Has the world weather system been destabilized?

by Carol White and Rogelio A. Maduro

World weather is showing a pattern of dangerous variability, from extremes of drought to torrential downpour, from unseasonably hot to bitterly cold. This is being used as a pretext by the environmentalist movement to pretend that it is industrialization which has brought us to this pass: that mankind is destroying the biosphere.

The reality is opposite. The currently depressed conditions in Western industry and agriculture, and the rapidly decaying infrastructure in the United States, in particular, mean that the margins which might allow us to survive this aberrant weather with minimal damage, are being removed. If the present trends continue, then even modest oscillations in the weather will have extremely dangerous economic fallout. The conditions in Bangladesh, where hundreds of thousands of people were not only rendered homeless by the floods in 1988, but were forced to camp out in flooded areas without protection from the weather, are a case in point. The floods were caused by the combination of heavy rains and the failure to dredge the Ganges/Brahmaputra waterways and maintain flood control measures.

Meteorology has become one of the battlegrounds between those ecologists who are pushing a hidden malthusian agenda which includes the imposition of further regulation on industry, and pro-development forces. The United States is a major arena in which this fight is occurring. Many scientist have joined the fray—either because they recognize the broader political implications, or merely because they resent the abuse of science in such frauds as that exemplified by the hysterical admonitions that extreme measures must be taken to avert a claimed greenhouse effect.

Battle over the greenhouse effect

A growing number of U.S. meteorologists are publicly opposing the rush to adopt public policy on the basis of the supposed greenhouse effect. The effect supposedly occurs as a result of the present rate of burning petrochemicals, the increase of carbon dioxide, and other gaseous emissions, coupled with particle emissions, all of which supposedly will remain trapped in the atmosphere, where they in turn will trap infrared radiation from the Earth, causing a global warming of the Earth's temperature and accompanying large-scale climate shifts over the next 50-year period.

In January of this year, a team of scientists from the National Oceanic and Atmospheric Administration (NOAA), released a study which shows that there is no evidence that the weather over the United States had become warmer, wetter, or dryer over the past 100 years.

This study directly contradicts the studies of James Hansen, the guru of the greenhouse effect, who put out what has become the standard temperature chart showing a 0.7°C increase in the global temperature. One of the fundamental differences between the two studies is quality control. As several scientists have pointed out in interviews already published by *EIR*, Hansen has been severely critized for doing a very poor job of cleaning up his data base from errors, such as the errors that occur when the location of a weather station is changed, which has a great effect on the temperature readings.

The NOAA team, on the other hand, performed very careful quality control on their data, and utilized a much more extensive grid, using climate reports from National Weather Service offices and from cooperative observing stations, which in 1985 totaled almost 6,000 locations.

The NOAA study, conducted by Kirby Hanson of the Air Resources Laboratory, George A. Maul of the Atlantic Oceanographic and Meteorological Laboratory, and Thomas R. Karl of the National Climatic Data Center, found no statistically significant change in either the nation's average annual temperature or precipitation from 1895 to 1987, a 93-year period. Reporting in the January issue of *Geophysical Research Letters*, the study also found no significant change in these climate conditions for the Northern Plains. The work of some modelers has suggested that increased atmospheric concentrations of carbon dioxide and other greenhouse gases may cause dryer summers and wetter winters there.

There is now a Southern Hemispheric drought and heat wave (their summer growing season) currently in progress, and the weather in North America this winter has been characterized by abnormal cold, along with continued drought in the areas which produce most of the U.S. hard red winter

wheat. States such as Kansas, southern Nebraska, Texas, and eastern Colorado are in trouble; only Oklahoma appears to be receiving enough rain. While there is a good snow cover in the Northern Plains states, the unusually cold weather before the first snow has created the unusual condition of a freeze before the snow fell. This means that much of the snow may be lost in runoff.

Coupled to the drought has been the cold—and even snow in Los Angeles—which has not only threatened the winter wheat crop, but also California citrus, and even in some areas, cattle. The fact that so many farmers are now in marginal economic situations has also meant that where there are set-aside programs, the land has simply been plowed over to keep down weeds, rather than planted with ground cover.

The tenaciousness of proponents of the greenhouse effect is shown by NASA's James Hansen, one of the major ideologues, who last June predicted to the U.S. Senate that "1988 would be the warmest year on record unless there is a remarkable, improbable cooling in the remainder of the year." Yet, as early as last summer, meteorologists had observed the formation of an unusual mass of cold air at the polar vortex which indicated the probability of a cold winter in North America. Despite the fact that this prediction has been borne out, proving Hansen to be wrong, he is nevertheless holding fast to the contention that the drought has been caused by a greenhouse effect already active and that a warming trend is in progress.

