

THE FINAL EMPIRE

Volume 1

The Collapse of Civilization

Part 1

THE HISTORY OF DISINTEGRATION

CHAPTER 1

PATTERN OF THE CRISIS

Collapse on the Periphery

Individual empires have suffered cyclical collapse since civilization began. The Babylonian, Greek and Roman empires are classical examples. These civilized empires initially expanded, funded by their base of arable land, grazing areas and forests. As they reached out, conquering new lands and peoples, their growth was fueled by slave labor and appropriated resources. Their growth continued until the ecological base of the empire was exhausted. At that point, the empires imploded. Sumeria and Babylonia stripped their lands through overgrazing and deforestation. This brought down huge amounts of erosion material that threatened the irrigation works. They also inexorably salinized their soil by irrigation. Early on, in the history of the Greek Empire, Plato complained of the ecological devastation in the area of Attica. By the end of that empire the ecology of the whole of Greece was severely injured. Both the Greek and Roman empires used North Africa as a "breadbasket" and by the close of the Roman Empire it was ecologically destroyed along with much of the rest of the Roman territories.

Though the standard political and social histories of these empires do not stress an ecological view, there is certainly no question that at the end of their cycles these empires had little ecological energy remaining.

Anywhere the culture of empire (a.k.a., civilization) has spread one finds devastated ecologies. The life is literally "rubbed out," the original life is gone. Much of the living flesh of the planet does not now exist in those places. But, we know that it did exist. The life in those areas has suffered a die-back. The forests are gone, the topsoil

is depleted and the land is eroded. The richness of the land has been used up. The wealth of the earth's life has been spent by the extortion of empire.

Empires implode. They collapse from within. This is beginning now on the edges of world civilization where the ecology has been stripped, the population is exploding and the resultant social turmoil insures further decline. These implosions of the colonies will eventually become general throughout the cultural system.

Islands such as Madagascar, the Canaries, the islands of the Caribbean, many south sea islands and others have been ecologically stripped. In areas like Peru, whole mountainsides fall off because of the ecological devastation caused by deforestation and hillside farming. In Brazil's Northeast, the coastal rain forest and the fertile areas further inland have been replaced by desert. In some areas of the former fertile southern interior of Brazil, coffee plantations have reduced the land to such eroded conditions that cows cannot even graze it for fear that they will fall into the canyons created by soil erosion. In Central Asia, many bodies of water such as the Azov, Caspian, Black Sea and Baikal are severely injured. The supply of caviar there has almost ceased because the waters are so polluted that the fish die. In Tibet where the Chinese Empire has invaded, devastation is spreading as trees are cut, steep areas are plowed and mines are begun.

The story of the brief empire of Venice is instructive as to how the ecological base of empire injures the earth and how the culture of empire uses up the life of the earth to generate its ephemeral power. By the end of the fifteenth century the City of Venice was emerging as a sea-power. Venice traded all the way from the eastern Mediterranean to England. Galley ships were the power behind the merchant fleet. The oar-powered galleys ultimately depended upon slave labor. They were fast and could navigate where sailing ships could not. The whole arrangement was based on wood for ships, and in turn depended upon forests, which in the beginning were abundant near Venice. As the power of Venice was coming to an end, the City was obtaining ships in Barcelona built with lumber from the forests of northern Spain and finally from the Baltic region of northern Europe, which had not yet been stripped. By this time there were no forests anywhere in the Mediterranean that could fund a sea-faring empire.

This phenomenon of implosion is occurring now in the present World Empire. The country of Bangladesh shows us one type of implosion. In the distant past the whole of the area was populated by forager/hunters such as those threatened tribes who live now in the Bangladeshi hills. As the waves of empire culture came, first with the Indo-Aryans thousands of years ago, the life of the area was progressively degraded. Bengal as it was formerly called, was conquered by the English early in the colonial period. Prior to the conquest it had been a fertile and self-sufficient area. When the English moved in they began to put heavy pressure on the organic fertility. They established the plantation system and mined the agricultural land to ship valuables to the "mother country." Later, in the Twentieth Century when England was severed from its colonies on the Indian subcontinent, the region became part of Pakistan and finally an independent country. In the later years, Bangladesh has suffered flooding, a constant population explosion and periodic drought.

