Friends of the Earth
Les Amis de la Terre
Amigos de la Tierra

Friends of the Earth International
Climate Change Briefing

THE HAGUE SUMMIT

POLITICIANS WRANGLE WHILE THE WORLD WARMS

The most important climate summit yet starts in the Hague on Monday 13th November. It is expected to last for two weeks. The summit could be the last chance to rescue the historic international agreement signed in Kyoto in 1997, which committed industrialised countries to making cuts in greenhouse gas emissions.

The Kyoto agreement has not been ratified by any industrialised country and while the EU has at least pledged to do so, the US Congress, and powerful forces in US oil and coal industry, have campaigned to frustrate any progress. If elected, Republican Presidential candidate George Bush, now Governor of Texas and heavily backed by US oil interests, can be expected to block any further action. Even the current US administration is trying to negotiate major loopholes in the Kyoto agreement which would allow the US to escape its obligation to take action at home to cut emissions.

US resistance to action is backed by Japan, Canada, Australia and New Zealand. European Governments, which have begun to take action against climate change, are facing protests against high fuel prices, which may come to a head while the Hague summit is taking place.

Meanwhile, severe weather events, which might get more frequent as man-made climate change takes hold, are killing people and destroying property across the planet. Recent months have seen disasters caused by extreme flooding, storms and draughts in Cambodia, India, Italy, Japan, Mexico, Switzerland, the UK and the United States. Already, scientists say that human beings have had " a discernible influence on the global climate" (IPCC). If we continue to overwhelm the atmosphere with greenhouse gas emissions, the people of the world will pay a high price for the failures of their politicians and the greed of large companies.

This Briefing sets out a) the science and b) the politics of climate change. It explains what is likely to happen in the Hague and sets out what Friends of the Earth will be doing there. Friends of the Earth International is the largest environmental network in the world with groups in sixty-eight countries. Many - North and South, from Europe, America, Asia and Africa - will be at the Hague throughout the summit.

If you want to know what's going on in the Hague: keep in touch! And make sure you cover the building of the Dyke on November 18th (see section 3 below).

1. THE SCIENCE

Most of the energy that reaches us from the sun in the form of short wave radiation arrives undisturbed at the earth's surface and warms it. Much of this energy is emitted back into space in the form of long wave radiation, but some of this radiation is trapped in the atmosphere by a blanket of water vapour and trace gases called 'greenhouse gases' Without this natural greenhouse effect, the earth would be about 30°C colder than it is today.

The main naturally occurring greenhouse gases

are water vapour, carbon dioxide (CO_2), methane (CH_4) and nitrous oxide (N_2O). Additional greenhouse gases are released by industrial processes: artificial chemicals called halocarbons (CFCs, HFCs, PFCs) and long-lived gases such as sulphur hexafluoride (SF_6).

Carbon dioxide is the most important greenhouse gas generated by mankind, accounting for about two thirds of the human-induced greenhouse effect.

Plants and animals have exchanged carbon dioxide with the atmosphere in a carbon cycle that has remained in balance for the last 10 000 years. However, since the industrial revolution, human activities have disturbed this balance mainly through:

- burning fossil fuels (oil, coal and gas) which produces CO_2,
- the destruction of forests, which releases stored carbon, and
- the intensive rearing of cattle and high scale plantation of rice, which produces methane.

Carbon dioxide concentrations in the atmosphere have increased by about 30% in the last 200 years, from less than 280 parts per million (ppm) to 368 ppm today. [1]

If we continue to burn fossil fuels at our current rate, atmospheric carbon dioxide will be twice pre-industrial levels by 2030, and three times that figure by 2100.

IT'S GETTING WARMER

As concentrations of greenhouse gases rise, the earth's atmosphere is warming up. The global average temperature has risen by almost 0.8°C over the last century, very probably as a result of human activity. This is a rate of warming faster than at any time in 1000 years!

The 1990s were the warmest decade, and the 1900s the warmest century of the last 1000 years. 1998 was the warmest year globally in the instrumental record. [3]

According to the most recent estimates by the Intergovernmental Panel on Climate Change (IPCC, draft Third Assessment Report), the authoritative group of world scientists which advises Governments, global temperature may rise 1.5-6 °C by the year 2100. This may not seem a great deal, but should be compared with the rise in temperature since the last ice age of only 3-5°C.

