Proposal to Establish a Planetary Management Institute (Research on Science, Religion and Politics, with Respect to Promoting the Quality of Human Life)

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A Proposal to:

The Government of Timor-Leste

[A PRELIMINAY DRAFT, FOR DISCUSSION]

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Summary

The author of this proposal, Dr. Joseph George Caldwell, is requesting support from the Government of Timor-Leste to set up a Planetary Management Institute in Timor-Leste. The vision of the Planetary Management Institute, as set forth in Institute's vision statement (at http://www.foundationwebsite.org/PMIVision.htm), is the achievement of a planet with an intact, stable biosphere, in which mankind lives in harmony with the other species of the planet.

The author has been writing in the field of population, energy and the environment for the past 15 years. Most of his writings may be seen at the Foundation website, http://www.foundationwebsite.org . Each month, thousands of Internet users visit this website to view and download copies of books such as *Can America Survive?* and articles such as "The End of the World."

It is the view of the author that the solution of Earth's environmental crisis will involve not only political, military and scientific activities, but a significant spiritual / religious / philosophical component as well. The proposal that follows describes the rationale for establishing a Planetary Management Institute in the context of establishing a dialog between science, religion and politics. It is proposed that the Institute be established as part of an existing University, such as the National University of East Timor (Universidade Nacional de Timor-Leste).

Introduction

Planet Earth is in a terrible situation. Gaia is dying. Large human numbers and industrial activity are destroying the biosphere, and causing the extinction of an estimated 30 thousand species each year. The respected naturalist Edward O. Wilson estimates that if this human-caused destruction does not stop, approximately half of all species will be made extinct in this century. The human population has increased in size to the point where it now uses an estimated 40 percent of the sun's energy available to living creatures on the planet. It is crowding out the other species on which its very survival depends.

Each year, the human population increases by over one percent, global industrial activity continues, and the environmental destruction continues. Atmospheric pollution from human industrial activities is so severe that global atmospheric warming is occurring. Each year, more of the world's rain forests – the so-called "lungs" of the planet – is destroyed by human activity. Despite the dire situation, all leaders of all the world's nations are calling for increased economic activity and industrial production, not for less. As global petroleum production starts to decline (expected by leading petrogeologists to occur this decade), the world's leaders are frantically seeking for alternative energy sources, so that a high level of global industrial activity may continue – along with its associated planetary environmental destruction.

There appears to be no end in sight, but for catastrophic collapse – certainly of global industrialization, and increasingly likely of the biosphere as we know it. World leaders

are determined to maintain large human numbers and industrial activity for as long as possible, irrespective of the severe damage that these are causing to the biosphere, the increased likelihood of human extinction, and the grave consequences for quality of life of all future generations of mankind. There is no thought of trying to keep human numbers in balance with the rest of the biosphere. All world leaders are committed to growth-based economics and a high material standard of living for billions of human beings – they adhere strongly to the Biblical adage, "A large population is a king's glory." Large human population and global industrial society will continue for as long as the energy supply holds out, or until the environment collapses, before they come to an abrupt end.

For many years, the world's scientists have been sounding alarm bells about human society's destruction of the planet's biosphere, but the world's leaders have ignored and are ignoring their warnings. In 1980, William R. Catton, Jr. wrote his now-classic work, *Overshoot*, in which he convincingly argued that rapidly expanding populations usually expand to the point at which they exceed the resources necessary to sustain them, and then they collapse ("die off"). Richard Leakey and Roger Lewin wrote the book, *The Sixth Extinction*, in 1995. René Thom, founder of catastrophe theory, observed that dynamic systems almost always collapse catastrophically, rather than fail gracefully. Jay Forrester, founder of system dynamics, observed this same characteristic of dynamic systems, over and over again. As Jared Diamond points out in his recent work, *Collapse*, history shows that most civilizations collapse abruptly. Mankind's current situation seems both precarious and desperate, but world leaders are proceeding "business as usual," with their exploded populations following them to catastrophic disaster as lemmings to the sea.

In times of trial, mankind looks to its leaders in politics and religion for guidance. In the current situation, no solace is found from either source. The leading geoscientists have been warning for decades of the destruction of the biosphere by large human numbers and industrial activity, but political leaders are deaf to their pronouncements. They will not sacrifice the economic growth and wealth accumulation of Earth's current generation in exchange for the well-being of any other species, or even of any later generations of human beings. They are not concerned that the number of people living in desperate poverty and misery has exploded to five billion, as long as massive wealth is being generated for the planet's wealthy few.