Dirty crystal balls

Stephen H. Schneider, a NOAA meteorologist, has characterized predictive weather models as "dirty crystal balls." Three major models used to estimate the presumed effect on the United States of doubling the amount of greenhouse gases in the Earth's atmosphere in a period of 50 or so years, disagree completely about how the climate would be affected.

Two of these show an increase in rainfall in the Southeast, while one shows a decrease. Correspondingly, two show a decrease in Plains States rainfall, while the third shows the opposite. The same disagreement occurs over what will happen in California, with two opting for more rainfall. Estimates by advocates of the greenhouse effect expect an average increase in the Earth's temperature of 2° to 9°F, but other scientists contest that it would be so high. (This is approximately the increase in the Earth's temperature since the last ice age!)

Donna Fitzpatrick, undersecretary of energy, spoke to a meeting of the American Public Power Association (APPA) on Feb. 6, attacking the reliability of all of these models. "The general climate models cannot predict regional effect," she said. "In fact, these models are not very much different from what, in fact, they were developed for—weather forecasting—and they're not very much different from the computer models that are used by the Weather Service to make three- and five-day weather forecasts. Now, do you plan your life around the five-day weather forecast? In fact, those forecasts are only about 50% accurate. If you want to know whether it's going to be sunny or rainy, you might as well flip a coin. . . .

She continued her gloves-off attack: "The general circulation models are also not very successful in accounting, or they don't pretend to account, for the effect of clouds or even nighttime or for ocean currents. They also can't account for past temperature changes or give us very much information about transitional conditions, rates of change, the severity and frequency of storms and other extremes. We also don't understand, and therefore can't put into accurate or useful models, various loops and feedback mechanisms that we know exist. And yet, we don't know what their net effects might be, whether they might be positive or negative.

"What are some of these feedback mechanisms? Clouds. Do clouds cool the Earth overall, or do they tend to heat it up by trapping still more heat underneath them? This was an open question until a couple of weeks ago. A study was published concluding that clouds have a net cooling effect.

"Let me mention a couple of other things that we don't know about: ice ages. We know that ice ages have recurred in fairly recent history, roughly on a period of 100,000 years. We're not sure exactly why they happen. It apparently has something to do with periodic alterations in the orbit of the Earth. Apparently it also has something to do with the absorption of CO_2 and other elements by the oceans and other things that may be happening. We're not really quite sure. But that raises a question. We know that there are large fluctuations in atmospheric composition, and in temperature. We really don't know everything that causes them. Obviously, they've been going on for much longer than man has been burning fossil fuels. Carbon dioxide went up, it went down, it went up again. Man had nothing to do with that. The temperature went up, went down, went up again, many times. Man had nothing to do with that.

"We need to understand those natural, underlying processes, much better than we do, in order to know whether we, in fact, are beginning to be the drivers in those processes, or whether we're just the flea, riding around on the elephant's back. . . . [Perhaps] we can't change it. We may be in for a surprise. We may not be in control of this thing at all. And, if that's the case, we should learn to adapt and put our energies into doing that, instead of maybe going into some misguided effort that will really have no effect, and instead cost a lot of people a lot of trouble. And that can possibly cost economic growth and lower standards of earning—of living."

Finally, she referred to the fact that up until this decade many scientists were worrying that the Earth was facing a new ice age. "You may recall . . . that there was a long slide from about 1949 to the mid '60s, a long slide where the temperature was going down, before it began to climb again.

That slide induced many people, serious scientists and even our serious Congress, to conclude that we were in danger of slipping into another ice age before we'd planned for it. And actually, in the 1970s, the National Climate Program Office was established by Congress for the purpose of studying this cooling event that was occurring, and to try to understand it better.

"So by taking a short-term view, you can get what is possibly a very misguided impression of what is happening. Is the long-term trend up or down? I'm not sure, but we have to take very seriously the fact that the causes that we know cause warming in general are increasing. And therefore, probably if you had to make a bet, you should go with—that the trend is probably upward. But in order to do that, we need to take the proper perspective."

