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PRESS RELEASE

Talks to build global consensus for post-2000 action on climate change

Bonn, October 1999 – International efforts to tackle the problem of global climate change will continue at a major United Nations conference in Bonn, Germany from 25 October to 5 November. Some 5,000 participants from 150 countries are expected to attend.

Ministers and senior government officials face a full agenda of political and technical issues that will determine how the international community goes about minimizing emissions of carbon dioxide and other greenhouse gases over the critical first decade of the 21st century.

Emissions continue to rise around the world, with emissions from developed countries expected to increase 18% above 1990 levels by around 2010 unless effective action is taken. An agreed plan for taking such action is set out in the 1997 Kyoto Protocol, which would commit developed countries to individual emissions targets for the period 2008-2012. The overall result would be a decline of over 5 per cent in developed country emissions compared to 1990 levels.

Developed countries are deeply concerned about the economic implications of this rapid transition to a lower-emissions economy, including the potential impact on trade competitiveness, both among themselves and vis-à-vis those developing countries that are now industrializing. The Kyoto Protocol will only enter into force and become legally binding when at least 55 countries, including developed countries accounting for at least 55% of developed country emissions, have ratified. So far, only 14 countries – all from the developing world – have ratified the Protocol.

The current negotiations will define the rules by which developed countries could lower the costs of meeting their targets by reducing emissions in other countries through the so-called flexibility mechanisms. A related issue will be determining the consequences for a country of failing to comply with the Protocol targets. The talks may also open the way for key developing countries to become more involved in addressing climate change in the future. The negotiations are scheduled to conclude at the next major conference, to be held in The Hague, The Netherlands, possibly in November 2000.

"The crunch will come in The Hague," said Michael Zammit Cutajar, Executive Secretary of the Convention. "The final results will have to satisfy the major industrial countries, trigger their ratification of the Protocol, and offer incentives to developing countries to take further action in the future. The Bonn conference must build confidence in a successful outcome at The Hague by adopting important technical decisions, sending positive signals to business and industry, and engaging Ministers fully in the task of focusing and speeding up the negotiations."

The Protocol's three flexibility mechanisms still need to be made fully operational. Priority will be given to finalizing the clean development mechanism (CDM). The CDM will promote sustainable development by encouraging investments in developing-country projects that use clean technologies.

Developed countries will receive credit against their targets for emissions avoided by these projects. A levy on the CDM will fund projects that help countries to adapt to future climate change impacts.

A joint implementation (JI) programme will offer credits for contributing to projects in other developed countries (including the countries of Central/Eastern Europe and the former Soviet Union). An international emissions trading regime will allow developed countries to buy and sell emissions credits amongst themselves.

The Parties must elaborate the nature and scope of these mechanisms, the criteria for project eligibility, baselines for measuring a project's contribution to reducing emissions, the roles of various institutions, and an accounting system for allocating credits. The environmental credibility of the Protocol will be strongly influenced by these details.

In addition, credibility demands that there be procedures regarding compliance with the emissions targets; this is a difficult issue and, in the case of legally-binding consequences for non-compliance, would eventually require an amendment to the Protocol.

Also essential is an agreement on how to measure and account for emissions cuts. There is a need for more rigorous criteria and national systems for estimating net emissions and for reporting and reviewing progress. Of particular importance is the technically complex and politically charged question of how to estimate the removal and storage of carbon from the atmosphere by forests and other natural "sinks". By clearly defining what counts as a sink, and thus how much sink enhancement can contribute to meeting a country's emissions target, these discussions, too, could have an important impact on the costs of meeting the targets.

Strengthening the contribution of developing countries to addressing climate change will require agreement on a number of outstanding financial and technology issues. Under the Convention, developing countries are to gather and analyze national data, incorporate climate change concerns into national planning, and submit information about all this activity for consideration by the international community.

To do this they need assistance from developed countries in the form of financial support, capacity building, and access to and transfer of technology. Because a long-term solution to climate change will require the increasing involvement of developing countries, this cooperative relationship needs to be made more effective.