World religious leaders, too, are unconcerned with the environmental state of the planet, or of the suffering of billions. They are convinced either that everything that is happening is "God's will," or that their holy books prophecy mankind's apocalyptic demise and there is little or nothing that can or should be done about it. Although they profess to be concerned only with the destiny of the human soul, human physical life is also sacrosanct, to the point where no effective action can ever be taken to protect the environment. If faced with a choice between saving the life of a three-year-old girl or the world's last pair of Bengal tigers (or any of the thousands of other species committed to extinction each year to provide food for human beings), they will unhesitatingly opt to send the tigers (or other species) to extinction, rather than see the little girl – one of over six billion human beings currently inhabiting Earth – threatened. The *quality* of human life, the mass extinction of species, and the imminent extinction of mankind, is of little or no concern to the world's religious leaders. The scale of human or animal suffering, and the continuation of human or animal life on the planet, is not a concern of theirs. The

prophecy of the Book of Revelation that “those who destroy the Earth shall be destroyed” is of no concern to them.

In September, 2006, E. O. Wilson published a new book, *The Creation*. The book is written as an appeal – in the form of a number of letters – from a scientist (Wilson) to a religious leader (a Southern Baptist pastor), to work together to stop the ongoing planetary extinction. Despite all of the years that Wilson has put into this work and despite his many years as a world-class naturalist (Harvard professor, age 77), all he could think to ask the pastor to help save the environment was to ask him – to ask science and religion – to seek “common ground.” This work exemplifies how difficult it is to find a solution to the world’s environmental crisis. Leading religious writers such as Neale Donald Walsch (in his *Conversations with God* series) state their belief that the solution to the world’s current environmental crisis will be spiritual, not political or military, but no religious leader has set forth any plan for solving it.

Leading scientists such as Wilson, despite their good intentions and efforts, are powerless to prescribe a solution to the global environmental crisis, and leading religious leaders, although they pay lip service to many “worthy causes,” are not truly concerned with the situation and are not even trying to address it. More importantly, world political leaders, passionately committed to growth-based economics, do not *want* any solution, since *all* solutions will decrease human population, industrial activity, and material wealth. Future generations of mankind can exist only if the current generation consumes much less of the planet’s natural resources, including current solar energy, and current leaders, whether they be absolute dictators or elected leaders pandering to their electorates, are resolutely unwilling to do this. Because of this stubborn insistence on continuing to live in ways that destroy the biosphere, global industrial civilization is headed for an abrupt, violent end, not a graceful transition to a different paradigm.

In short, world political leaders are pressing for increased industrial activity, which is causing the destruction of the biosphere and mass species extinction, and world religious leaders, fixated on saving individual souls or lives, are quite indifferent to the extinction of any species, including mankind. Science has an answer to the problem – simply decrease human numbers down to the level that existed for millions of years, when human activity had a negligible effect on the planet’s biosphere. But the world’s political leaders do not wish to do this, and the world’s religious leaders do not care one way or the other.

So what is to be done? If it is viewed as a worthwhile goal to save the human species from imminent extinction, and to promote a high quality of human life for future generations, what is to be done?

The author of this proposal, Dr. Joseph George Caldwell, has wrestled with this issue for many years, and he has developed a number of insights in the matter. In the 1990s, he wrote a book, *Can America Survive?*, in which he analyzed the problem and proposed an approach to solution. In 1999, he set up an Internet website, http://www.foundationwebsite.org , to discuss the issue of rational planetary management. The objective of the website is to provide educational information to the public, so that they may understand the nature of the current planetary crisis, the likely course of events over the next few years, and possible approaches to a solution. The website attracts thousands of visitors each month, and is cited on the Internet as a resource for ideas in the domain of rational planetary management.

As an active management consultant, Dr. Caldwell has had relatively little time to commit to his research in this field. He has initiated a number of ventures, such as a "Handbook of Planetary Management," which remain uncompleted for lack of time. Because of the rapidly increasing pace of environmental destruction, time is running out. If the Government of Timor-Leste were to make available sufficient funds to establish a Planetary Management Institute and operate it for four years, he would be able to spend much more time on his researches, and make much more rapid progress than has been possible to date.

