

## A political view of CO<sub>2</sub>

The increase in atmospheric carbon dioxide may be accelerated by President Carter's new-found enthusiasm for synthetic fuel. But the atmospheric 'crisis' may come too slowly to bother the politicians, argues **Michael Glantz**.

FOR those interested in the study of climate — including its impact on society and society's impact on it — 1972 was an extremely important year. In that year a collection of weather anomalies occurred adversely affecting global food production and therefore availability. At that time some blamed the food shortages on the weather. More recently, however, those claims have been reevaluated and the blame is being apportioned more correctly between weather and society. The anomalies of 1972 included the fourth consecutive year of drought in the Sahelian zone of West Africa, the failure of the Peruvian coastal fisheries, droughts in Central America, the Soviet Union, India and China, along with excessive rains in parts of the Philippines, Australia and Kenya.

At that time the sharp increase in grain prices on the international market, the largest grain purchase by the USSR to that date, and the general scarcity of foodstuffs in the international marketplace, were all blamed on fluctuations in the weather and led to the concern that the weather had gone haywire. Concern about what was happening to the weather can be evidenced by citing such publications as "Ominous changes in the weather," "What's gone wrong with the weather?", "When the Sahel freezes over," *The Cooling, Blizzard, Ice, The Genesis Strategy, Hot House Earth, Climatic Change, The Weather Conspiracy* and so on.

Was the climate regime getting cooler? Was it getting warmer? Was it staying the same? Was climate variability increasing? Climate (and weather) have become recognised as important variables in the activities of societies, regardless of the level of industrial development, geographic location, or ideological bias of the respective society. This new-found importance is due partly to the media's acceptance that such factors are newsworthy, and partly as a result of the raised consciousness of some political and economic leaders that climate factors must be considered in the food-population equation.

A projected CO<sub>2</sub>-induced global warming became part of the debate and is increasingly being viewed as an important



scientific and socio-economic problem. In addition to the natural processes, CO<sub>2</sub> enters the atmosphere as a result of human activities, primarily the burning of fossil fuels. The current rate of increase of CO<sub>2</sub> content in the atmosphere has been measured at about several tenths of one per cent per year. With projected energy use increases it has been suggested that a doubling of the CO<sub>2</sub> content in the atmosphere can be expected by the middle of the 21st century.

A doubling is expected to warm the lower atmosphere (as a result of various physical processes) with estimates ranging from 1 to 4 °C.\* This warming is expected to affect weather patterns and climate regimes around the globe, changing precipitation and temperature patterns resulting in the shifting of agricultural zones. Such shifts would adversely affect some regions while favourably affecting others, with no assurances as to who the winners and losers will be. Thus, much attention has been focused on the ultimate effects of the increased CO<sub>2</sub> loading of the atmosphere.

In fact, the increase in the CO<sub>2</sub> content of the atmosphere takes place each day

*\*It is important to keep in mind that the locations, types, magnitudes and directions of change as well as the importance of certain variables in CO<sub>2</sub>-related processes are in most instances educated speculation at this time.*

and, measurably so, each year. Yet, the annual increments are perceived by most observers to present little immediate danger to society and are considered non-threatening. No immediate attention, let alone rectification, of the CO<sub>2</sub> problem is perceived to be necessary.

The CO<sub>2</sub> impacts are especially an important area of study for the social sciences because they represent, as well as highlight, a relatively new (some would say neglected) research area of interactions between climate and society. Many consider the study of the CO<sub>2</sub> content of the atmosphere timely even though it is still only a potential problem with what appears to be a relatively long lead time, that is, the major impacts are projected in terms of decades. The "luxury" of a long lead time is not accepted as such by everyone, since society will require a long time to make adjustments that would be in line with attempts to develop alternative sources of energy to reduce the use of fossil fuels.

It may be useful to separate the CO<sub>2</sub> problem in to the two predominant perspectives: as an event — the doubling, and as a process — the annual 1 p.p.m. increase. In reality both views are correct but each by itself presents an incomplete picture of the problem. To better understand and, therefore, deal with the potential societal and environmental

problems associated with an increased CO<sub>2</sub> content of the atmosphere, the problem must be viewed as both event and process.

Most of the attention of the media, the public and the policy-makers is directed toward the CO<sub>2</sub> problem as an event because of the spectacular aspects of a CO<sub>2</sub> doubling. For example, an often referred to impact of a doubling is a surging into the ocean of the West Antarctic Ice Sheets resulting eventually in an increase in sea level on the order of 5-8 metres.

## Spectacular impact of other natural disasters

The CO<sub>2</sub> problem viewed as an event has been likened to other specific natural disasters — earthquakes, droughts, floods, severe or dry winters. The impact of a drought, for example, on the environment and society can often be spectacular. In many instances, however, the drought only highlights a process of environmental degradation that has been under way for a period of time preceding the drought event itself; a process which at any one point in time represents only a low level abuse of the environment.