The Bonn conference is known formally as the Fifth Session of the Conference of the Parties (COP 5) of the United Nations Framework Convention Climate Change (UNFCCC). The COP, which will be chaired by Jan Szyszko, Minister of Environmental Protection, Natural Resources and Forestry of Poland, will open on 25 October and then resume on 2 November. The interim days of the conference will be taken up by the 11th meetings of the Convention's Subsidiary Body on Scientific and Technological Advice (SBSTA) and its Subsidiary Body on Implementation (SBI). A 48-hour high-level segment for ministers and heads of delegation will take place from 2 - 4 November.

Note to journalists: The conference will be held at the Maritim Hotel in Bonn. For information on accreditation and on press facilities, please contact Axel Wustenhagen at (+49-228) 815 2770, fax (+49-228) 815 1999, e-mail unic@uno.de. For interviews or additional information please contact Michael Williams at (+41-22) 917 8242/44, fax (+41-22) 797 3464, e-mail mwilliams@unep.ch. The meeting documents are available on the Internet at <http://www.unfccc.de>.

PRESS BACKGROUNDER

A survey of climate change basics

An introduction to climate change

Human activities are releasing greenhouse gases into the atmosphere. Carbon dioxide is produced when fossil fuels are used to generate energy or when forests are cut down and burned. Methane and nitrous oxide are emitted from agricultural activities, changes in land use, or other sources. Artificial chemicals called halocarbons (CFCs, HFCs, PFCs) and other long-lived gases such as sulphur hexafluoride (SF₆) are released by industrial processes. Ozone in the lower atmosphere is generated indirectly by automobile exhaust fumes.

Rising levels of greenhouse gases are expected to cause climate change. In the long-term, the earth must shed energy into space at the same rate at which it absorbs energy from the sun. By increasing the atmosphere's ability to absorb infra-red radiation, humanity's greenhouse gas emissions will force the climate to somehow restore the balance in energy flows. This adjustment will include a "global warming" of the earth's surface and lower atmosphere. But this is only part of the story. Warming up is the simplest way for the climate to get rid of the extra energy. But even a small rise in temperature will be accompanied by many other changes: in cloud cover and wind patterns, for example. Some of these changes may act to enhance the warming (positive feedbacks), others to counteract it (negative feedbacks).

According to the Intergovernmental Panel on Climate Change (IPCC), climate models predict that the global temperature will rise by about 1-3.5°C by the year 2100. This projected change is larger than any climate change experienced over the last 10,000 years. It is based on current emissions trends and assumes that no efforts are made to limit greenhouse gas emissions. There are many uncertainties about the scale and impacts of climate change, particularly at the regional level. Because of the delaying effect of the oceans, surface temperatures do not respond immediately to greenhouse gas emissions, so climate change will continue for many decades after atmospheric concentrations have stabilized. Meanwhile, the balance of the evidence suggests that the climate may have already started responding to past emissions.

Climate change is likely to have a significant impact on the global environment. In general, the faster the climate changes, the greater will be the risk of damage. The mean sea level is expected to rise 15-95 cm by the year 2100, causing flooding of low-lying areas and other damage. Climatic zones (and thus ecosystems and agricultural zones) could shift towards the poles by 150-550 km in the mid-latitude regions. Forests, deserts, rangelands, and other unmanaged ecosystems would face new climatic stresses. As a result, many will decline or fragment, and individual species will become extinct.

Human society will face new risks and pressures. Food security is unlikely to be threatened at the global level, but some regions are likely to experience food shortages and hunger. Water resources will be affected as precipitation and evaporation patterns change around the world. Physical infrastructure will be damaged, particularly by sea-level rise and by extreme weather events. Economic activities, human settlements, and human health will experience many direct and indirect effects. The poor and disadvantaged are the most vulnerable to the negative consequences of climate change.

People and ecosystems will need to adapt to future climatic regimes. Past and current emissions have already committed the earth to some degree of climate change in the 21st century. Adapting to these effects will require a good understanding of socio-economic and natural systems, their sensitivity to climate change, and their inherent ability to adapt. Many strategies are available for adapting to the

expected effects of climate change.