In his work, Dr. Caldwell has devoted much time to considering the metaphysical aspects of the current crisis. He accepts, as has been proposed by others, that a solution to the problem will involve spiritual considerations. He has considered at length the relationship between politics and religion, and between physical science and "spiritual science," or metaphysics. All of his recent work is posted at the Foundation website, http://www.foundationwebsite.org . The following are some of his works in this area:

Can America Survive?: http://www.foundationwebsite.org/canam4x.htm
The Story of Civilization:
http://www.foundationwebsite.org/TheStoryOfCivilization.htm
The Good Life: http://www.foundationwebsite.org/TheGoodLife.htm
Earth Is God's Dime Novel:
http://www.foundationwebsite.org/EarthIsGodsDimeNovel.htm
On Neale Donald Walsch:
http://www.foundationwebsite.org/OnNealeDonaldWalsch.htm
Rudolf Steiner:
http://www.foundationwebsite.org/HowICameToKnowRudolfSteiner.htm
Church of Nature: http://www.foundationwebsite.org/ChurchOfNature.htm

Since its beginning, mankind has spent countless hours contemplating the relationship of the physical world to the nonphysical, or spiritual, world. Today, the issue is often characterized as considering the relationship between science and religion. The terms "science" and "religion" need to be defined, in order for this statement to be very meaningful. "Science" generally refers to "physical science," which is concerned with achieving an understanding of the physical universe. It may also refer to "spiritual science," which is concerned with an understanding of the spiritual (nonphysical) universe. In the past several centuries, tremendous strides have been made in the accomplishments of physical science. In the domain of spiritual science, much work has also been done, reflected in the works of the great philosophers and metaphysicians, such as Dr. Rudolf Steiner, founder of Waldorf Education, Biodynamic Agriculture (organic farming), Anthroposophy, and Eurythmics.

Whether the term "science" is used to apply to physical science or spiritual science, it is concerned with facts – with factual statements derived from experiential observations (whether objective or subjective). Science (physical or spiritual) is amoral. It is not concerned with determining what should be done from the point of view of an arbitrary code of morality. It is concerned with making useful descriptions of reality (either physical or spiritual), which can be used to facilitate accomplishment of goals or objectives (for "good" or "ill"). It is concerned with determining what should best (or well) be done to accomplish a particular goal or objective. The term "science" may also be

used to refer to the "scientific establishment." Science is a tool, such as a hoe or a sword, that can be used by human beings to accomplish their objectives, whatever those objectives may be.

The term "religion" may refer to a specified belief system, such as Christianity or Buddhism, or it may also refer to an organized religious establishment, such as the Catholic Church. The relationship of religion to politics has varied throughout history. In ancient civilizations (e.g., Egypt, Greece, Rome, Persia, India), religion constituted an integral part of politics/government. In recent times, there has been somewhat of a separation of religion and politics (church and state), with religion often serving as a handmaiden to politics, to justify governments or wars and to motivate people to support them, and politics serving less often as a handmaiden of religion (e.g., the Catholic Church in the middle ages, or Islamic states in recent times).

The term "religion" may include more than just "mainstream" organized religions. It also includes mystic branches of major religions, such as the Hindu Vedanta, Zen Buddhism, Christian Gnosticism, Hebrew Qabalism, Chinese Taoism, and Islamic Sufism. There are many other paths to spiritual knowledge, including shamanism (Asian, African, American), Theosophy, Anthroposophy, astral projection, yoga, Holotropic Breathwork™, psychotropic plants (peyote/mescaline, ayahuasca), hypnosis, meditation, and prayer.

Today, as in the past several centuries, there has been much discussion and disagreement of what falls within the domain of science and what falls within the domain of religion. Physical science ("science") and spiritual science ("religion") represent alternative paradigms for explaining reality – both physical and nonphysical reality. Physical science is objective, and it deals with constructs that may be physically measured, reproduced, and tested. Spiritual science, on the other hand, is mainly subjective. It is mainly experiential, and its phenomena are rarely measurable or reproducible (with few exceptions, such as Remote Viewing). Through the years, much heated argument has taken place over the validity and utility of these paradigms. The debate is reflected, for example, in the 13 November 2006 issue of *Time* magazine: The cover story, "God vs. Science," is a spirited debate between atheist biologist Richard Dawkins and Christian geneticist Francis Collins.

Much has been written on the relationship of religion to the state. In *The Republic*, Plato describes a society governed by "Guardians" who are spiritually committed to the welfare of mankind. In the 1800s, the Marquis Alexandre St.-Yves d'Alveydre proposed a similar system, which he named synarchy (not to be confused with the modern term, "synarchism"). The author of this proposal does not presume to solve the eternal problem of determining the "best" form of human government. Rather, he proposes to address a much more restricted problem: What form of planetary management (government) will bring the planetary environmental crisis to an end, i.e., stop the mass species extinction, global pollution / warming, and biospheric destruction?; and how to bring it about.