Bangladesh is located on the delta of the Ganges River that drains the Himalayan range. With the Chinese now stripping Tibet, floods and erosion material race down out of central Tibet borne by the Bramaputra River that joins the Ganges and comes through countries that are being stripped along the southern tier of the range: Bhutan, India and in particular Nepal. Because the forests are being stripped, the land no longer can absorb water and the floods grow larger. *The State of India's Environment: 1982*, a report by non-governmental groups, states: "From Kashmir (far west) to Assam (far east) the story is the same. Below 2,000 meters (6,500 feet) there are literally no forests left. In the middle Himalayan belt, which rises to an average height of 3,000 meters (9,800 feet), the forest area, originally estimated at being a third of the total area, has reduced to a mere 6-8 per cent."¹

A global environmental study, *Gaia: An Atlas Of Planet Management*, says that the erosion is so bad that an island of five million hectares (12,355,000 acres) of erosion material is beginning to surface in the Bay of Bengal. "Around one-quarter of a million tonnes (255,325 U.S. tons) of topsoil are washed off the deforested mountain slopes of Nepal each year, and a further sizable amount from the Himalayan foothills in India's sector of the Ganges catchment zone." The study notes that the countries of India and Bangladesh are geared up to contest possession of the island when it surfaces.²

Due to the periodic catastrophes of flood and drought the society of Bangladesh is beginning to disintegrate into a low-level warlord society where even the central government cannot exert control much distance from the capital city. One effort that the government is making to alleviate its population crush is an attempt to settle a relatively small "hill country" area with lowlanders. These hill areas contain remnant tribes of non-civilized people. The Bangladesh government has warred against these people for some years, attacking them with modern armies and rounding up the survivors into concentration camps. As the lowlanders invade into the vacuum, they level the forest and attempt to raise crops.

On the lowlands, a large share of the population lives in the delta. Here the impoverished people fight each other for small plots of land. As the floods come and go, the islands and marshes change continually. As the above-water areas dry out following a flood, the people rush in to claim small plots on which they attempt to grow food before the next flood or drought.

The combination of exploding population and ecologically based disasters is causing the society to disintegrate. This process which began years back in Bangladesh is one of the effects that we can expect to see in the years ahead in other parts of civilization.

Writer Mohiuddin Alamgir, researching his report, *Famine in South Asia; Political Economy of Mass Starvation*, asked villagers in Bangladesh during a famine in 1974, about the reasons why people were dying around them. He found that the villagers had only a vague notion about the true cause. The villagers could see that people were dying of disease and that they had various symptoms but few villagers could see or admit that people were starving. The villagers were in a weakened condition, which allowed them to die of the first disease that came around. Death was the end result of the steady social deterioration that they had experienced. "Once people ran out of resources to buy food grains, they sold or mortgaged land, sold cattle and agricultural

implements, sold household utensils and other valuables (such as ornaments), and, finally their homesteads," says Alamgir.³

When there is nothing left and people are starving, they leave and wander aimlessly about the country of Bangladesh. Many of the uprooted households that Alamgir studied had begun to disintegrate, with members of the same household wandering off in different directions toward separate areas of the country. Deserted children, deserted wives, deserted husbands and deserted elders are becoming commonplace. Bangladesh society has gone over the brink. The centralized control by the wealthy elite and the military has broken down. The population is destined to continue as a wandering, increasingly hungry mass until, sometime in the future, all coherent human society and culture dies and human cooperation and optimistic effort disintegrates. It is this condition, as shown by Bangladesh, which is the ultimate end of a culture that eats up its survival systems.

We need keep in mind that forager/hunter populations lived in stability in this area for hundreds of thousands and perhaps millions of years because they did not destroy that which sustained them.

Alamgir states that after previous famines in Bangladesh, the society returned to near normal social relationships, but he reports:

"Both separation of families and desertion represent a breakdown of the system of security provided by family and kinship ties under traditional social bonds. This is, of course, not unique in the 1974 Bangladesh famine, as reference to erosion of social ties can be found in almost all preceding famines. However, two points should be noted: First, a slow process of disintegration of traditional ties had already set in and famine only accelerated it. Second, manifestations of breakdown of kinship and family bonds were reversible in the past in the sense that old relationships were restored through the normal process of post famine societal adjustment. This is no longer true in the Bangladesh scenario today where such processes seem to be irreversible, which is reflected in the rate of permanent destitution."⁴

The horn of Africa region where the country of Ethiopia is located represents another example of implosion. Ethiopia is hit with periodic drought. If the region were in its primordial climax ecological condition the droughts would likely have minimal impact but like Bangladesh, the region's ecology is so ravaged that any perturbation of climate becomes a disaster and the human created situation is called an "act of God."

