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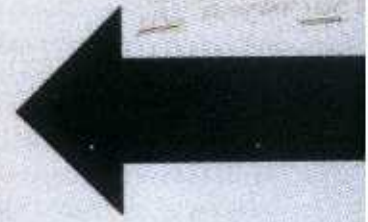


**Pew Center on Global Climate Change**

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# US DELEGATION



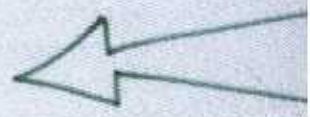
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# GREENPEACE

# Climate summit in The Hague

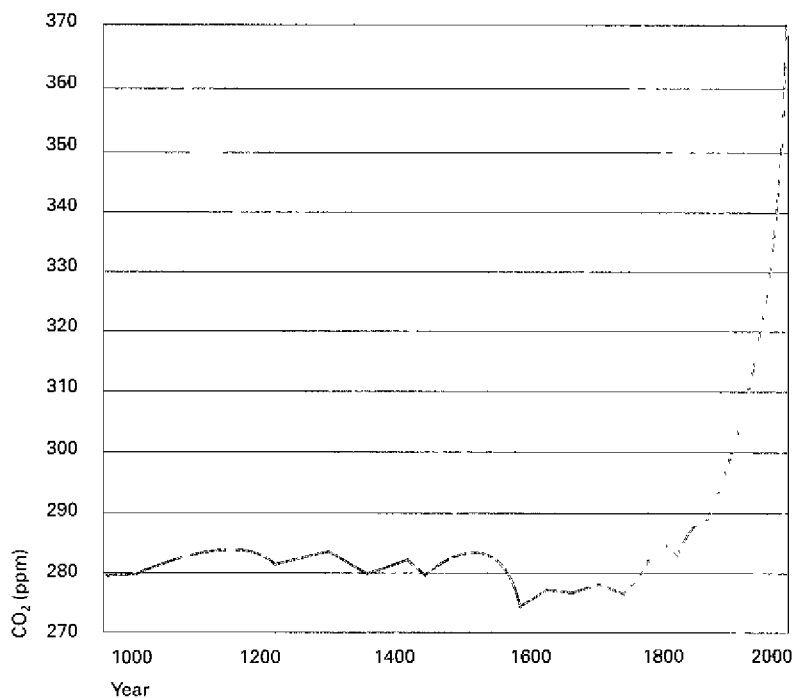
## Are the climate negotiations at an end?

### Preliminary remarks

“Climate summit in The Hague fails”. “Black day for climate protection”. It was with these and similar headlines that the world’s press reported on the outcome of the climate summit in The Hague. For the past five years, beginning in 1995 with the first climate summit (Conference of the Parties, COP) in Berlin, more than 150 nations have come together every year with the aim of reaching international agreement on the reduction of greenhouse gases. The first breakthrough was achieved in 1997 at COP-3 in Kyoto, Japan, where the Kyoto Protocol was passed. This stipulated that emissions of the main greenhouse gases were to be reduced in the industrialized countries by about 5% (by 2012 at the latest, compared with the base year of 1990) In subsequent conferences the task was to implement the Kyoto Protocol and to agree on obligations that are binding under international law. In past issues of Topics we have reported on the stage reached in the negotiations each year. In view of the different economic interests of the countries involved, it was clear that designing

**38** The wall of posters directing the participants from some 180 countries to the various delegation offices at the Congress Centre in The Hague mirrors the to and fro of the climate negotiations themselves. The political and economic interests of the attending treaty states – which were joined by more than one hundred non-governmental organizations – were so diverse that binding resolutions could not be adopted

Concentrations of CO<sub>2</sub> in the atmosphere (in ppm)



The graph shows how concentrations of CO<sub>2</sub> in the atmosphere, expressed in ppm (parts per million), have changed over the past 1,000 years. The older data were derived from ice cores in the Antarctic, the values from the 1970s onwards were measured at the Cape Grim Baseline Air Pollution Station (Tasmania). The curve follows quite closely the growth of industrialization and the development of power consumption, so that it is logical to assume an anthropogenic influence. The increase in mean global temperatures in the atmosphere (as described in our special Topics 2000 publication) is also so pronounced that it can no longer be attributed entirely to natural fluctuations.

rules (“flexibility mechanisms”) that are equitable for all countries, both industrialized and developing, would be a difficult task.