The author of this proposal is a physical scientist – he holds a PhD in mathematical statistics, and has spent a career in physical science and systems engineering. At the same time, he is deeply spiritual, and it is his sincere belief that the solution to the planet's environmental crisis will be a spiritual one. Since, by definition, human government involves politics, the solution will involve politics. It will most assuredly

involve science, too, since science includes all that we know about the world. It is the author's view that the solution will include not only politics and science, but also a spiritual component. Since things spiritual fall within the domain of religion, the solution to the planetary crisis will, therefore, involve science, religion and politics.

The author has spent much of the past decade addressing the planetary crisis, and has written much on the subject of planetary management. He has identified conditions under which the planetary crisis may be ended, and has established the Foundation website to disseminate information on this. With the many demands on his time, however, progress has been slower than it could be. He is nearing the end of his professional career, and would like to be able to devote most of his productive time to this effort. With significant financial support, the author would be able to spend much more time on his work in this area. To enable this, a request is made to the Government of Timor-Leste to support his work for a four-year period, through support for the establishment and operation of a Planetary Management Institute in Timor-Leste.

Background Discussion

The Scientific Approach

There is no doubt that global industrial civilization as we know it cannot continue. It cannot continue because it is destroying the biosphere at a horrific rate. The only issue is when and how it ends. As mentioned above, it is the view of many scientists that the end of industrial civilization will be abrupt. It is likely also to be very violent. The major wars of the twentieth century were fought over oil, and these "resource wars" will intensify as global petroleum production starts to fall. Petrogeologists agree that, at current levels of consumption, the world's petroleum reserves will be exhausted by about 2050. The real difficulties will begin much sooner, however – when global oil production starts to decline, not when the last oil field goes dry. The beginning of the decline, referred to as "Hubbert's Peak" is viewed by many to be occurring now (it is difficult to say exactly when global oil production starts to decline because of fluctuations in supply and demand). The two recent wars in Iraq are the beginning of the global conflicts that will rage as global oil production declines.

Prior to the advent of technology and the massive supply of fossil fuel to drive it (i.e., prior to about 1650), global human population, based on primitive agriculture, numbered a few hundred million. As mankind began to use technology and tap the energy of fossil fuels, agricultural productivity soared, and human population was able to grow far beyond the previous levels enabled by solar-based agriculture. It is now well over six billion people, and increasing by about 60 million people per year. The planet's large human population exists mainly because of oil, and when the world's oil reserves disappear, the human population will fall back to its previous levels. The decline, however, will not be a "graceful" one. It will be a violent one, in which billions of people will die from famine, disease, or war.

Although the end of the Petroleum Age will see an abrupt decline in human numbers and global industrialization, it should be recognized that the end of the Petroleum Age is not the primary reason why large human numbers and global industrialization will end. They

will end because they are destroying the biosphere, on which our existence – and therefore theirs – depends. The fact that oil is running out affects solely the nature and timing of the end of global industrial civilization – not the certainty of its occurrence. Even if petroleum were to be replaced by another energy source, the mass species extinction and planetary pollution (e.g., global warming) – that is a byproduct of global industrialization – would continue.

No matter what results from attempts to access alternative energy sources in order to stem mass starvation for as long as possible before rampant species extinction and planetary pollution bring global industrial civilization to an end, the eventual outcome in terms of human numbers will vary little. The energy alternatives to petroleum are few, and they are not comparable to oil in cost or convenience. Mankind is currently using about 40 percent of the solar energy available to the planet's biological life, and it is not feasible to increase this percentage by much. It is possible to support only a small fraction of the planet's current population on solar energy. Solar energy, as much as it is touted, is not a feasible alternative to petroleum, for supporting more than just a few hundred million people (at a low level of living, and far fewer, say five million, at a high level of living). Although there is a large amount of coal available, it is not a very good replacement for petroleum, since it generates as much atmospheric pollution (greenhouse gasses) as petroleum, or more; is less concentrated an energy source; is in a less convenient form (solid vs. liquid); is less useful as a source of chemicals for uses other than combustion; and is more difficult to extract and transport. Scientists have been attempting to obtain energy from nuclear fusion for half a century, and that goal is as elusive as ever. There exists sufficient uranium to provide energy from nuclear fission for hundreds of thousands of years, but only if it is used in "fast breeder" reactors, which produce plutonium, which can be used to make atomic bombs. If used in "once-through" reactors (which do not produce plutonium), the amount of available uranium would last for only a few decades.