Ethiopia originally had a stable population of forager/hunter people but it became one of the "cradles of civilization." The life of Ethiopia is now almost gone. Almost all of Ethiopia is high, mountainous country with good rainfall, but there is little vegetative life left. The ancient empires were nourished on it and the vitality has evaporated. It is estimated that three quarters of the country was originally forested yet at present only four percent of the country has forest. One study estimates that the volume of live trees now, is 800 million cubic meters and then goes on to say that the annual fuel wood consumption is 20 million cubic meters and rising rapidly.⁵ Even if the remaining forests were only used to heat houses and cook food they would not last long.

Despite having one of the highest death rates in the world, the country's population continues to rise. One would think it would decline but unlike our former forager/hunter culture, which sought to keep their population within the carrying capacity of the environment, people of the culture of empire do not. The people of civilization have many motives, other than simply lack of awareness that propels population growth. One important reason is that civilized people work at exploiting the land and the more hands the more production. Agrarians, for example, traditionally have large families to help with farm work and hard times call for more hands to force the land to produce more. There is also motive for large families so that one will be cared for in old age. There is the motive of the pride of the patriarch in large families. Though there are a number of basic motives, there is a functional reason also why population is not responsive immediately to food supply. If there is a famine or drought, the children already born will have children. Demographers say that population responsiveness has a time lag of seventy years to social/environmental events and even this responsiveness is only a momentary blip on the over-all graph line of exponential growth.

One researcher highlights the continued drama of destruction in Ethiopia partially attributed to population growth:

"A dramatic alteration in environmental quality has been visible within a single lifetime in the hills surrounding Addis Ababa. When the capital was founded in 1883 by the Emperor Memelik II, it was still surrounded by remnants of rich cedar forests and reasonably clear streams. Deforestation and erosion were immediately spurred by the influx of humans. In the ensuing nine decades, virtually all the available land in the region has been cultivated, while charcoal producers cut trees within a 160-kilometer radius for sale in the city. Now the waters of the nearby Awash River and its tributaries are thick with mud, and waterways are shifting their courses more markedly and frequently than in the past."⁶

Addis Ababa sits in the high mountains of central Ethiopia. It is near the headwaters of the Awash River. From Addis Ababa, the river courses northeast into a rapidly widening valley that eventually reaches the coast at Djibouti on the Red Sea. UN researchers expect the whole Awash Basin to soon become rocky desert; but the eye of civilization sees only war, ideology and revolution. The problem is ecological but the cultural attention and media-focus emphasize war. As civilization fixates on war and violence in Eritrea, Somalia and Ethiopia, in the Horn of Africa, the life of the earth dwindles in that area and starvation spreads. Although the destruction of the life of the earth is caused by civilization, civilized society is unable to see its own problem because the organic life of the earth is below its threshold of consciousness.

El Salvador, in Central America, is another country that is imploding on the periphery of the Empire of Civilization. The Spanish Empire invaded the area that is now El Salvador early in the sixteenth century. They immediately began to enslave the stable and sustainable cultures of the region as factors of imperial production. At that time, the western two-thirds of the country was inhabited by a Nahuatl speaking culture. The Nahuatl language group includes Aztec, Hopi and Ute. In the eastern one-third of the country, across the Lenca River lived the tribes named Lenca, Jinca, Pokomám, Chortí and Matagalpa. There are now some half-million "invisible" Indians in El Salvador, in a country of five million. They are invisible because they have been

forced to abandon their native dress and language. The first census from the years 1769-1798 listed 83,010 Indians in a population of 161,035. Initially, the native people of the lowlands were enslaved into the Spanish estates. These original estates exported cacao and balsam. By the end of that century, indigo plantations were spreading out further into the last Indian communal lands in the higher elevations. Soon cattle ranching moved into the northern tier of the country and masses of Indian people, who were not among the indentured workers, were wandering through the area in a detribalized condition. The native people's habitat had been destroyed. Inasmuch as their cultural knowledge and skills were related to the living world, the native people became powerless and dependent upon the invading culture. By the middle of the Nineteenth Century, coffee began to be the major export crop and this agriculture with its need for the last available higher elevation land, began to finish the remaining communal Indian lands as well as their forest habitat. By 1930, coffee was more than ninety percent of El Salvador's exports.⁷