Stabilizing atmospheric concentrations of greenhouse gases will demand a major effort. Based on current trends, the total climatic impact of rising greenhouse gas levels will be equal to that caused by a doubling of pre-industrial CO₂ concentrations by 2030, and a trebling or more by 2100. Freezing global CO₂ emissions at their current levels would postpone CO₂-doubling to 2100; emissions would eventually have to fall to about 30% of their current levels for concentrations to stabilize at doubled-CO₂ levels sometime in the future. Given an expanding world economy and growing populations, this would require dramatic improvements in energy efficiency and fundamental changes in other economic sectors as well as in personal lifestyles.

Key greenhouse gases affected by human activities							
	CO₂	CH₄	N₂O	CFC-11	HCFC-22	CF₄	SF₆
Pre-industrial level	~280 ppmv	~700 ppbv	~275 ppbv	zero	zero	zero	zero
1994 concentration	358 ppmv	1720 ppbv	312 [§] ppbv	268 [§] pptv	110 pptv	72 [§] pptv	3-4 pptv
Rate of increase *	1.5 ppmv/yr 0.4%/yr	10 ppbv/yr 0.6%/yr	0.8 ppbv/yr 0.25%/yr	0 pptv/yr 0%/yr	5 pptv/yr 5%/yr	1.2 pptv/yr 2%/yr	0.2pptv/yr ~5%/yr
Lifetime (years)	50-200÷	12÷÷	120	50	12	50,000	3,200

Notes: CO₂ (carbon dioxide), CH₄ (methane), N₂O (nitrous oxide), SF₆ (sulphur hexafluoride), and CF₄ (a perfluorocarbon, or PFC) are covered by the Kyoto Protocol. CFC-11 and HCFC-22 (a CFC replacement) are also ozone-depleting substances and thus addressed under the Montreal Protocol rather than under the climate change agreements. 1 ppmv = 1 part per million by volume; 1 ppbv = 1 part per billion by volume; 1 pptv = 1 part per trillion (million million) by volume.

[§] Estimated from 1992-93 data.

* The growth rates of CO₂, CH₄ and N₂O are averaged over the decade beginning 1984; halocarbon growth rates are based on recent years (1990s).

÷ No single lifetime for CO₂ can be defined because of the different rates of uptake by different sink processes.

÷÷ This has been defined as an adjustment time which takes into account the indirect effect of methane on its own lifetime.

This table adapted from "Climate Change 1995", IPCC Working Group I, p. 15.

Many options for limiting emissions are available in the short- and medium-term. Policymakers can encourage energy efficiency and other climate-friendly trends in both the supply and consumption of energy. Key consumers of energy include industries, homes, offices, vehicles, and farms. Efficiency can be improved in large part by providing an appropriate economic and regulatory framework for consumers and investors. This framework should promote cost-effective actions, the best current and future technologies, and "no regrets" solutions that make economic and environmental sense irrespective of climate change. Taxes, regulatory standards, tradable emissions permits, information programmes, voluntary programmes, and the phase-out of counterproductive subsidies can all play a role. Changes in practices and lifestyles, from better urban transport planning to personal habits such as turning out the lights, are also important.

Reducing uncertainties about climate change, its impacts, and the costs of various response options is vital. In the meantime, it will be necessary to balance concerns about risks and damages with concerns about economic development. The prudent response to climate change, therefore, is to adopt a portfolio of actions aimed at controlling emissions, adapting to impacts, and encouraging scientific, technological, and socio-economic research.

The Climate Change Convention

The United Nations Framework Convention on Climate Convention is the foundation of global efforts to combat global warming. Opened for signature in 1992 at the Rio Earth Summit, its ultimate objective is the "stabilization of greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic [human-induced] interference with the climate system. Such a level should be achieved within a time-frame sufficient to allow ecosystems to adapt naturally to climate change, to ensure that food production is not threatened and to enable economic development to proceed in a sustainable manner."

The Convention sets out some guiding principles. The precautionary principle says that the lack of full scientific certainty should not be used as an excuse to postpone action when there is a threat of serious or irreversible damage. The principle of the "common but differentiated responsibilities" of states assigns the lead in combating climate change to developed countries. Other principles deal with the special needs of developing countries and the importance of promoting sustainable development.