Because of the mass species extinction presently underway, global industrial civilization – its cause – will end at some point. Because global oil production is peaking now and there is no comparable energy source to replace it, the collapse of global industrial civilization will occur very soon – within the next few years – and it will be very violent. Global industrial civilization is ultimately doomed, and its demise is in fact imminent. Given this situation, the only issues that matter are two: whether mankind will survive, and what the state of the biosphere will be when global industrial civilization ends. There are several possibilities to contemplate. Global industrialization may pollute the planet and damage the biosphere to the extent where mankind is made extinct. Or, global industrialization may end before the biosphere is severely damaged, so that the survivors of the collapse of industrial civilization may inherit a biosphere almost as rich as that which our generation inherited. Or, mankind may survive, but in a biosphere sufficiently damaged that all that is left to future generations of mankind is a hellish life on an ecologically bleak planet.

All of the world's political leaders are committed to continuing or increasing industrial activity. The world's political structure is very chaotic – perhaps "anarchic" is a better word – with over 200 "sovereign" states, each champing at the bit to outproduce each other. They will strive desperately to replace declining petroleum production with alternative energy sources, such as coal, but since no available energy source is comparable to petroleum, it would appear likely that they will, as they always have in the past, resort to waging war over the ever-diminishing supply. The "silver lining" in this

cloud of imminent global war over oil (the first "skirmishes" have in fact started, in Iraq) is that, if industrial civilization collapses very soon, then the biosphere is saved.

Apart from a future filled with resource wars over the diminishing petroleum supply, there is another quite different possibility. Suppose that, instead of fighting over the planet's dwindling oil reserves, all of the world's countries unite in a New-World-Order-Synarchistic federation, which takes control of the world's massive coal reserves, and distributes the energy from equitably to all nation-states. Given mankind's Babel-fragmentation and war-loving history, this possibility would seem extremely unlikely, but it would represent a possible way of averting an immediate and violent collapse of global industrial civilization. Under this scenario, global industrial civilization would continue for a while longer (several more decades), with the end result that the mass species extinction would continue unabated, the biosphere would be destroyed beyond its ability to support mankind, and mankind would then become extinct.

From consideration of the current situation, in which global industrial civilization is causing the catastrophic destruction of the biosphere, it would appear that there are two alternative outcomes for mankind. First, if global industrial civilization continues (e.g., by replacing oil with coal as oil reserves exhaust), then the Sixth Extinction continues to term, and mankind is made extinct (or, at best, survives on a ruined, bleak planet). The second possibility is that global industrial civilization collapses very soon in global war. In this case, the large human numbers and industrial activity that are causing the mass extinction and atmospheric pollution (greenhouse-gas global warming) quickly drop to very low levels. At that time, the survivors of the industrial age have a choice. They can try to rebuild global industrial civilization, restart the Sixth Extinction, and finish the job of destroying the biosphere and making mankind extinct. Or, they may seek a different course, of attempting to set up a long-term-sustainable society that lives in balance and harmony with an ecologically rich biosphere.

The question that arises, of course, is how to accomplish this objective. The author of this proposal, Dr. J. G. Caldwell, has spent much of the past decade addressing this issue, and he has a number of insights relative to it. It is his opinion that there is little to be done by any external force (individual, organization, single country, federation of countries) to stop the processes of human super-population and global industrialization. As noted, all world leaders are committed to this process, to growth-based economics, to increasing gross domestic products, and to improved standards of living for very large populations. The world economy is a juggernaut that cannot be stopped until it runs out of fuel or runs off the track. It may seem a little fatalistic, but what is going to happen is going to happen. Too many people – both the world leaders and the people who support them – want the current system to continue. Almost none of them are concerned about the welfare (existence or quality of life) of future generations of mankind, and they will continue to strive to increase their own material quality of life even though it means extinction or destroyed quality of life for all future generations.

If global industrialization continues, then the Sixth Extinction continues to term and the biosphere and mankind are doomed. The only possibility for avoiding this future is for global industrial society to come to an immediate, abrupt halt. This could happen in a number of ways, such as an asteroid hitting the planet, a global epidemic, or global nuclear war. If it does happen, by whatever means, then there is a chance to save the biosphere and mankind. If it does happen, then what is to be done? That is the question that the author addressed in his book, *Can America Survive?*

Prior to *Can America Survive?*, many people had examined the problem of determining the optimal population for Earth. Invariably, they addressed the problem from the point of view of determining the *maximum* number of people the planet could support. This approach always results in very large human populations. Some investigators refined the question to be "how many people, at what standard of living," but even those investigators always tried to determine how *large* the human population could be.