In *Science* magazine of Jan. 6, 1989, a study of the effect of the Earth's cloud cover was published. B. Ramathanthan of Chicago University reports that the clouds in today's skies are responsible for cooling the climate below what it would otherwise be. Clouds cover about one-half of the Earth's surface. The proportion of sunlight which is reflected back into space is about 30%, double the 15% previously thought to be the case.

These clouds not only reflect shortwave radiation, but also the longer wave infrared (greenhouse) radiations which are directed from the Earth to the clouds. Thus, there is a countervailing greenhouse warming which is theoretically possible with an increased cloud cover. Nevertheless, experimental evidence indicates that on net balance, it is the cooling trend which predominates.

The greenhouse models generally predict an increase in the cloud cover associated with increases in precipitation. In a Feb. 6 press release, NASA confirmed this estimate according to measurements made by their Earth radiation budget Experiment satellite.

Another explanation for the anomalies

The U.S. Climate Analysis Center is predicting that the winter 1988-89 arctic air invasion of North America may shift global air-flow patterns, which can be held responsible for the recent drought period. According to Tony Barnston of the Center, despite the fact that long-range forecasts for February 1989 expected that precipitation would still be lighter than normal on the Eastern seaboard, nevertheless, they predict, with a 60% to 65% probability, that a break in the drought will occur in the Midwest and on into southeastern Texas.

The model underlying these predictions, unlike greenhouse models, couples atmospheric and oceanic circulation. Models such as these have been used to chart the existence of what are called alternating El Niño and anti-El Niño cycles in the global weather system. We have been in an anti-El Niño (sometimes known as La Niña) cycle this past year, a circumstance believed to be indirectly responsible for the North American (and now the South American) drought. The name El Niño is derived from the fact that the cycle is an extreme case of the annual warming of the Pacific Ocean off the coast of Peru during the December Christmas season.

The El Niño and the anti-El Niño alternate with each other, but not according to a regular cyclical pattern. In fact, there has been a series of extreme El Niño cycles during the 1980s, which a school of meteorologists led by William Gray from the University of Colorado and Kevin Trenberth from the National Center for Atmospheric Research in Denver, believe to have been responsible for the apparent global warming trend recently observed. They note, however, that the reversal now taking place has come earlier than might be expected were we only seeing the end of the anti-El Niño phase. It was expected to occur in March-April. Trenberth, therefore, feels that there are additional factors at play.

Last summer's drought over the United States was the culmination of a series of regional droughts, in which several different causal factors were involved. The fact that the prolonged drought—on the West Coast it began in 1986 and lasted through 1987, to be folllowed by the dry spell for the rest of the country in 1988—occurred at a time of economic crisis for farmers has created a situation in which normal buffers such as world food reserves have been exhausted. An added complication has been a secular trend to shortchange much-needed water projects, so that there has been a general trend of attrition in ground water reserves. Some farmers now fear that we may be on the verge of a new dust bowl, even if the drought breaks, because of the extent of soil erosion.

One of the most obvious of the phenomena in the 1988 drought was the displacement of the jet stream over the United States, to the north. Normally, the fluctuations in the jet stream allow the mixing of warm and cold fronts, creating the conditions for precipitation. The displacement meant that rain-producing weather systems over the United States last summer tended to be weak and few and far between. The idea that the drought was directly connected to a greenhouse effect is belied by its severity, since the effect would produce, by all accounts, a gradual, not a sudden warming.

How weather works

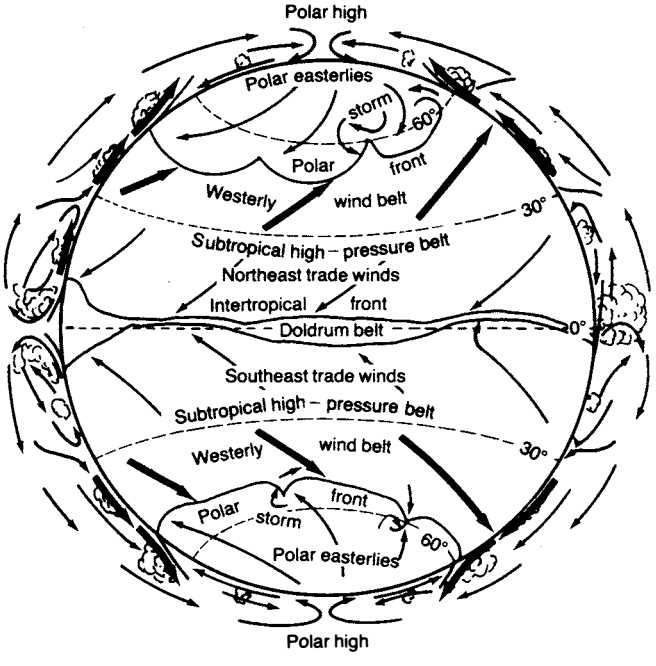
The world weather system is organized according to vortical circulation patters, both horizontally and vertically. These are generally explained in terms of the pressure and temperature gradients over the globe—most broadly between the equator and the poles—and the diurnal rotation of the Earth, which creates a coriolis force. There are three major convective areas of rising motions, clouds, and rain—in Southeast Asia, over the Amazon, and in the African Congo region. These are all related to tropical rainforest, which (especially over Indonesia) have been called stratospheric fountains be-