### The climate summit in The Hague

Although all the participants were aware of the fact that, after so much pulling and tugging in the years following Kyoto, the climate negotiations desperately needed a shot of success, they began – as in earlier meetings – on the slow side. It was not until the second week of negotiations that working groups were set up at ministerial level to

devise a compromise paper that would be acceptable to all member states – leading to the Pronk paper, named after the President of COP-6. In order to win the approval of as many treaty states as possible, numerous compromises were discussed in intensive negotiations, particularly the following:

#### – Forests will be recognized in part as CO<sub>2</sub> sinks.

This was to accommodate the United States, Canada, New Zealand, and other countries. However, reforestation measures have recently been very contro-

versial as sinks and, in the view of environmental groups, should not be counted. Given unfavourable conditions in a warmer climate they may also become a source of CO<sub>2</sub>. Also, the situation should be avoided in which (as is feared) forests are cut down and then replaced by quick-growing – and usually problematical – wood plantations, which are then claimed to be an accomplishment in terms of climate protection.

– **CO<sub>2</sub> reductions must also be verifiable “primarily” at home.**

This is the strict position adopted by the EU. The United States, accounting for 4% of the world’s population and about 25% of the world’s greenhouse gas emissions, want to “continue as before at home” and obtain or “pur-

chase” reductions abroad. This aspect therefore remains particularly critical for the United States.

– **The consequences for non-compliance under the “Compliance Regime” should be treated “mildly”.**

If reduction commitments cannot be fulfilled, the states involved are to submit an action plan describing how they intend to comply in the next commitment period. Environmental groups, in particular, would like to see a stricter approach.

– **The construction of nuclear power stations in developing countries should not be counted as a contribution to climate protection.**

In eastern European countries, however, nuclear power projects

should be counted within the meaning of the Protocol. The general attitude towards the controversial subject of nuclear energy is therefore not clear-cut

**The decision-making process**

Jan Pronk, the conference chairman, put forward his compromise proposal very late, on Thursday evening, only two days before the end of the conference. He probably thought that – as in Kyoto – an agreement could be reached “at the very last moment” in a marathon day-and-night round of negotiations. But this time the strategy failed and in spite of heated debates and endless phone calls, no agreement was reached. The central negotiating partners, the United States and the EU, each tried to



For two weeks in November 2000, some 10,000 participants from more than 180 countries and representatives of international organizations, environmental groups, and industrial associations met together in The Hague to discuss ways of putting the Kyoto Protocol into practice. Whilst government representatives met behind the closed doors of the conference room to negotiate the various paragraphs, hundreds of smaller meetings took place outside, with lively discussions and intensive work carried out by the participants.

**CO<sub>2</sub> emissions of selected countries in the 1990s (in million tonnes)**

Countries	1990	1994	1998	Kyoto or EU target 1
United States	4,914	5,151	5,478	4,570
Japan	1,124	1,214	1,147	1,056
Germany	1,015	904	886	802
Italy	433	418	459	405
France	388	378	413	388
United Kingdom	584	559	546	511
Netherlands	161	168	181	151
Canada	466	482	529	438

The table shows that the targets set by the Kyoto Protocol for the reduction of CO<sub>2</sub> emissions are still far off. In the course of the 1990s, the UK and Germany were the only countries where the level of emissions fell. In the United States, where a quarter of the world's total emissions are generated, the level was even seen to increase distinctly.

<sup>1</sup> Reduced emissions 2008–2012 in accordance with the Kyoto Protocol or the agreement of EU environment ministers for CO<sub>2</sub> and other greenhouse gases. Source: Umweltbundesamt, calculations by Wirtschaftswoche (No. 43/19th October 2000)

introduce new variations of their own. But in the end, although the negotiations came closer to finding a middle ground on many points, it was not enough for an agreement to be reached.

**What if?**

**A retrospective and prospective view**

– If the Pronk paper had been accepted, it would have opened the door to what would have been in some cases quite controversial options. Under certain circumstances the industrialized countries may even have been allowed to increase their emissions of greenhouse gases – which a large number of observers consider absolutely critical and counter-productive.