Both developed and developing countries accept a number of general commitments. All Parties will develop and submit "national communications" containing inventories of greenhouse gas emissions by source and greenhouse gas removals by "sinks". They will adopt national programmes for mitigating climate change and develop strategies for adapting to its impacts. They will also promote technology transfer and the sustainable management, conservation, and enhancement of greenhouse gas sinks and "reservoirs" (such as forests and oceans). In addition, the Parties will take climate change into account in their relevant social, economic, and environmental policies; cooperate in scientific, technical, and educational matters; and promote education, public awareness, and the exchange of information related to climate change.

Industrialized countries undertake several specific commitments. Most members of the Organization for Economic Cooperation and Development (OECD) plus the states of Central and Eastern Europe (known collectively as Annex I countries) are committed to adopting policies and measures aimed at returning their greenhouse gas emissions to 1990 levels by the year 2000. They must also submit national communications on a regular basis detailing their climate change strategies. Several states may together adopt a joint emissions target. The countries in transition to a market economy are granted a certain degree of flexibility in implementing their commitments.

The richest countries shall provide "new and additional financial resources" and facilitate technology transfer. These so-called Annex II countries (essentially OECD members) will fund the "agreed full cost" incurred by developing countries for submitting their national communications. These funds must be "new and additional" rather than redirected from existing development aid funds. Annex II Parties will also help finance certain other Convention-related projects, and they will promote and finance the transfer of, or access to, environmentally sound technologies, particularly for developing country Parties. The Convention recognizes that the extent to which developing country Parties implement their commitments will depend on financial and technical assistance from the developed countries.

The supreme body of the Convention is the Conference of the Parties (COP). The COP comprises all the states that have ratified or acceded to the Convention (over 175 by May 1999). It held its first meeting (COP1) in Berlin in 1995 and meets on a yearly basis unless the Parties decide otherwise. The COP's role is to promote and review the implementation of the Convention. It will periodically review existing commitments in light of the Convention's objective, new scientific findings, and the effectiveness of national climate change programmes. The COP can adopt new commitments through amendments and protocols to the Convention; in December 1997 it adopted the Kyoto Protocol containing stronger emissions-related commitments for developed countries in the post-2000 period.

The Convention also establishes two subsidiary bodies. The Subsidiary Body for Scientific and Technological Advice (SBSTA) provides the COP with timely information and advice on scientific and

technological matters relating to the Convention. The Subsidiary Body for Implementation (SBI) helps with the assessment and review of the Convention's implementation. Two additional bodies were established by COP-1: the Ad hoc Group on the Berlin Mandate (AGBM), which concluded its work in Kyoto in December 1997, and the Ad hoc Group on Article 13 (AG13), which concluded its work in 1998.

A financial mechanism provides funds on a grant or concessional basis. The Convention states that this mechanism shall be guided by, and be accountable to, the Conference of the Parties, which shall decide on its policies, programme priorities, and eligibility criteria. There should be an equitable and balanced representation of all Parties within a transparent system of governance. The operation of the financial mechanism may be entrusted to one or more international entities. The Convention assigns this role to the Global Environment Facility (GEF) on an interim basis; in 1999 the COP decided to entrust the GEF with this responsibility on an on-going basis and to review the financial mechanism every four years.

The COP and its subsidiary bodies are serviced by a secretariat. The interim secretariat that functioned during the negotiation of the Convention became the permanent secretariat in January 1996. The secretariat arranges for sessions of the COP and its subsidiary bodies, drafts official documents, services meetings, collects data, compiles and transmits reports submitted to it, facilitates assistance to Parties for the compilation and communication of information, coordinates with secretariats of other relevant international bodies, and reports on its activities to the COP.

The Kyoto Protocol

The Kyoto Protocol to the United Nations Framework Convention on Climate Change strengthens the international response to climate change. Adopted at the third session of the Conference of the Parties (COP-3) in December 1997, it contains legally binding emissions targets for Annex I (developed) countries for the post-2000 period. By arresting and reversing the upward trend in greenhouse gas emissions that started in these countries 150 years ago, the Protocol promises to move the international community one step closer to achieving the Convention's objective.