cause of their unique role in pumping world weather circulation.

On average at these points, moisture-laden air will be pumped up to a height of 12 kilometers, to the upper troposphere, from which it will descend to high-pressure zones over the oceans that are also known descriptively as dry ocean deserts. Air flows into the Equator from the Northern and Southern Hemispheres, where it converges, and an oscillating region known as the intertropical convergence zone (ITCZ) is formed. The ITCZ will move northward in June through August, and southward in the corresponding Southern Hemisphere summer months.

The role of vegetation in the cycle of precipitation has been extensively studied. The rainforests are unique in the amount of moisture which they cycle, but J. Shukla and Y. Mintz estimate that over the globe as a whole, only one-third of moisture which falls through precipitation drains off in streams. The rest is recycled by a process known as evapotranspiration.

FIGURE 1



Major planetary circulation patterns: If only the rotation of the Earth were considered, the wind belts would look like this. The low-pressure belt of calm at the Equator is called the doldrums. The northeast and southeast trade winds begin around 25° north and south latitude. High-pressure belts between 20° and 30° north and south are called the horse latitudes and are characterized by calms or variable winds and clear skies. The northeasterly and southeasterly winds proceed from the polar highs to the subpolar lows. The air attracted from the subtropical highs to the subpolar lows creates the westerly winds that prevail in temperate regions.

Source: *21st Century Science & Technology*, January–February 1989.

ENSO

El Niño events, sometimes called the El Niño/Southern Oscillation (ENSO), occur from two to seven years apart, on average, and they are characterized by the buildup of warm water in the Western Pacific. This transformation in the ocean waters has been correlated with a similar transformation in the monsoon rainfall patterns in India. The connection between such seemingly disparate events is the rotation of the world weather system, moving the ITCZ in a southerly direction. There is also a weakening of east-west flow of ocean waves, which then shift to the opposite direction, with a weakening (and in some instances even a reversal) of the easterly trade winds.

During an El Niño, the jet streams will be pushed in a southerly direction, which in the case of India has the same result in abating rainfall as the reverse, northward motion had last year over the United States. Normally, an El Niño occurs over a one- to two-year period, and then "normal" weather patterns recur.

La Niñas occur with less frequency (the last one occurred in 1974). In 1982-83, the ENSO event was unusually severe. It was accompanied by floods, gales, and a reversal of the trade winds. There was a below-average Indian monsoon and severe drought in the African Sahel, equatorial East Africa, and Australia. On the other hand, there were torrential rains in Ecuador and northwestern Peru and heavy rainfall in Colombia, Paraguay, and the border area between Argentina and Brazil.

In 1986-87, the ENSO event resulted in a cessation of the Indian monsoon. It has been followed this year by an anti-El Niño shift which has created extremely high rainfall on the Indian Subcontinent with accompanying floods in Bengladesh. Another unusual occurrence last winter was a high pressure zone which sat over the northwestern states, including Montana and North Dakota. William Gray, believes that this can be correlated with the existence of unusually high temperatures at the northern latitude of 15 degrees, longitude 150, in the Northern Pacific, due to the northerly shift in the ITCZ.

By January of 1988, the Eastern Pacific surface water temperature had chilled to normal, but it was continuing to get colder (a sign of the emergence of an anti-El Niño). Aside from this, however, there were also certain anomalies in the weather picture showing higher than normal convective activity in the Western Pacific south of Japan.

In the Dec. 23, 1988 edition of *Science* magazine, Kevin Trenberth published his group's confirmation that the 1986-

87 ENSO had been replaced by an anti-El Niño weather conformation. He describes the winter season over the Northern Hemisphere as typical for an El Niño event, except for the relative weakness of the southern fork of the jet stream, which often brings wet weather to Southern California. The northern branch of the stream was displaced to the north. This also trapped northern air and prevented it from moving into the Northern Plains States and the Western States.