– Even if the United States, whose approach was considered obstructive to progress in the negotiations, had given in, the fate of the Kyoto Protocol would still

have been uncertain because the outcome of the presidential election was unknown at that time.

– In the future too – under George W. Bush – it will certainly not be easy to bring about a ratification of the Kyoto Protocol. Perhaps the decisive impetus will come from the economy. It could happen that the European industries will gain a lead as a forerunner in the development of innovative and environmentally sound technologies – a development viewed with growing concern in the United States. The Global Climate Coalition, a group of lobbyists and sceptics based in America who categorically reject the idea of anthropogenic global warming, has already lost some of its important members like BP, Shell, Daimler-Chrysler, and Ford.

– All things considered, it will certainly do no harm to have another very careful look at the Pronk paper, especially as there is really

no chance of getting climate change under control unless clear and effective rules are established

– The negotiations are to continue in Bonn just a few months after The Hague conference. Perhaps the “shock” from The Hague will in fact produce a general change of heart on climate protection with the result that the participants will after all succeed in giving climate protection the worldwide breakthrough it needs by 2002, ten years after the first global environmental conference in Rio de Janeiro.

**The latest findings from research into global warming**

The fact that this is more important than ever is shown by the latest findings of climate researchers. In the light of their findings, there is no justification for giving the all-clear either in terms of the expected rise in temperatures or in terms of any of the other important aspects such as the rise in sea levels. On the contrary, the rise in temperatures by the end of this century is likely to be even more pronounced than hitherto assumed.

At the beginning of the climate summit in The Hague, Robert T. Watson – Chairman of the **Intergovernmental Panel on Climate Change (IPCC)** – presented new findings published in the IPCC's third report (the IPCC is an international research committee set up by the United Nations in 1988 to conduct research on climate change):

- CO<sub>2</sub> levels in the atmosphere are higher than at any time in the last 420,000 years. Since the triumph of industrialization in the 18th century, concentrations of CO<sub>2</sub> have increased by 30%, methane by 100%, and nitrous oxide, which likewise contributes to the greenhouse effect, by about 15%.
- Atmospheric temperatures are likely to rise on average by 1.4 to 5.8°C by the end of the century. This adjustment upwards has become necessary because lower levels of sulphate emissions with their masking effect are being predicted (cleaner air allows higher levels of short-wave solar radiation to pass through with the result that the atmosphere warms up more intensively).
- It has been confirmed that precipitation in the moderate latitudes will increase. In contrast, it is supposed to get even drier in the arid and semiarid regions of southern and northern Africa, southern Europe, the Middle East, and South America.
- The frequency and magnitude of ENSO events (El Niño and La Niña), which have a sustained impact on extreme events and natural catastrophes, are projected to increase (cf. our article on this subject in Topics 1998).
- Sea levels are continuing to rise at an ever-increasing speed. Values of between +15 cm and +95 cm are expected by the end of the century. Given a change of this magnitude, numerous regions and island groups are threatened in their very existence.
- As far as the subject of the increase in extreme events is concerned, there is still a great need for more research; it is assumed, however, that there will be shifts at least in the geographic location of extreme events. This means that the places affected in the future will be less prepared for extremes like heat waves and torrential rain. This will result in more frequent and more serious loss events and natural catastrophes. Munich Re geoscientists were involved in the research into these effects undertaken for the IPCC report.
- The IPCC report will also make the point that the influence of human activities on climate change is now – with a great degree of certainty – established.



Jan Pronk, who led the negotiations at the climate summit, submitted his compromise paper to the conference two days before the end of the summit. He hoped it would be possible to achieve a positive result at COP-6. After hours of tough negotiations that went on day and night, the unnerved negotiation partners had to announce the failure of COP-6

A major EU study presented in the run-up to the climate summit in The Hague describes the expected changes and consequences in Europe and gives no reason to sound the all-clear either. The study was carried out by the **ACACIA project (Assessment of Potential Effects and Adaptions for Climate Change in Europe)**, in which leading climate experts from several European countries and various financial services companies (including Munich Re) are involved. The results of the study may be summed up as follows:

- Warming in Europe will be between 1°C and 4°C this century.