This approach, of trying to determine the largest possible human population, is doomed to failure as a basis for planetary management. The difficulty that arises is the solution population is always so large that it (and its industrial activity) makes macroscopic changes to the biosphere. Mankind evolved together with, and as an integral and dependent part of, the biosphere. For mankind's existence in a high-quality biosphere to be assured, that biosphere must remain intact. It is not possible to make macroscopic changes to it, such as we are now doing (extinction of millions of species, global warming, destruction of natural forests) without significantly increasing the likelihood that mankind will become extinct, or will be relegated to a low-quality life in a ruined biosphere.

The mindset of attempting to maximize human numbers and productivity is extremely ingrained in the human psyche and character. No matter how much human beings have, they always want more. Furthermore, they all know that their ultimate demise is death, and so they tend to be risk-seekers – the worst that can happen if you fail in some attempt is that you will die, and you are going to die in a few years anyway, so why not "go for the gold." There is tremendous "discounting" of concern in time and space, and of other races, ethnicities, or species. People who live far away in space (e.g., Rwanda, Somalia, Sudan) or in time (e.g., all future generations of mankind) just don't matter very much, and certainly not if caring for them is going to make a noticeable decrease in one's quality of life. And other species don't matter a whit – the human species is causing the extinction of thirty thousand other species every year, and most people couldn't care less.

An article in the November 4, 2006, issue of *The Economist* illustrates this point. The article is entitled, "Stern warning: Economics of climate change." The article relates that Sir Nicholas Stern, head of Britain's government economic service, just released (on October 30) a report on the economics of climate change. His report suggests that climate change may lead to market failure on the greatest scale the world has seen, and should lead the planet to panic. Here follow two paragraphs from the article:

"Sir Nicholas has received plenty of support from economists (four Nobel prize-winners have endorsed the report) and a certain amount of criticism. One complaint is that he has selected the most pessimistic research and ignored more conservative work. Richard Tol, a professor at Hamburg University and a big noise in the field, describes the report as "alarmist and incompetent." Another criticism is that figures on the economic costs of climate change are bound to be nonsense because they are based on a cascade of uncertainties. Nobody knows just how much carbon dioxide the world is going to produce in future. Nobody knows just what it will do to the temperature. Nobody knows just how temperature rises will affect the world economy. These numbers are therefore too uncertain to act on.

“Sir Nicholas may well err on the gloomy side. And it is certainly impossible to predict precisely what effect climate change will have had on the world economy in a century's time. But neither point invalidates Sir Nicholas's central perception – that governments should act not on the basis of the likeliest outcome from climate change but on the risk of something really catastrophic (such as the melting of Greenland's ice sheet, which would raise sea levels by six to seven meters). Just as people spend a small slice of their incomes on buying insurance on the off-chance that their house might burn down, and nations use a slice of taxpayers' money to pay for standing armies just in case a rival power might try to invade them, so the world should invest a small proportion of its resources in trying to avert the risk of boiling the planet. The costs are not huge. The dangers are.”

This article illustrates very well the risk-seeking, maximizing, severely discounting nature of human decision-making. It seems obvious that, if global warming has *any* chance of destroying our civilization, then we would take strong steps to stop it. But no, incredibly, even as glaciers are in mass meltdown and polar bears are fast losing their frozen habitat, our industrial civilization goes on without skipping a beat, unwilling to make any changes that might significantly alter our standard of living, willfully accepting the chance that global industrialization, if it continues, may very well cause our extinction.

The approach used by those who seek to maximize human population on Earth is the same as the approach used by those who propose to do little or nothing about global warming. In both cases, the approach ignores (totally discounts) the possibility that a catastrophic disaster might occur. Even worse, it ignores the fact that one of the possible courses of action (attempting to maximize human population in the first example, and continuing industrial activity that causes global warming in the second) may actually *cause* the catastrophic result.

The scientific discipline that is concerned with the problem of determining good strategies, or decision rules, in decision problems involving uncertainty or chance is game theory (considered to include statistical decision theory). The use of decision rules that maximize utility (value, gain, profit, payoff), without considering the possibility of extinction, is appropriate for games that may be played over and over again, and in which catastrophe (extinction) is not one of the possible outcomes, such as the game of choosing an investment equity. For situations in which one of the possible outcomes is extinction, the appropriate approach is to select a course of action so as to minimize (or keep small) the likelihood of extinction. (Among alternatives that have the same or comparable low likelihood of extinction, it is appropriate to select the one that maximizes a desired payoff, or satisfies some other decision criterion or strategy, such as Nash’s equilibrium solution to a nonzero-sum game.)