By July 23, 43% of the area of the contiguous United States was in the severe or extreme drought category. The only comparable years in recent U.S. history occurred in 1934, 1936, 1954, and 1956. The U.S. drought is considered to have been a combination of two or more regional droughts. Although these dry conditions existed, just as to a greater degree with the Indian monsoons, the Pacific southwestern monsoon was moist.

Some theoretical considerations

The causes of the El Niño and anti-El Niño weather cycles are not really well understood as yet, although they are competently described. Of special significance with regard to the proponents of a greenhouse effect, is the fact that the El Niños and anti-El Niños include ocean/atmospheric interaction. Obviously, knowing the circulation patterns of particle emissions and greenhouse gases is critical in making accurate predictions about changes in climate, that is, on the basis of their buildup.

One basis for the apparently more severe swings in weather over the past period is likely to be the rapid pace of deforestation, particularly in the Brazilian Amazon and in the Indonesian rainforest area. It is from these areas that tropical storms, hurricanes, and associated tornadoes are generated, and these in turn are major conveyers of energy on a biospheric basis.

The biosphere as a whole has a certain ability for self-regulation through a feedback process. Thus, for example, additions of carbon dioxide to the atmosphere can foster a higher rate of photosynthesis in plants and trees, if we have not caused their destruction. The danger today is that this normal feedback process may be in process of destabilization. Climate as a whole is subject to various oscillating patterns; however, in normal times, these oscillations are bounded.

The policy issues

The large-scale of the deforestation now occurring has been used as a pretext by environmentalists working on behalf of the World Bank and the International Monetary Fund, working through agencies like Worldwatch and the World Wildlife fund, to attack the national sovereignty of nations such as Brazil. They are demanding that the forest regions be turned over to environmentalist groups who would control them. In return, Brazilian debt would be reorganized. These proposals overlook the fact that it was precisely the World Bank and the International Monetary Fund who forced Brazil to strip the rainforest, because of the brutality of their "conditionalities" policies toward that nation.

The environmentalists would turn the world back to the Stone Age. Indeed, their policies of restricting needed steps forward in technology can even, in the end, have the effect of destroying the ecological basis for the continued existence of mankind as such. Over one dozen bills dealing with "global warming" are right now being introduced in the Congress, sponsored by a large number of senators and congressmen.

The genocidal policies directed against the less developed countries are clearly enunciated in the Global Warming Prevention Act of 1989, just introduced into the Congress by Rep. Claudine Schneider (R-R.I.), the great champion of all environmentalist causes. This bill typifies the policy direction pushed by the same ideologues who—dishonestly or merely incompetently, as the case may be—are trying to create hysteria around the weather as a pretext for pushing environmentalist controls on industry in the West and on development in the Third World.

Schneider's 210-page bill calls for the U.S. government to take extensive tracts of land out of food production and cultivate sugar cane for ethanol production as a petroleum substitute. It also states, "No assistance may be furnished under this act for large-scale production of energy," and, "The Secretary of the Treasury shall instruct the United States Executive Director to each multilateral development bank to oppose loans and other financial or technical assistance to any country for which a least-cost energy plan is not in place." Thus, as defined in Schneider's bill, any underdeveloped country which dares to build a hydroelectric dam, fossil fuel power plant, or nuclear plant, will have all of its international loans cut off.

The bill insists that loans and aid for the development of modern motorized transportation in the less developed countries be eliminated, and instead: "Priority shall be given to programs that enhance access of the poor to low-cost vehicles and efficient carrying devices, including access to credit for the purchase of bicycles, carts, pack animals, and similarly affordable, nonmotorized vehicles . . . [and to] encourage countries to develop local bicycle assembly and cart production capabilities for domestic use. . . ."

If the coming year's weather continues to mirror the extreme instabilities of the past several years, considering the policies already in existence, or being proposed, we can look forward with horror to a period of global famine.

The answer to stopping the deforestation of the developing sector is to provide financial and technical assistance to rapidly develop high-technology alternatives to burning biomass for fuel and slash-and-burn agriculture—in other words, the direct opposite of the Schneider bill. The first step for the United States, in this direction, would be to get its own nuclear and fusion program back on track. Bills such as Schneider's are criminally genocidal in their intent.