Even if greenhouse gas emissions were stabilised today, atmospheric temperature would continue to rise because of the long life time of greenhouse gases.

WARMER, BUT NOT NICER

Climate change is likely to have a significant impact on the global environment. Precise consequences of global warming for individual countries or regions are difficult to predict, due to the enormous complexity of the global climate system. But in general, the faster the climate changes, the greater will be the risk of damage.

Sea level will rise due to thermal expansion of sea water, and the melting of glaciers and ice caps. A rise in sea level of 15-95 cm is expected by 2100. This will threaten low lying coastal areas around the globe, and may lead to up to 100 million people being flooded each year, particularly in the countries of southern and South East Asia [4]. It may also lead to the disappearance of some small island states, such as the Maldives which have an average height of about 1.5m above sea level.

Climatic zones, and thus ecosystems and agricultural zones, will shift towards the poles as temperatures rise. In some cases shifts could be up to 300km per degree Celsius [5]. Forests, deserts, rangelands, and other unmanaged ecosystems will face new climatic stresses. Many ecosystems will decline or fragment, and individual species which are not able to adapt or migrate will become extinct.

Coral reefs are an example of an ecosystem already exhibiting signs of major damage. Severe bleaching of corals worldwide has occurred as a result of warmer surface water temperatures.

Arctic sea ice has thinned dramatically since the 1960s and 70s - nearly 40% in less than 30 years - threatening the variety of species it supports including polar bears [6].

The Worldwide Fund for Nature predicts that by 2100 up to one third of natural habitats may be

destroyed by climate change [7]. We may have already witnessed the first documented example of a species extinction due to climate change. As a result of changing rainfall patterns, the Golden Toad has disappeared from the cloud forests of Costa Rica.

Forests and agriculture. Increased levels of CO_2 will initially lead to increased plant growth and expansion of forests in some areas. But climate change may lead to very significant dieback of the forests of the Amazon and Africa. Patterns of agriculture will need to change as farmers adopt different crops to respond to new growing conditions. Africa in particular is likely to be severely affected by lower crop yields leading to greater risk of famine.

Regional cooling. As average global temperatures rise, some regional temperatures may fall due to changes in ocean circulation. One example is the North Atlantic Ocean circulation. The Gulf Stream carries warming waters from the Caribbean to the shores of northern Europe. A reduction of these ocean currents could lead to significant cooling [8].

Changing weather patterns are predicted across the globe**.** Availability of water is particularly important. Although we don't understand enough about the climate to make specific predictions for small geographical areas, climate models suggest that in areas where water availability is currently low, rainfall will decrease, while wetter areas can expect higher rainfall [9]. Overall this will mean increased likelihood of floods and droughts worldwide.

A warmer globe means more energy in the climate system, fuelling phenomena such as hurricanes, and the cyclical event known as El Niño which affects the climate all around the globe. The frequency of El Niño events appears to be increasing from every 6 years, to 3.5 yrs and leading to ever more extreme weather events [10]. The consequences of stronger and more frequent weather events are severe: according to the Red Cross, in 1998 (an El Niño year), there were more refugees from natural disasters than from armed conflict, and the cost of these disasters was put at $65.5 billion [11].

Health Impacts. Changing regional climates may lead to increase in the spread of disease, especially insect-borne diseases such as malaria, dengue fever, tick-borne encephalitis, and leishmaniasis. Up to 300 million more people worldwide could be at risk of the dangerous falciparum malaria, particularly in China and Central Asia [12]

Some diseases could become more prevalent as a consequence of extreme weather events and the resulting destruction of infrastructure, such as cholera, typhoid, malaria and dengue fever.

Effects on society. Human society will face new risks and pressures. Some regions are likely to experience food shortages. Water resources will be affected as precipitation and evaporation patterns change around the world, and this may lead to conflict as nations compete for limited water supplies. 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.

SCIENCE REFERENCES

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2. THE POLITICS

At Kyoto, the industrialised countries (known as "Annex I" countries in COP jargon) promised to cut their greenhouse gas emissions by at least 5% from 1990 levels by 2012 at the latest. The targets cover:

- carbon dioxide (CO_2),
- methane (CH_4),
- nitrous oxide (N_2O),
- hydrofluorocarbons (HFCs),
- perfluorocarbons (PFCs) and
- sulphur hexafluoride (SF_6).