A decision-theoretic approach that addresses the extinction possibility quite well is the use of the criterion of “minimal regret.” With this approach, that course of action is selected that minimizes the “regret” that may accrue to the player, when the game is played. In the present context, the “regret” is the possibility of extinction of mankind, or the loss of so many species of the biosphere as to seriously degrade the quality of life for future generations.

In *Can America Survive?* the author applied the principle of minimal regret to determine a long-term-survivable population for planet Earth. By a “long-term-survivable” population is meant one for which the probability of extinction is low, both for the human

species and the other species that inhabit the biosphere. This approach is very different from the approaches taken previously by others. While others attempted to determine the *maximum* human population that the planet could support (at a particular level of living), with little or no consideration of the likelihood of extinction (of the human species or of other species), the author's approach was very different. He sought to determine a *low* human population that had a low likelihood of extinction of human and other species. The population that he determined by this method is called a "minimal-regret" population. The minimal-regret population that he determined is not at all unique. It is not the only population that possesses the desired characteristics. It is what is known in mathematical terms as a "feasible" solution. It satisfies the desired constraints, but it may not necessarily be the *smallest* population that does so.

The minimal-regret population consists of two components: a single-nation, high-technology (high-energy-use) nation of five million people and a globally distributed primitive population of five million hunter-gatherers. The purpose of the high-tech nation is global population control, by means of a prohibition on the use of technology (economics, development, industrialization) throughout the world, apart from in the high-tech nation; the purpose of the primitive (hunter-gatherer) population is to reduce the risk of human extinction from a single catastrophic incident.

The size of the minimal-regret population was determined by taking into account the size of the human population that existed in harmony with the biosphere for millions of years – a known "feasible" population solution – and restricting the size of the two components of the minimal-regret population to use no more solar energy (total) than the known feasible population. For millions of years, human population varied between an estimated five million and a couple of hundred million. A person in a high-technology society uses about 50-100 times as much energy as a person in a primitive society. Hence, if the planet could support up to a few hundred million primitive (low-energy-use) people indefinitely, it would appear that it could support up to five million high-technology (high-energy-use) people indefinitely. Allowing for an additional five million globally distributed hunter-gatherers makes little difference. Additional discussion of the derivation of the minimal-regret population is presented in *Can America Survive?.*

The identified minimal-regret population is not the only minimal-regret population. It is one of many "feasible" long-term-sustainable populations. A primary purpose of describing this population is to make people aware of the concept of rational planetary management and long-term-sustainable populations, and to stimulate interest in further work in this area.

The author began writing *Can America Survive?* in 1994, after a visit to Zomba Plateau in Malawi, where he was shocked at seeing mankind's devastation of pristine wilderness firsthand. After two substantial rewrites, it was ready for publication in November of 1998. Because of the growing importance of the Internet as a source of information, the author decided to publish the work as an "e-book" on the Internet, available for free to all. This book was the first item listed on the original Foundation website, http://www.foundation.bw (located in Botswana, where the author was living at the time). Over the years, many articles on planetary management were added to the website (as well as articles of personal interest to the author, such as on music and commentary on current events). A second, "mirror" website, http://www.foundationwebsite.org located in the US, was established. (The name "Foundation" for the planetary management

website was inspired by Isaac Asimov's *Foundation* trilogy, the "Foundation" of which had a purpose similar to that of the Foundation website.)

The purpose of the Foundation websites, as noted earlier, is educational. The objective is to educate people around the world on the nature of the current planetary environmental crisis, and to distribute information about rational planetary management and long-term-sustainable populations. The author is an educator, not a soldier or a politician or a religious leader. He is not attempting to implement a minimal-regret population, or any other type of population, at this time. His view is that it is unlikely that any direct action can be effective in implementing rational planetary management while industrial civilization is at its peak, prior to the passing of Hubbert's Peak (Peak Oil). When global oil production starts to decline, the world political situation will fulminate, and global industrial civilization will disintegrate. It is at that time – a time of great crisis and opportunity – that it will be possible to take effective action to implement a rational planetary management system. The purpose of the Foundation websites is to promote the concept of rational planetary management, so that at that time, caring, environmentally-sensitive world leaders will be fully informed about the nature of the situation and what is required to address it and establish a long-term-sustainable human population on the planet.

Since 1999, hundreds of thousands of people have visited the Foundation websites. Countless downloads have been made from the site, and the Foundation material has been placed on web servers around the world. The Foundation material has stimulated considerable discussion and debate. While many people take exception to the particular minimal-regret population that *Can America Survive?* proposed, in all of the years since 1999, no one has ever e-mailed a note to the Foundation website, or presented an argument on an Internet "blog," citing any logical fault with using the minimal-regret concept as a basis for rational planetary management.