In 1932, in the midst of the world depression, Indians in the highlands around Sonsonate revolted against both the imperial conquerors and their latino subjects, the mestizos. The army of the oligarchy was unleashed against the unarmed Indians. The virulent anti-Indian racism of "latinos" was also unleashed as they, also, began to participate. By the time the massacres were over, somewhere variously estimated at between 15,000 and 50,000 children, women and men had been murdered and the native land base was occupied by the aliens.⁸

The story of El Salvador is of native tribes who lived stably with their habitat, the forests and other ecosystems of the isthmus. The events since that time have been created by the far different culture of empire, which invaded, to extort valuables from the area. The pattern displayed has been consistent since empire culture began. The industrial revolution and markets have added a few new wrinkles. The pattern is that of a small powerful elite taking land and labor from the colony for free or at very low price. The extorted valuables are then exported in exchange for currency that supports the elite of the colony who, in return, keep the native populations in control. This is the classic picture of third world colonies and is the picture of El Salvador. This pattern has persisted in El Salvador and is largely the reason for its environmental destruction. The oligarchy runs the country on a feudal basis little changed from the days of the conquistadors. This means that in the pursuit of their profits they need observe no environmental laws. They may take any land they need, they may use any type and amount of agricultural chemicals on their crops and they may dump toxins in any manner that they please. One group that researches Central America's environmental problems says that as of 1990, "75 per cent of pesticides exported to Central America from the U.S. are either banned or severely restricted for use in the U.S."⁹ This elimination of the cost of environmental protection controls makes El Salvador a high-profit enclave for its rulers and for the transnational corporations located there. They are provided with an impoverished and cheap labor pool, which is unable to organize effectively because of military repression and death squads. They do not have the expense of meeting environmental standards so this gives them a decided competitive advantage over other countries.

Since the arrival of civilized culture, 95 per cent of the country's original tropical, deciduous forest has disappeared. Twenty mammal species and eighteen bird species are gone. Serious soil erosion affects 77 per cent of the country. Following

deforestation, groundwater is disappearing, sediments are beginning to fill the dams and stop the hydroelectric supply and the United Nations Food and Agriculture Organization says the country is undergoing a process of desertification.¹⁰

In the familiar pattern, particularly since World War II, the alliance between the domestic oligarchy, U.S. aid agencies and transnational corporations have increased exports which has led to the clearing of the last viable stands of old-growth ebony, cedar, mahogany and granadilla trees. Where the country was once food self-sufficient it now exports cash crops of food items and even flowers to the industrial countries (for the profit of the oligarchy) and imports food.

The Environmental Project On Central America (EPOCA) says that: "Today unequal control of resources remains at the root of poverty and environmental destruction in El Salvador. A small elite, referred to as the 'Fourteen Families,' comprises less than 2 per cent of the population yet enriches itself from ownership of more than 60 per cent of the country's arable land. The poorest 20 per cent of the Salvadoran people own no land and receive only 2 per cent of the national income." In the countryside, the report says that: "two-fifths of the population cannot afford a basic diet of corn and beans."¹¹

The EPOCA report says that one in ten have access to safe drinking water. "Look at a body of water in El Salvador and you will see a reflection of almost every major environmental problem in the country: pesticide and fertilizer contamination; industrial pollution; municipal waste and sewage; sedimentation from deforestation and soil erosion; and waterborne diseases. All the major waterways in El Salvador are contaminated by raw sewage and a variety of toxic chemicals, according to a 1982 report by the U.S. Agency for International Development."¹²

With the oligarchy occupying the land that an agriculturist would call "arable," the poor are forced up onto the mountainsides where they use slash and burn agriculture. Because the people are overcrowded and there is not enough land, the fallow periods on the slash and burn plots are too short. This quickly erodes the topsoil and leaves the mountains denuded of all vegetation except for hardy brush. In 1974 there were 400 people for each square mile of El Salvador. The population doubling time in El Salvador is now twenty-two years.¹³