- Cold winters – defined as the coldest of any ten winters in the climate period of 1961–1990 – will become much rarer by 2020 and will disappear almost entirely by 2080.

- Precipitation will increase particularly in the north, whereas in the south it will probably decrease. This observation is even more interesting when broken down by season:

- Most of Europe will be wetter in the winter (+1% to +4% per decade)
- The summers will be a little wetter in northern Europe (up to +2% per decade) and much drier in southern Europe (up to -5% per decade)

- An increase in weather extremes is likely. This applies both to the frequency and intensity of heat waves and to the frequency of extreme precipitation events, particularly in the winter. The risk of drought in central and southern Europe is increasing. It is possible that the frequency of gales will increase too (our distinctly more categorical assessment may be found in the article on the winter storms of 1999).

### Temperature readings

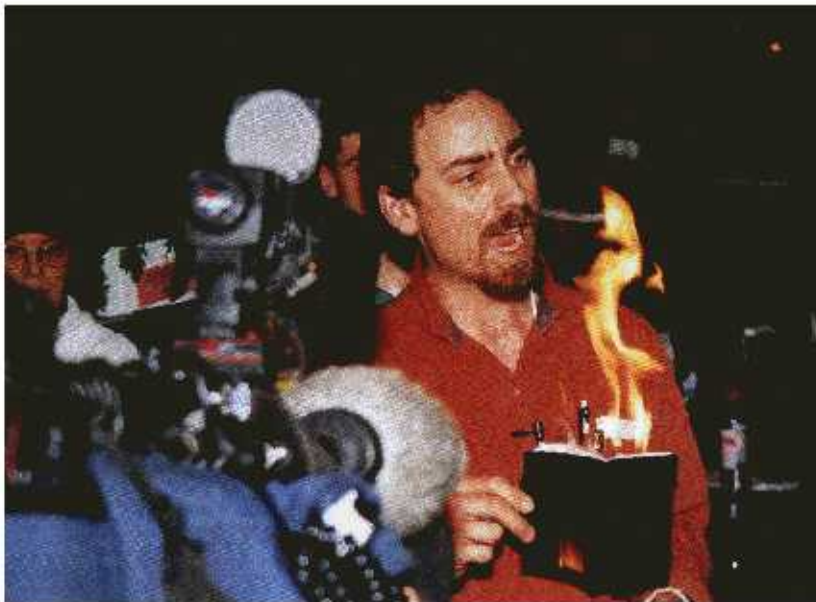
But it is not only the computer models and predictions that are disconcerting. The global temperatures recorded in the recent past must be regarded as an unmistakable alarm.

- The year 2000, for example, was the warmest year of the century in many countries of the world, particularly in Germany, where the mean temperature of 9.9°C was a relatively long way above the previous record of 1994 and more than 1°C above the long-term average.

- 2000 will go down in climate history as the sixth warmest year since global temperature recordings were begun around 1860, in spite of the fact that a sustained La Niña situation during the year had led to a large-scale cooling of the Equatorial Pacific.

- A further seven of the ten warmest years were recorded in the 1990s (with the year 1998 still being the absolute leader) and all ten of the warmest years occurred in the period beginning in 1983. This means that 22 years in succession were warmer than the long-term average in the climatic normal period of 1961–1990.

- The year 2001 also has a good chance of breaking further temperature records. The UK Met Office has issued a warning to this effect for 2001, because a new El Niño phase is expected to take over from the currently weak La Niña phase.



At the end of the climate summit disappointment was expressed not only by the government representatives and the press. This Canadian took part in a public burning of passports.



