes for the enforcement branch, including the opportunity for a Party facing the Compliance Committee to make formal written submissions and request a hearing where it can present its views and call on expert testimony. In the case of non-compliance with emissions targets, the Party can also lodge an appeal to the COP/MOP if that Party believes it has been denied due process.

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An expedited procedure with shorter timeframes applies to questions on eligibility to participate in the mechanisms. A Party may request, either through an expert review team or directly to the enforcement branch, to have its eligibility restored if it believes it has rectified the problem and is again meeting the relevant criteria.

The compliance procedure for the enforcement branch



THE ROAD AHEAD

The climate change process has evolved rapidly since the Convention was adopted a decade ago. The most high profile development has undoubtedly been the adoption of the Kyoto Protocol, with its legally-binding emissions targets for industrialized countries. However, progress in implementing the Convention has also been of critical importance to forging an effective response to climate change.

The adoption of the Marrakesh Accords, setting out the details of the Kyoto Protocol's rulebook, should now enable widespread ratification of the Protocol, including by most Annex I Parties, and its entry into force. Many Parties have indicated a wish that this should take place in 2002, in time for the World Summit on Sustainable Development and the Convention's tenth anniversary.

The rules for entry into force of the Kyoto Protocol require 55 Parties to the Convention to ratify (or approve, accept, or accede to) the Protocol, including Annex I Parties accounting for 55% of that group's carbon dioxide emissions in 1990. These criteria ensure that no single Party can veto the Protocol's entry into force. The table below, which shows the shares of Annex I Party emissions, will serve as the basis for calculating when the threshold has been passed.

When the Kyoto Protocol enters into force, attention will shift to the implementation of its legally-binding emissions targets. The hope is that these targets, accompanied by the mechanisms and rigorous compliance procedures, will help to finally rein in the persistently rising emissions of many industrialized countries. For its part, the Convention – including its fundamental obligation on all its 186 Parties to respond to climate change – will continue to serve as the focus for intergovernmental action to combat climate change for both developing countries and Annex I Parties who do not ratify the Protocol. It will also continue to provide the basis for the critical work on reporting, finance, technology transfer and other key issues that make up the backbone of the climate change process.

The Marrakesh Accords have launched a new implementation phase for both the Convention and the Kyoto Protocol, based on an architecture of institutions, rules, procedures and mechanisms that is without doubt among the most elaborate of any international environmental agreement. A focus on implementation, however, does not mean the end of negotiations in the climate change process. Talks will resume on further developing both the Convention and Kyoto Protocol rulebooks. New rounds of negotiations will also be launched to strengthen and extend commitments, in order to move closer to achieving the ultimate objective of the Convention. The Kyoto Protocol was never intended to solve the problem of climate change by the end of the first commitment period in 2012. Instead, it envisages a long-term process of five-year commitment periods, with negotiations on targets for the second commitment period (presumably for 2013-2017) due to start in 2005. The whole Protocol is also scheduled for review at COP/MOP 2 which, depending on the date of entry into force of the Protocol, may take place around the same time.

The stage is thus set for the continuous development of the climate change process, with implementation and negotiation going hand in hand. The intergovernmental

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process on climate change will continue to evolve as scientific knowledge improves and political will increases.

Annex I Party carbon dioxide emissions in 1990 and their share of the total for the purpose of determining entry into force of the Kyoto Protocol

Party	1990 CO₂ emissions (Gg)	%
Australia	288,965	2.1
Austria*	59,200	0.4
Belgium *	113,405	0.8
Bulgaria	82,990	0.6
Canada	457,441	3.3
Czech Republic	169,514	1.2
Denmark*	52,100	0.4
Estonia	37,797	0.3
Finland*	53,900	0.4
France*	366,536	2.7
Germany*	1,012,443	7.4
Greece*	82,100	0.6
Hungary	71,673	0.5
Iceland	2,172	0.0
Ireland*	30,719	0.2
Italy*	428,941	3.1
Japan	1,173,360	8.5
Latvia	22,976	0.2
Liechtenstein	208	0.0
Luxembourg*	11,343	0.1
Monaco	71	0.0
Netherlands*	167,600	1.2
New Zealand	25,530	0.2
Norway	35,533	0.3
Poland	414,930	3.0
Portugal*	42,148	0.3
Romania	171,103	1.2
Russian Federation	2,388,720	17.4
Slovakia	58,278	0.4
Spain*	260,654	1.9
Sweden*	61,256	0.4
Switzerland	43,600	0.3
United Kingdom*	584,078	4.3
USA	4,957,022	36.1
<i>*15 EU member states combined</i>		<i>24.2</i>

The table does not include Annex I Parties that had not yet submitted a national communication under the Convention when the Protocol was adopted. The emissions of these Parties (Croatia, Lithuania, Slovenia and Ukraine) will not be counted towards the entry into force threshold. Figures exclude the land-use change and forestry sector.