These three countries, Bangladesh, El Salvador and Ethiopia, with their varying histories and varying types of impact from civilization characterize the periphery of what we may term the industrial empire. These are the conquered and colonized resource and labor areas and their societies are collapsing under the pressure of environmental degradation, population explosion, and militarism and export economies. If the oligarchy of El Salvador were to suddenly depart for Miami, the country would still be in a state of disintegration. The soil, water and air are poisoned. There are few natural resources left and importantly for our analysis, the civilized culture of the people of El Salvador would not be disposed to restore the land mass to the climax ecosystem, even if that were possible.

This is the beginning of the end for the Final Empire of civilization. Here we see in these examples that there is little remaining to take out and the populations are exploding. When two people have five children and then fifteen years later those five

children have five children the stage is being set for disintegration. As these factors of soil and ecosystems work themselves out into social turmoil and breakdown, the reports of the media refer to revolution, economics and politics. The life of the earth is not within their consciousness.

As the regions on the periphery of the empire implode, the center is also imploding, though in a qualitatively different way. The most general statement to make on the system-wide implosion of the industrial empire has to do also with the cultural consciousness. Because of the nature of the culture, it lives and profits by exhausting the life of the earth. Within the cultural bubble we tend to measure our progress by our wealth. The more pressure that the farmer puts on the soil, the more the farmer and the banker profit. The more forests that are cut, the more the timber company and the employees benefit. What this means is that as the life of the earth is eradicated, the information feed-back system (bank accounts) reports that things are getting better and better. Progress is being made. This is another major example of how the reality of life is below the threshold of consciousness and also helps to explain why civilization cannot extricate itself from the fall toward apocalypse.

As we approach the end of the Final Empire, societies become paralyzed and disintegrate. There is nothing left with which the society can regenerate itself. In El Salvador, even the "arable" soils are exhausted and poisoned because they have been subjected to years of industrial agriculture with its poisons and artificial fertilizers. The other side of this grim equation is the population explosion. This is compounded by the fact that a majority of the population now is youthful and just beginning to come into their child bearing years. This means that the already overbearing population has reached a take-off point and will climb even more steeply.

The life of the earth dies out at varying speeds. So that we do not lose contact with reality we must look at this. These examples show swift destruction. It is possible to see the huge erosion canyons in Ethiopia. It is possible to see the floods of Bangladesh and it is possible to count the children in hospitals in El Salvador who have been poisoned with agricultural chemicals. Although not as dramatic, we must realize that our own backyard is degraded and poisoned. If any of us walk out of our back door and look, we will see gross injury to the life of the earth. We may view a lawn that has been subjected to poisons and artificial fertilizers. At some point in the history of that small area, toxins may have been introduced such as motor oil, household cleansers or maybe air drift or subsoil moisture seepage of some industrial dump. The point is that if the climax ecosystem is not there then the earth is losing its life. This is a difficult concept for modern people to deal with mentally. The statement is that the life of the earth, the climax ecosystem, must regain balance or the earth will become substantially dead. The natural state of health and balance of the earth is to be covered with climax ecosystems or ecosystems closely approximating them.

There are examples in the Mid-East of reg pavements (rock-hard soil) where forests once stood. The reg pavement is a hard, virtually impermeable, layer of clays and other dirt that covers wide areas. We have the example of El Salvador proceeding toward desert status (and there are other examples in other parts of the world of tropical forests becoming deserts). With both of these examples we can trace the historical devolution of these ecosystems and soils, which usually begin with the cutting of the forest. When we travel about the earth we don't always realize that

where we are seeing a desert now, there may have been a thriving semi-arid ecosystem. Where there is a brushwood hillside, there was once a magnificent forest. In those areas where we now see forest we will soon see deserts.

The life of civilization is only an eye-blink in the eons of time of the life of the earth. We can see the killing of the life of the earth in the rapid dramas as well as the long range spirals of descent. As we continue to examine the condition of our earth we must maintain contact with reality and realize that everywhere civilization has spread the earth is hurting, injured and dying. Even if an area is green with vegetation, it may only be the first aid crew of weeds struggling to heal the earth and the chances are good that soon the bulldozers will come to destroy even that, so that the "real estate" can be "developed."