The developed countries commit themselves to reducing their collective emissions of six key greenhouse gases by at least 5%. This group target will be achieved through cuts of 8% by Switzerland, most Central and East European states, and the European Union (the EU will meet its target by distributing different rates among its member states); 7% by the US; and 6% by Canada, Hungary, Japan, and Poland. Russia, New Zealand, and Ukraine are to stabilize their emissions, while Norway may increase emissions by up to 1%, Australia by up to 8%, and Iceland 10%. The six gases are to be combined in a "basket", with reductions in individual gases translated into "CO₂ equivalents" that are then added up to produce a single figure.

Each country's emission target must be achieved by the period 2008-2012. It will be calculated as an average over the five years. "Demonstrable progress" must be made by 2005. Cuts in the three most important gases -- carbon dioxide (CO₂), methane (CH₄), and nitrous oxide (N₂O) -- will be measured against a base year of 1990 (with exceptions for some countries with economies in transition). Cuts in three long-lived industrial gases -- hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulphur hexafluoride (SF₆) -- can be measured against either a 1990 or 1995 baseline. (A major group of industrial gases, chlorofluorocarbons, or CFCs, are dealt with under the 1987 Montreal Protocol on Substances that Deplete the Ozone Layer.)

Actual emissions reductions will be much larger than 5%. Compared to emissions levels projected for the year 2000, the richest industrialized countries (OECD members) will need to reduce their collective output by about 10%. This is because many of these countries will not succeed in meeting their earlier

non-binding aim of returning emissions to 1990 levels by the year 2000, and their emissions have in fact risen since 1990. While the countries with economies in transition have experienced falling emissions since 1990, this trend is now reversing. Therefore, for the developed countries as a whole, the 5% Protocol target represents an actual cut of around 20% when compared to the emissions levels that are projected for 2010 if no emissions-control measures are adopted.

Countries will have a certain degree of flexibility in how they make and measure their emission reductions. In particular, an international "emissions trading" regime will be established allowing industrialized countries to buy and sell emissions credits amongst themselves. They will also be able to acquire "emission reduction units" by financing certain kinds of projects in other developed countries. In addition, a "clean development mechanism" will promote sustainable development by enabling industrialized countries to finance emission-reduction projects in developing countries and to receive credit for doing so. The reductions achieved through these various schemes are to be supplemental to domestic action. The operational guidelines are being elaborated under a two-year Plan of Action that is to conclude by COP-6 in late 2000 or early 2001.

They will pursue emissions cuts in a wide range of economic sectors. The Protocol encourages governments to cooperate with one another, improve energy efficiency, reform the energy and transportation sectors, promote renewable forms of energy, phase out inappropriate fiscal measures and market imperfections, limit methane emissions from waste management and energy systems, and protect forests and other carbon "sinks". The measurement of changes in net emissions (calculated as emissions minus removals of CO₂) from forests is methodologically complex and needs to be clarified.

The Protocol will advance the implementation of existing commitments by all countries. Under the Convention, both developed and developing countries agree to take measures to limit emissions and promote adaptation to future climate change impacts; submit information on their national climate change programmes and inventories; promote technology transfer; cooperate on scientific and technical research; and promote public awareness, education, and training. The Protocol also reiterates the need to provide "new and additional" financial resources to meet the "agreed full costs" incurred by developing countries in carrying out these commitments.

The Conference of the Parties (COP) of the Convention will also serve as the meeting of the Parties (MOP) for the Protocol. This structure is expected to reduce costs and facilitate the management of the intergovernmental process. Parties to the Convention that are not Parties to the Protocol will be able to participate in Protocol-related meetings as observers.

The new agreement will be periodically reviewed. The Parties will take "appropriate action" on the basis of the best available scientific, technical, and socio-economic information. The first review will take place at the second COP session serving the Protocol. Talks on commitments for the post-2012 period must start by 2005.

The Protocol was signed by 83 countries plus the European Community during a one-year signature period that concluded 15 March 1999. It will enter into force 90 days after it has been ratified by at least 55 Parties to the Convention, including developed countries representing at least 55% of the total 1990 carbon dioxide emissions from this group. (Governments that did not sign the Protocol during the signatory period may still become Parties through the procedures of acceptance, approval or accession.) In the meantime, governments will continue to carry out their commitments under the Climate Change Convention. They will also work on many practical issues relating to the Protocol and its future implementation at their regular COP and subsidiary body meetings.