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by

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Human rights, environment and climate stabilization

On December 10, 1948, came the birth of the Declaration of Human Rights. That was a time following the destruction of war. That was a time of creation, the formation of the United Nations, the international forum and guiding body for all nations.

That was a time when the environment was viewed by most people as unchanging and permanently life supporting.

That was a time when geologists searched for clues and studied the age of the earth, the movement of continents, the periods of expanded ice formation, and, yes, the relatively recent series off twenty or more glacial periods (each lasting from about 70,000 to 120,000 years).

Did anyone connect glacial periods to the environment around us, our weather, the growing of our food? Did anyone connect glacial periods to human rights?

That was a time back in the 1940s.

That was when the average annual temperature in the northern hemisphere had been rising since the beginning of the century. Atmospheric carbon dioxide (CO/2) had also been rising significantly — a jump of ten or more points in the later 1800s, as farmers seriously cut back forests in Europe and North America, then a rapid rise in the 1900s. The "greenhouse effect" increases with CO/2 in the atmosphere. The cycle has been moving. The cycle includes increased warming and evaporation where the sun hits more directly and increased cloud cover and snow in the higher latitudes -- more freezing climate coming down, shorter growing seasons for food crops. The additional warming was predominant until about 40 years ago. By then the increased cloud and snow conditions started to become predominant and northern hemisphere temperatures started down.

We are now well into the transition into the next glacial period. The 40 years of the Declaration of Human Rights is also the very same time of seriously increasing weather extremes — areas and periods of heat as well as areas of increasing and more erratic freezing.

Extending the recent history of natural catastrophies, driven by increasing hot and cold air masses (and resultant air and water currents), gives an estimate of ten to fifteen years and our lives will all be at risk from the destructive effects of

functioning infrastructure from rapidly increasing heat/drought, freezing, snow and ice, irregular frosts, high winds, hurricanes, floods, and shorter growing season.

To close the gap means to bring the biospheric balance of earth and atmosphere from 25 to 15 years and mobilize for cooperative survival, to the extent possible, during the next ten or fifteen years.

It is essential to look at the primary physical processes of our earth: soil demineralization, forests dying and being overcut, CO/2 increase, cloud increase, snow and ice increase, and climate intensities by season and latitude. We hear about temperature data. Temperature is a reflection of the primary physical conditions of the soil, biota (forests, swamps, plankton in the ocean), CO/2, clouds, snow/ice, oceans, and the changing processes taking place. Temperature data, is, of course, limited in how much it can tell us about the primary processes themselves.

Consider, for example, the value of taking material (a) on "greenhouse" gases and climate by K. Ya. Kondratyev of the USSR, (b) on permafrost, soils, cooling, by Victor Kovda of the USSR, and (c) on soil remineralization with rock dust and organic additives to bring dying forests back to life by Gernot Graefe of Austria. Consider the possible results from the combining of findings and analysis of three such sources, and possible programmatic outcomes more interesting than any one of them might have anticipated.

In this context, two climate stabilization programs are indicated on Figure 1. These programs are based on simple assumptions, but the main point is highlighted, i.e., that a "best possible" biospheric program (using Ø.3 Gt C reduction/yr. and then Ø.5) still leaves us approximately ten years short of the goal of stabilizing climate. The critical conditions have to do with rapidly increasing disasters from flooding, hurricanes, tornadoes, heat and drought, freezing spells in the winter and spring, dying and burning forests, and more. There is at least a ten year time gap between our climate needs and environmental possibilities.

Figure 1

Move the "population" curve and the "27-year program" curve towards each other, and close the gap. This is what survival means from now on, "close the gap".

ACTION: Attempt to move the "population" curve outward and upward -- protect against climate disasters. Try to speed up still further the "27-year Program" curve -- remove the excess CO/2 before it is too late (this would be reflected in Figure 1 as a shift to the left. Enough shift and much of the world's population would be saved from being wiped out.)

Figure 1 is developed in a simple format in order to focus on the basic conditions, the basic problem, and the direction that research, planning and action must take from this time forward.