The individual targets for each country range from an average 8% cut for EU member states, a 7% cut for the US and a 6% cut for Japan to a 10% increase for Iceland. The EU has allocated the 8% reduction amongst its member states, resulting in a range of different targets for the different countries. At the upper end, Germany and Denmark have to reduce their emissions by 21% over 1990 levels and Luxembourg by 28%, Finland and France only have to bring emissions back to 1990 levels and at the lower end, Greece and Portugal can increase their emissions by 25% and 27% respectively.

Overview of national emission trends of GHGs

Country	Kyoto Target	% Change 1990-1995	% Change 1990-2000
Australia	+8	+6	+13
Canada	-6	+10	+8
France	0	0	-7
Germany	-21	-12	-14
Italy	-6.5	+2	na
Japan	-6	+8	na
Spain	+15	+2	+12
UK	-12.5	-9	-11
USA	-7	+5	+10.7

Note: Targets for France, Germany, Italy, Spain and the UK are burden-sharing targets (EU-target is -8%);1990-1995 reflects actual changes; 1995-2000 are predictions based on 1996 or 1997 emission data; Source: UNFCCC, official national data

The targets agreed in Kyoto will certainly not "save" the global climate. They are at best a first step. They are also not equitable between developed and developing countries. The fact is:

- As global emissions of greenhouse gases keep rising globally by 1,3% per year, CO_2 levels in the atmosphere will rise by up to about 8% above 1990 levels in 2010. Even if the Kyoto targets are met, CO2 levels in the atmosphere will only fall by about 0.4 %.
- Even if Kyoto is implemented, after 2012 citizens in USA, Canada or the EU will still emit far more greenhouse gases per head than citizens in poorer countries such as India or Mozambique. The US, with 5% of the world's population, emits more than 20% of the world's CO_2, while India's 17% of world population produces less than 4% of global emissions.

The Kyoto targets can be achieved in many ways, not only by Governments taking domestic action to cut emissions at home.
Parties can for example enhance and protect "carbon sinks", which means that they use forests or soils as carbon storage to reduce their net emissions. They can also implement reduction projects in other countries or buy emission credits from abroad to meet their targets.

THE "GOOD" AND "BAD"

The EU has adopted a relatively progressive position on most issues. The EU wants to hold the US to the Kyoto agreement, and might therefore make compromises in the Hague. EU Governments may also find their negotiating position weakened by concessions they have made (or may yet make) to fuel tax protestors across the continent.
The USA, Canada, Japan, New Zealand, Australia want to water down the Kyoto treaty. They want other Governments to agree to rules that would in fact allow them to increase their emissions of carbon dioxide from the burning of

fossil fuels. They hope to make fulfilment of the Kyoto targets as cheap as possible.
The developing countries (G77) are divided on some issues, united on others. China and India are major forces, and the Alliance of Small Island States is trying to get the G77 to stick to strong positions to preserve the Kyoto agreement. Saudi Arabia and other OPEC Nations want compensation for any potential losses from reduced oil exports.

SINKS

The biosphere and the oceans store and release carbon and are part of the global carbon cycle. However, planting trees rather than reducing emissions from fossil fuels will not save the global climate.

- The biosphere cannot store all the carbon we could release, which is currently underground in the form of oil, gas and coal.
- There are huge uncertainties and accounting problems involved with the use of sinks to meet Kyoto targets.

For example, Japan wants rules to allow them NOT to count increased emissions from cutting down forests, but to INCLUDE the carbon stored when plantations are grown back on this land!
The USA and Canada want all sorts of "additional activities" to meet their targets, such as "agroforestry"(which could include the planting of genetically modified trees), "urban greening" and "cropland management".Under the US proposal, the US Kyoto target would effectively be reduced by a quarter.
Friends of the Earth opposed the inclusion of sinks in the Protocol. As they are included now, we argue for accounting rules that will make it impossible for Parties to count business-as-usual activities such as normal forest harvesting as climate protection measures. We are opposing all proposals to broaden the scope of land use or forestry activities to be counted towards countries' targets.