# Megacities

## Growing loss potentials?

# 09

### Introductory remarks

Although there was a distinct increase in the number of natural catastrophes recorded throughout the world in the year 2000, the economic losses and insured losses were relatively low. One reason for this is that fewer densely populated regions and fewer urban areas were affected. The loss figures of past years clearly show that “direct hits” in towns and cities, conurbations, and particularly megacities always generate exceptionally large losses. This applies both to earthquakes and to windstorms and floods. Besides these main catastrophes, there are other natural events that can have very catastrophic effects, particularly heat waves – as in Athens in 1987 or in Chicago in 1995 –, which are often capable of literally paralysing public life altogether. But hail, snow, frost, and freezes have dire effects too, as in Munich in 1984, in New York City in 1996, and in Montreal and Toronto in 1998. Supplying the population and providing assistance during and after natural catastrophes is particularly difficult in conurbations, where chaos frequently reigns immediately after such events and the infrastructure is badly hit. Often, evacuating those affected and taking care of them cannot be carried out fast enough.

### Developments in urban centres

The degree of urbanization in the world is continually rising. In past issues of Topics (in 1996 and in the special Topics 2000 issue) we have demonstrated the interconnections. In this article we would just like to remind our readers of a few important aspects. The population statistics reveal some interesting trends:

- Half of the world’s total population now live in urban areas and the drift from the land into the cities is unbroken above all in the Third World.
- The number of cities with more than one million inhabitants has increased by a factor of over four in the past 50 years (1950: 80, 2000: 371), in the Third World by a factor of almost six (1950: 34, 2000: 260).
- Megacities (defined by the United Nations as cities with more than ten million inhabitants) have even increased by a factor of twenty (1950: 1, 2000: 20). In 1950 four of the 15 largest cities in the world were in the Third World, in 2015 it will probably be twelve.

Everywhere in the world huge conglomerations are developing at breathtaking speed, often in areas that are highly exposed to catastrophes. Slowly but surely more and more targets for natural events are growing up, some of them with gigantic concentrations of people and values. Especially conurbations in the poorer countries display a particularly high level of vulnerability. Megacities are ticking time bombs, because the provision of supplies and protective measures are particularly difficult in urban centres on account of the complex and sometimes bewildering structures. Even if the number of extreme events remains more or less constant in the future, it is inevitable that natural catastrophes will increase both in number and in size.

<sup>42</sup> Hong Kong has a population of around 6 million today, with a density of 5,500 per square kilometre: This makes the metropolis one of the most densely populated regions of the world.





Two major earthquakes (San Francisco, 1906; Tokyo, 1923 – see picture) generated enormous economic losses already at the beginning of the 20th century. In San Francisco about US\$ 520m and in Tokyo about US\$ 2.8bn (at the values of the time). Nowadays the loss potentials of a major earthquake in the Tokyo-Yokohama conurbation are estimated at US\$ 2,000–3,000bn.



Tornadoes occur in many parts of the world, but most commonly in the United States, where in past years they have increasingly hit major cities too – in the past two years alone, for instance, Dallas, Miami, Oklahoma City, Salt Lake City, and Fort Worth. The photo shows a skyscraper in Fort Worth, Texas, which was wrecked on 28th March 2000.



The eruption of Popocatepetl in 2000 kept the population of Mexico City, which was last badly hit by an earthquake in 1985, in a state of anguish for weeks on end. The conurbation of the capital with a population of 20 million is one of the largest in the world. It is not only here that large loss potentials have developed, however. Huge urban areas are also spreading out around many of the world's perilously active volcanoes.

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Settlements are developing on the world's coasts at tremendous speed, including areas that are exposed to cyclones. Half of the world's population now live on the coast and according to UN estimates this migration will increase distinctly in the years to come, for example in Japan. The photo shows a tornado embedded in Typhoon Bart over Aichi in September 1999.

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Hail tracks in cities are natural events that cause particularly large losses for insurers. Hailstones often bigger than tennis balls smash roofs and windows and usually cause severe damage to thousands and thousands of motor vehicles (e.g. 240,000 cars in the 1984 hailstorm in Munich). This photo of roofs covered with temporary plastic sheets was taken in a district of Sydney that was hit by a hailstorm in April 1999.

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The sealing of the ground in urban areas prevents the run-off of large amounts of rain, and often – especially in towns that are growing without restraint – the dimensions of drainage systems prove to be inadequate. As the basements of high-rise buildings accommodate underground car parks, heating installations, and other service installations, large losses are inevitable in the event of floods. This picture was taken in Hsichih, a suburb of Taipei, which was deluged by heavy rain from Typhoon Xangsane at the beginning of November 2000.