Collapse From the Center

Our generation is on the verge of the most profound catastrophe the human species has ever faced. Death threats to the living earth are coming from all sides. Water, sunlight, air and soil are all threatened. When Eskimos of the far north begin to experience leukemia from atomic radiation and Eskimo mothers' milk contains crisis levels of PCB's, we must recognize that every organism on the planet is threatened.

Compounding this crisis is the fact that the prime forces in this affair, the civilized humans, are unable to completely understand the problem. The problem is beneath the threshold of consciousness because humans within civilization (civilization comes from the Latin, civis, referring to those who live in cities, towns and villages) no longer have relationship with the living earth. Civilized people's lives are focused within the social system itself. They do not perceive the eroding soils and the vanishing forests. These matters do not have the immediate interest of paychecks. The impulse of civilization in crisis is to do what it has been doing, but do it more energetically in order to extricate itself. If soaring population and starvation threaten, often the impulse is to put more pressure on the agricultural soils and cut the forests faster.

We face planetary disaster. The destruction of the planetary life system has been ongoing for thousands of years and is now approaching the final apocalypse which some of us will see in our own lifetimes. Far from being a difficult and complex situation it is actually very simple, if one can understand and accept a few simple and fundamental propositions.

The planetary disaster is traced to one simple fact. ***Civilization is out of balance with the flow of planetary energy.***

The consensus assumption of civilization is that an exponentially expanding human population with exponentially expanding consumption of material resources can continue, based on dwindling resources and a dying ecosystem. This is simply absurd. Nonetheless, civilization continues on with no memory of its history and no vision of its future.

Possibly the most important source of life on this planet is the thin film of topsoil. The life of the planet is essentially a closed, balanced system with elements of sun, water,

soil and air as the basic elements. These elements work in concert to produce life and they function according to patterns that are based in the laws of physics, which we refer to as Natural Law.

The soil depth and its richness are a basic standard of health of the living planet.

As a general statement we may say that when soil is lost, imbalance and injury to the planet's life occurs. In the geologic time-span of the planet's life, this is a swift progression toward death. Even if only one per cent of the soil is lost per thousand years, eventually the planet dies. If one per cent is gained, then the living wealth, the richness, of the planet increases. The central fact must be held in mind of how slowly soil builds up. Soil scientists estimate that three hundred to one thousand years are required for the build up of each inch of topsoil.

The nourishment of the soil depends upon the photosynthetic production of the vegetative cover that it carries. There are wide differences in the Net Photosynthetic Production of many possible vegetative covers. As a rule it is the ***climax ecosystem*** of any particular region of the earth that is the most productive in translating the energy of the sun into the growth of plants and in turn into organic debris which revitalizes the soil.

A climax ecosystem is the Equilibrium State of the "flesh" of the earth. After a severe forest fire, or to recover from the injury of clearcut logging, the forest organism slowly heals the wound by inhabiting the area with a succession of plant communities. Each succeeding community prepares the area for the next community. In general terms, an evergreen forest wound will be covered by tough small plants, popularly called "weeds" and the grasses which hold down the topsoil and prepare the way for other grasses and woody shrubs to grow up on the wound. ("Weeds" are the "first aid crew" on open ground.) As a general rule, the "first aid crew" - the first community of plants to get in and cover the bare soil and hold it down - is the more simple plant community with the smallest number of species of plants, animals, insects, micro-organisms and so forth. As the succession proceeds, the diversity, the number of species, increases as does the NPP, until the climax system is reached again, and equilibrium is established. ***The system drives toward complexity of form, maximum ability to translate incoming energy (NPP) and diversity of energy pathways (food chains and other services that plants and animals perform for one another).*** The plants will hold the soil so that it may be built back up. They will shade the soil to prevent its oxidation (the heating and drying of soil promotes chemical changes that cause sterility) and conserve moisture. Each plant takes up different combinations of nutrients from the soil so that specific succession communities prepare specific soil nutrients for specific plant communities that will succeed them. Following the preparation of the site by these plants, larger plants, alders and other broadleaf trees will come in and their lives and deaths will further prepare the micro-climate and soil for the evergreens. These trees function as "nurse" trees for the final climax community, which will be conifers. Seedling Douglas Fir for example, cannot grow in sunlight and must have shade provided by these forerunner communities.