Close the gap from two sides

The point of this paper is urge that future work on climate analysis, planning and stabilization efforts focus on the two sides of this gap: (1) how regional societies can support themselves and help each other as conditions get rapidly worse; and (2) how we can speed up the CO/2 reduction, given the time frame indicated.

We consider that Figure 1 is the best indicator of what we are facing. This suggests the following set of programs.

climate change, particularly from shorter or insufficient growing seasons.

Our environment is no longer supportive and infinite. Industrial, military, agricultural and urban pollution is causing illness and death at a rate not yet fully understood (or exposed to public knowledge).

Our climate is no longer the variable climate (but within stable bounds) that humans have known for the 10,000 plus years of the interglacial period.

What we have been doing so far is setting forth a context for the most supreme effort humans have ever made. When the ice melted back at the end of the last glacial period (from about 18,000 to 11,000 years ago) there may have been about five million people total. Now we are five billion, and we are all going to be at risk.

The proof and "hard data"

Soil minerals and trace minerals (a few cubic centimeters per acre, such as zinc) have been leeched down by 10,000 years of rains, or eroded away. In the main soil testing laboratory in the US, in New Knoxville, Ohio, the Director suggests we view the situation as roughly a 25% to 40% reduction. Forests are reduced by nearly half compared with 2500 years ago. CO/2 is up from 270 parts per million to 350 ppm in the atmosphere. Cloud coverage is up in middle latitudes. The recent study by scientists in the Federal Republic of Germany indicates that the amount of cloud coverage now is reflecting more than twice as much heat away from the earth as is generated by the warming in the lower latitudes. Hubert Lamb, of England, stressed this effect many years ago. The snow cover is greater, deeper, and lasts longer into the spring, shortening growing seasons in northern latitudes. These are the primary physical conditions, when taken from a general system approach, are now seen to be determing the transition into the next glacial period.