So, the dust storms in the American Great Plains during the droughts in the 1930s and briefly in the 1970s, while spectacular, were not unique (except for their magnitude). Each year during the period between such major drought events, the top soil was also blown away at a much less spectacular level. The cumulative effect of such storms in the interdrought periods may in fact be much greater than that of the specific drought event.

One might argue by analogy that the tendency to overfocus on the more spectacular event (the CO<sub>2</sub> doubling) takes place at the expense of attention to the slow but steady annual increases in CO<sub>2</sub> (the process).

The example of urban air pollution, as a low-level but continually increasing insult to the environment, in some ways represents a microcosm of the CO<sub>2</sub> problem as a process. It also suggests how society might react to such a problem. There are very gradual, but definite, changes that take place in the environment (especially weather and climate) as a result of urban air pollution, a large part of which results from the burning of fossil fuels.

Yet, in many instances the changes that have occurred are low level and have apparently taken place gradually over an extended period of time. One might ask, how well have societies and their political leaders dealt with those incremental changes in air pollution levels and with the social changes they may have brought about? How well have they dealt with drought episodes? How well can they be expected to deal with CO<sub>2</sub> problems?

Studies of societal responses to

spectacular events such as major droughts and their impacts suggest that political interest in those kinds of problems varies with the presence of other problems that compete for time and scarce resources. In addition, interest in such events also rises and falls as a result of the different lengths in office of different decision-makers (2,4,6 year cycles for politicians). This fluctuation in interest is manifested in a relatively abrupt swing between two types of decision-making processes:

- "crisis management" and
- "muddling through."

In crisis decision-making, the time to act is perceived to be short, the stakes are perceived to be high, and the impacts are seen to be severe. As for "muddling through," the opposite is seen to be the case; there is perceived to be plenty of time to act, society is expected to rise to the occasion with a swift and appropriate response if and when it becomes necessary, and the impact of the next situation is expected to be unlike the last one because of the uniqueness of meteorological events (or because of the belief that society tends to learn from its past mistakes), or as is the case of a CO<sub>2</sub>-induced global warming, the situation has never happened in the past.

The two perspectives of the CO<sub>2</sub> problem mentioned earlier — event and process — are useful for a better understanding of not only the problem and its impacts but of the political decision-making responses to it. For example, perceiving the increase in CO<sub>2</sub> levels as an event may be valuable for creating an awareness of the potential consequences. It may also be helpful in generating public and political concern about the risks associated with a continued dependence on fossil fuels. However, if the analogy of urban air pollution as a microcosm of the CO<sub>2</sub> problem is accepted, then it can be seen that spectacular arguments about the CO<sub>2</sub> doubling will not bring about the desired public policy decisions concerning alternative energy systems.

## Muddling through on long-term problems

What is needed is a decision-making approach that matches the environmental situation. While the concern with a doubling might initially create a crisis decision-making atmosphere, it would be an ineffective approach to an environmental problem which is essentially low level but cumulative, a not so spectacular problem that requires sustained interest over a long period of time.

In the past the decision-making approach to low level environmental problems such as air pollution has generally been one of muddling through. That may have been adequate in dealing with some political and social problems, but it has not been an effective way to deal

with low-level cumulative environmental problems. Eventually such problems increasingly worsen until a crisis situation is perceived to prevail. Then policy making grows out of crisis management.

Crisis decision making from the outset has also been ineffective as a way to deal with low-level cumulative insults to the environment. After a brief flurry of decision-making in a crisis atmosphere, the crisis (perceived high threat, short time to act, high cost) in this case does not immediately materialise. As a result, interest in the problem dissipates and those who again attempt to generate interest receive little response from the media, the public and the politicians. Environmental degradation, however, continues to worsen steadily.

## Crisis thinking may be the only way

What is needed is a way to deal with the two aspects of the CO<sub>2</sub> problem simultaneously. The CO<sub>2</sub> problem, not unlike the more localised urban air pollution problem, might be seen as an "impending" crisis and, therefore, in need of a special type of decision-making process, one that combined the positive elements of a "crisis awareness" with cautious decision-making.

An interesting question that arises is whether a democratic society can effectively deal with a CO<sub>2</sub>-like environmental problem. Of the competing interests in such a pluralistic society, some of those interests will be winners and some will be losers. The demand of society for continually increasing amounts of energy derived from the burning of fossil fuels may be more immediate and pressing than the environmental effects of such activities. In addition, in every society where resources are scarce, there is a great competition among interest groups for attention, time, and resources to deal with their particular problem. In light of the hydra-headed crises that confront most societies (water, food, population, energy, disease, etc.) interest in any one problem (especially the low level ones) lasts only for a short time before society shifts its attention to the other problems that confront it. So it is possible that a pluralistic society may best be equipped to deal with environmental problems on a crisis basis, that is, it is best (if not only) capable of fighting brush fires as they arise.

The question then becomes one of developing a policy-making approach for a pluralistic society (including the international community), one which can sustain the interest and concern of various segments of society in a low-level but cumulative environmental problem such as the effects of the continually increasing burning of fossil fuels. □

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