The ecosystems of this earth receive injury from tornado, fire, or other events and then cycle back to the balanced state, the climax system. This is similar to the wound on a human arm that first bleeds, scabs over and then begins to build new replacement skin to reach its equilibrium state. ***The climax system then is a basic standard of***

health of the living earth, its dynamic equilibrium state. The climax system is the system that produces the greatest photosynthetic production. Anything that detracts from this detracts from the health of the ecosystem.

Climax ecosystems are the most productive because they are the most diverse. Each organism feeds back some portion of energy to producers of energy that support it (as well as providing energy to other pathways) and as these support systems grow, the mass and variety of green plants and animals increases, taking advantage of every possible niche. What might be looked at as a whole unitary organ of the planet's living body- a forest or grassland- experiences increased health because of its diversity within.

On a large scale, the bioregions and continental soils substantially support sea life by the wash-off (natural and unnatural) of organic fertility into aquatic and ocean environments. This is a further service that these whole ecosystems perform for other whole ecosystems.

A few basic principles of the earth's life in the cosmos have now been established. Balance is cosmic law. The earth revolves around the sun in a finely tuned balance. The heat budget of the planet is a finely tuned balance. If the incoming heat declined, we would freeze or if the planet did not dissipate heat properly we would burn up. The climax ecosystem maintains a balance and stability century after century as the diverse flows of energies constantly move and cycle within it. In the same manner the human body maintains balance (homeostasis) while motion of blood, digestion and cell creation, flow within it.

The life of the earth is fundamentally predicated upon the soil. If there is no soil, there is no life, as we know it. (Some micro-organisms and some other forms might still exist). ***Its vegetative cover maintains the soil and in optimal, balanced health, this cover is the natural climax ecosystem.***

If one can accept these few simple principles then we have established a basis of communication upon which we may proceed. Anyone who cannot accept these principles must demonstrate that the world works in some other way. This must be done quickly because the life of the planet earth hangs in the balance.

We speak to our basic condition of life on earth. We have heard of many roads to salvation. We have heard that economic development will save us, solar heating will save us, technology, the return of Jesus Christ who will restore the heaven and the earth, the promulgation of land reform, the recycling of materials, the establishment of capitalism, communism, socialism, fascism, Muslimism, vegetarianism, trilateralism, and even the birth of new Aquarian Age, we have been told, will save us. ***But the principle of soil says that if the humans cannot maintain the soil of the planet, they cannot live here.*** In 1988, the annual soil loss due to erosion was twenty-five billion tons and rising rapidly. Erosion means that soil moves off the land. An equally serious injury is that the soil's fertility is exhausted in place. Soil exhaustion is happening in almost all places where civilization has spread. This is a literal killing of the planet by exhausting its fund of organic fertility that supports other biological life. Fact: since civilization invaded the Great Plains of North America one-half of the topsoil there has disappeared.

The Record of Empire

The eight thousand year record of crimes against nature committed by civilization includes assaults on the topsoil of all continents.

Forests, the greatest generators of topsoil, covered roughly one-third of the earth prior to civilization. By 1975 the forest cover was one-fourth and by 1980 the forest had shrunk to one-fifth and the rapidity of forest elimination continues to *increase*. Indeed, World Wildlife Fund study released in 1998 states that between 1970 and 1995 the world's forests declined ten percent. This is a loss of forest cover the size of England and Wales- each year. If the present trends continue without interruption eighty percent of the *vegetation* of the planet will be gone by 2040.

The simple fact is that civilization cannot maintain the soil. Eight thousand years of its history demonstrate this. Civilization is murdering the earth. The topsoil is the energy bank that has been laboriously accumulated over millennia. Much of it is gone and the remainder is going rapidly.

When civilized "development" of land occurs, the climax system is stripped, vegetation is greatly simplified or cleared completely and the NPP plummets. In the tropics, when pasture is created by clearing forest, two-thirds of the original NPP is eliminated. In the mid-latitudes one-half the NPP is lost when cropland is created from previously forested land. The next step is, that humans take much of even that impaired production off the land in the form of agricultural products so that not even the full amount of that impaired production returns to feed the soil.

This points out a simple principle: ***Human society must have as its central value, a responsibility to maintain the soil.*** If we can create culture that can maintain the soil then there is the possibility of human culture regaining balance with the life of the earth.