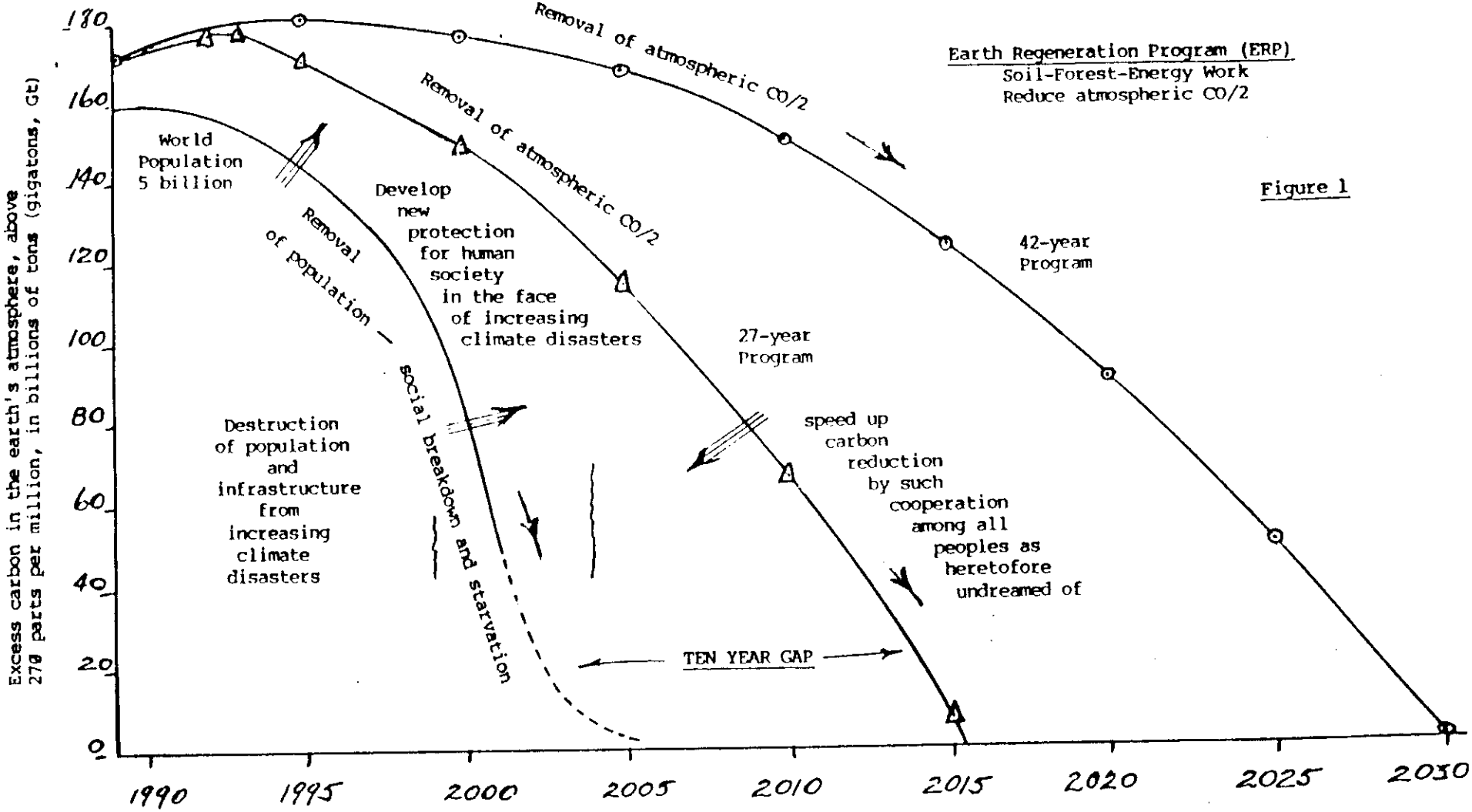
For three years now the International Society for General Systems Research has, in its annual meetings, included a session on climate -- with attention to the primary systems determing climate change (relations between soil mineralization, forests, CO/2, clouds, snow/ice, and erratic weather extremes in summer and winter). The concern has been for the rapidity with which the earth is moving into a next glacial period. The concern has been with the increasing tempo over the last 40 years of warming in the lower latitudes, producing increased cloud cover and snow -- greatly increased snow conditions on the glaciers in Alaska, in the Northeast of Canada, in Tibet. Snow depth is greater and the snow is lasting longer into the spring. Growing seasons are shorter in parts of Canada. Reference C. Bertrand Schultz, Gifford Miller, Maynard Miller, Dreimanis, Kukla and Watt.

Kenneth E.F. Watt, of the US, is finding a lack of correlation between the amount of fossil fuel used and the rise in atmospheric CO/2, and a strong case for the relation of CO/2 increase to soil mineral depletion, dying forests, more susceptibility to fires and pests, and the impact of increasingly irregular freezing spells on northern and mid-latitude forests.

Often we find references to increased rate of plant growth in response to increased CO/2, with no mention of soil mineral content. When there is a general depletion condition in the soil, no amount of CO/2 in the atmosphere can encourage plant or forest growth. The proof lies in the dying forests and the opposite, i.e., remineralization work carried out by Graefe under the Austrian Academy of Sciences.

Focus on the problem and the solution

There is a gap between the required soil-forest-energy program (e.g., 42-year strong, or 27-year super program) and the destruction of food supplies and



42-yr. program ERP at 0.3 Gt C/yr net removal; with 2.5 Gt net C increase/yr for 8 yrs. and 2.0 for 34 yrs. Carbon removal (new forest, marsh and swamp growth) and carbon increase activities (fossil fuel, forest dying, cutting and burning) are treated as separate activities.

27-yr. program ERP at 0.5 Gt C/yr net removal; with 2.5 Gt net C increase/yr for four yrs., 2.0 for one yr., zero for 22 yrs. Primarily, transition to (benign) alternative energy technology within five years.