FLEXIBLE MECHANISMS

'Flexible mechanisms' were created under the Kyoto agreement to enable industrialised countries to achieve emissions cuts or buy emission "credits" abroad, reducing the need for domestic action. There are three of these mechanisms: Joint Implementation (JI), the Clean Development Mechanism (CDM) and International Emissions Trading (IET).
JI allows projects to reduce emissions in other developed countries (i.e. deals between Annex 1 countries). The CDM allows for similar projects in developing countries (i.e. deals between Annex 1 and non-Annex1 countries). Both those will enable Annex 1 countries to claim emission credits. IET will allow Annex 1 countries that have achieved emissions reductions over and above those required by their Kyoto target to 'sell' their excess to countries finding it more difficult or expensive to meet their commitments.
The US, Canada and others argue for maximum use of emissions trading. The EU wants a limit to use of the mechanisms, obliging countries to countries meet at least half of their emissions reductions targets through domestic action.
Friends of the Earth wants the vast majority of reductions to be made at home by the industrialised countries. Annex 1 countries should only be allowed to use the mechanisms for at most one fifth of their reduction targets.

JOINT IMPLEMENTATION

Here is a typical example of how JI might work. A US company invests in a coal-intensive East European economy, to build a gas-fired power station. Without the US investment, the country would have built a coal-fired power station. Because gas fired stations create less CO2 than coal-fired stations, the new power station would count as a "reduction" in CO2 emissions produced by the US, against its Kyoto target.
It could also be possible for nuclear projects (new reactors or life cycle extensions) to generate carbon credits that could be traded and counted against the Kyoto targets of the investor countries. Nuclear Power is not the solution to climate change.
Friends of the Earth wants only clean technologies such as renewables and energy efficiency to qualify as JI projects. Nuclear

power in particular must be excluded and the use of forest (carbon sinks) projects must be restricted. All projects must ensure public participation and transparency. Under these conditions, Parties could start implementing good projects now ('Early Start').

CARBON TRADING

As things stand, OECD countries could buy about 150 million tonnes of carbon per year from countries like Russia and the Ukraine. This is because many former communist countries are producing far less CO2 than their Kyoto targets would permit, following the collapse of their economies in the transition period. The US and others want rules which allow unlimited access to such "hot air" trading, with the intention of avoiding domestic action as far as possible.

Friends of the Earth wants to see hot air excluded completely from the trading mechanism.

SUPPLEMENTARITY

The European Union has proposed that a minimum 50% of Kyoto targets should be achieved through domestic action by Annex 1 countries. The US and others are resisting this proposal.

Friends of the Earth and other environmentalists would like to see at least an 80% requirement for domestic action. The economies of the developed countries must be greened if action to fight climate change is to be effective in the long term.

COMPLIANCE

It is crucial that Kyoto obligations be enforced. Otherwise the targets will lose all credibility. Japan and Russia are currently opposing binding consequences altogether. The USA and others want "borrowing". Countries that do not fulfil their obligations would able to deduct the excess emissions from their next commitment period budget, without further sanctions. The EU suggests a "compliance fund" which would mean that countries have to pay money into a fund which would then be used to either buy credits abroad or to implement real reduction projects.

Friends of the Earth insists that countries must make good any excess emissions and comply with their targets agreed at Kyoto.

SOLUTIONS

Climate scientists have suggested that atmospheric CO_2 concentrations should be kept below 450ppm, or approximately twice pre-industrial concentrations, in order to avoid catastrophic consequences. This will require first stabilisation, and then substantial reduction of global CO_2 emissions from current levels.

Friends of the Earth argues that to achieve this, industrialised countries must make deep cuts in their greenhouse gas emissions, of up to 90% by 2050. Developed countries will need to switch from dependence on fossil fuels to investment in renewable energy sources and energy efficiency measures. Less developed countries must be supported in achieving development through sustainable means.

3. FRIENDS OF THE EARTH

Friends of the Earth will be present throughout the Hague talks. We are the largest environment network in the world, with groups in 68 countries, North South East and West.

PHOTO OPPORTUNITY*:*

On Saturday 18th November, thousands of FOE supporters from all over the world will be building a "dyke" outside the talks. Building will start at 12.30pm and finish around 2.30pm. The dyke will be decorated with banners, flags and slogans from groups and individuals from around the world. Music, theatre and art events will also be taking place, and there will be speakers and witnesses of extreme weather events.

Regular reports on the progress of the talks will be available on FOE EWNI's website www.foe.co.uk and on the FOE Europe site www.foeeurope.org.

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