The central problem is that civilization is out of balance with the life of the earth. The solution to that problem is for human society to regain balance with the earth.

We are now back to everyone's personal answer concerning how to respond to the planetary crisis. Most proposals for salvation have little to do with maintaining the soil. All of these seek to alleviate the situation without making any uncomfortable change in the core values or structure of existing society. They only try to "fix" the symptoms. If we had a society whose core values were to preserve and aid the earth, then all of the other values of society would flow consistently from that.

The civilized people believe they have an obligation to bring primitive and underdeveloped people up to their level. Civilization, which is about to self-destruct, thinks of itself as the superior culture that has an obligation to bring others "up" to its level.

Civilization, is a cultural/mental view that believes security is based on instruments of coercion. The size of this delusion is such that the combined military expenditure of all the world's governments in only one year- 1987- were so large that all of the social

programs of the United Nations could be financed for three hundred years by this expenditure.

Looking back at the simple principle which says that humans cannot live on this planet unless they can maintain the topsoil, demonstrates the delusion. The delusion of military power does not lead to security, it leads to death. The civilized denial of the imperative of maintaining topsoil, and the addictive grasping to the delusion that security can be provided by weapons of death, is akin to the hallucination of an alcoholic suffering delirium tremens!

Civilization must come to see that its picture of reality is leading it to suicide. It lives on topsoil and it is destroying that topsoil. This is ultimately a self-destructive act.

Here we have the whole of it. ***The problem is imbalance and the solution is to regain balance.*** Here we have the simple principle: if human actions help to regain balance as judged by the condition of the ecosystems and the soil beneath them, then we are on the path of healing the earth. If the theory, plan, project, or whatever cannot be justified by this standard, then we are back in the delusional system.

We of civilization have lost our way. We are now functioning in a world of confusion and chaos. We must recognize that the delusional system of civilization, the mass institutions and our personal lives function on a self-destructive basis. We live in a culture that is bleeding the earth to death, and we have been making long range personal plans and developing careers within it. We strive toward something that is not to be.

We must try to wake up and regain a vision of reality. We must begin taking responsibility for our lives and for the soil. This is a tall order. This will require study and forethought. That is what this book is about. Humans have never dealt with anything like this before. This generation is presented with a challenge that in its dimensions is cosmic. A cosmic question: will tens of millions of years of the proliferation of life on earth, die back to the microbes? This challenge presents us with the possibility of supreme tragedy or the supreme success.

Creating a utopian paradise, a new Garden of Eden is our only hope. Nothing less will extricate us. We must create the positive, cooperative culture dedicated to life restoration and then accomplish that in perpetuity, or we, as a species cannot be on earth.

NOTES

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3 *Famine In South Asia: Political Economy of Mass Starvation*. Mohiuddin Alamgir. Oelgeschlager, Gunn and Hain Pub. Sweden. 1980. P. 135.

4 *ibid.*, p. 135.

5 *Physical Environment & Its Significance For Economic Development With Special Reference to Ethiopia*. Sven Beltrens. C. W. R. Gleerup. Lund. Sweden. 1971. p. 110.

6 *Losing Ground: Environmental Stress and World Food Prospects*. Erik P. Eckholm. W.W. Norton & Co. New York. 1976. p. 94.

7 "The 500,000 Invisible Indians of El Salvador." by Mac Chapin. *Cultural Survival Quarterly*. Vol. 13. #3. 1989. pp. 11-14.

8 *ibid.* p. 14.

9 *EPOCA UPDATE*. Pressure Mounts To Halt Pesticide Exports. Summer 1990. The Environmental Project on Central America. Earth Island Institute, 300 Broadway suite 28, San Francisco, CA. 94133. p. 13.

10 *El Salvador: Ecology of Conflict. Green Paper #4*. The Environmental Project On Central America. Earth Island Institute, 300 Broadway #28, San Francisco, Ca. 94133. p. 2.

11 *ibid.* p.3.

12 *ibid.* p.3.

13 *Margin of Life: Population and Poverty in the Americas*. J. Mayone Stycos. Grossman Pub. New York. 1974.

See also:

Losing Ground: Environmental Stress and World Food Prospects. Erik P. Eckholm. W. W. Norton Co. New York. 1976.