Our Common Goals

It is time to search for common international understanding of:

(1) carbon in the world's atmosphere: 745 Gt, 1988

(2) the amount of carbon to remove in order to attempt climate stabilization: reduce 350 ppm to 270 = -80 ppm x 2.13 Gt C/ppm = 170 Gt C

(3) the amount and type of forests, or other biota, to plant, to rejuvenate, or to save from destruction: regional CO/2 plans throughout the world, optimize CO/2 reduction

(4) area of soil remineralization to save forests, hectares of rock dust application with organic additives, as specific to each region (for example, note: Austrian methods, Dr. Gernot Graefe, Vienna) -- include as part of regional CO/2 plans. Try to optimize, i.e., plant the fastest growing forests first.

(5) regional plans showing estimated contribution to CO/2 increase or decrease, by region, in each of the next five years, coordinated through the United Nations, covering most of the world's land surface, and some of the ocean area: regional plans need to come from the people of the area, and to some extent in cooperation with people from other areas.

(6) financial and resource transfers between developed and lesser developed countries to expedite climate stabilization programs: this suggests annual budgets of what each country can give to the whole and then what each country needs

(7) peace -- increase efforts by the United Nations to participate with local forces to resolve situations in those areas where violence and armed conflict continue. Do so in order that the people of those areas may bring about conditions under which they can create sustainable local and regional economic systems, combined with an adequate quality of life, which can provide the basis for earth regenerative programs. Proceed region by region, and tie into CO/2 plans for each region. CO/2 plans can be quite comprehensive on soil, forests, and certainly as regards energy activities.

Additional program directions

Divide the globe into working regions, each to have its CO/2 reduction goal in quantity and time. The sum total of the regions should be brought — to begin with -- on paper at least, in line with the figure of 170 Gt C.

Each region has its own specific conditions of soil, trees, ground cover, food production, people, their culture and history, and needs its own region-specific plan. Some regions will be able to have a net reduction effect on CO/2 in a coming year; others will not. It is the sum of all regions that must relate to the figure of 170 Gt C.

Here is the time when much of the best science, technical, and social talent must be brought together to work out carbon-reduction activities beyond any previous plans. Here is one line of transition from military to earth regeneration programs.

Industry groups will have to help set and reach targets — in soil, forest and energy work. Both industry and labor will each have strong parts to play, or the job cannot get done. See the CO/2 Council proposals in the Emergency Climate

The tendency toward organizational strength, progress on climate stabilization, toward implementing an earth regneration program, implementing physical work on soil, forests and energy to bring down CO/2, can come through use of the CO/2 budget (CO/2-B).

The CO/2-B represents the physical units determining the climate change, the rate of natural disasters, the loss of human population with its food and infrastructure, and the rate and intensity of the oncoming glaciation process.

The CO/2-B is in essence the opposite of a financial budget. The dollar figures in a budget represent units necessary for the production and distribution of goods and services. You cant eat them or use them directly. They are a kind of fiction to facilitate the production process in a society. The CO/2-B is qualitatively different. It is made up of CO/2 units, grams of carbon in the atmosphere, the increase and decrease of the CO/2 during a time period (basically a year, with shorter and longer budgets for planning purposes).

We are now in a new period of history. The growing threat of destruction of most of human life with the changing climate is creating a central and unifying effect. Private enterprize countries, countries with mixed economies, those with planned economies are all being confronted with growing climate intensities. It is the same problem, with each society looking at it with different structure and ways of operation. It is the same problem confronting political parties whether conservative, central, or left. How they respond comes out of the conditions of their lives of their members, where they are in the social, economic and political structure and the conflicts they now face. In the case of England, how will the Tory, the Labour, and the smaller parties respond to the necessity of climate stabilization and the question of human survival over the next ten to fifteen years.

In the U.S. the time can not be very far off when President George Bush, leading elected Democrats, Reverend Jessie Jackson, National Chairman Gus Hall, the Green movement, and others, must sit down together and look at the same climate stabilization problem, at the common goals within the U.S. and in cooperation with other countries. How they relate to basic conflicts, to the question of bringing up the quality of life for all people in the country, to transfer of military resources to soil, forest and energy work, to the transfer of operations from fossil fuel and nuclear sectors into benign non-toxic alternative energy technology. These are the basic conflicts, the method of solution of which will determine whether or not we manage to stabilize climate in time.