The Spiritual Approach

As mentioned, the author is a scientist – with a PhD degree in a "hard science" (mathematical statistics) and a career as a researcher, research manager, professor of statistics, and consultant. In developing the minimal-regret population concept, he drew on his background in statistics, game theory, and systems engineering. The technical information presented on the Foundation websites is based on hard, logical reasoning – on statistical decision theory, game theory, and systems engineering. As mentioned earlier, however, the author is deeply spiritual, and he has spent much time considering the world's environmental crisis and its solution from a spiritual, as well as from a scientific, viewpoint.

In 2000, while visiting Solitaire, Namibia, the author was inspired to consider a religious approach to the population / environment problem. In the days following that visit, he conceived and developed the concept of a Church of Nature. That material was placed on a website, http://www.churchofnature.com (also at http://www.foundationwebsite.org/ChurchOfNature.htm). In the time since then, the author has written many metaphysical articles, all posted at the Foundation website (and several of which were cited earlier).

The Next Steps

As mentioned, the author is an active management consultant. His income is from current earnings, and he has continuing family responsibilities. Despite his intense and passionate interest in rational planetary management, he does not have much time to devote to this avocation. He wrote *Can America Survive?* and developed almost all of the material at the Foundation website during his spare time. Many of his articles posted at the website are "seed" or "concept" pieces, which sketch out a line of thought (e.g., "Planetary Management Institute: Statement of Vision, Mission, Goals and Objectives" at http://www.foundationwebsite.org/PMIVision.htm). After publication of the book, *Can America Survive?,* which was written over a five-year period, the author has not had the time to write any more books – all of his subsequent works have been brief articles presenting concepts. The Church of Nature is an example – the inspiration and concept has been presented, but without a substantial investment of time, such efforts are unlikely to yield much fruit. Another example is "The Omega Project," which discusses St.-Yves d'Alveydre's concept of synarchy as a basis for rational planetary management (http://www.foundationwebsite.org/TheOmegaProject.htm).

As discussed, the author is not an activist, either political or military or religious. He is an educator and a writer. He has set forth a number of concepts in the field of rational planetary management, and he would like to have time to investigate them further. The funds of the requested grant would enable him to do this.

Humankind is in grave peril. If something is not done quickly to stop the Sixth Extinction, then mankind will become extinct, very likely within this century. Time is of the essence. It seems that, despite the gravity of the situation, very few people are alarmed. When the author discusses his views in social gatherings, the response that he gets is usually along the lines of "Oh, the situation can't be that bad – we don't need most of those species anyway – scientists will figure something out," or "Oh, global oil isn't going to exhaust until 2050? Well, I won't even be alive then!" When politicians debate, they almost never relate their concerns to the sixth mass species extinction, or the passage of "Peak Oil," or global warming, or the imminent extinction of mankind. Their electorate is not interested in these things, and they are not, either.

Nero is fiddling while Rome burns. Human society, having long ago entered the "overshoot" phase, has long passed the point where a graceful return to "living within limits" is possible, and catastrophic collapse of global industrial civilization is now inevitable. With respect to the fate of global industrial civilization, the die has already been cast, and the outcome – its imminent demise – is already known. Although global industrial civilization is doomed, however, the biosphere is not necessarily doomed, nor is mankind. The path to survival for either mankind or the biosphere, however, is straight and narrow. The only course of action that can save mankind from extinction, or from a future on a bleak planet with a ruined biosphere, is an immediate halt to the Sixth Extinction. It is not possible, however, to implement a system of rational planetary management while the world is in the death grip of global industrial civilization. The system is too strong, too powerful, and has total support of world leaders and the populations that support them. Humankind, it seems, will cling to the current system until it destroys them. The only opportunity for replacing the current biosphere-destroying system with a long-term-sustainable one will be when the current system collapses, and before another similar system of global industrialization can be

constructed to take its place. If the current system of global industrialization lasts another hundred years, half of all species of the biosphere are made extinct, and the effort to save the biosphere will be lost. The only chance for saving the biosphere is if the current system collapses very soon, and an alternative, long-term-sustainable, system is set up in place of it.

The mathematician and famous economist John Maynard Keynes observed (in his 1930 essay, "Economic Possibilities for our Grandchildren") the fatal limitations of economics as a long-term basis for human society:

> "Some day we may return to some of the most sure and certain principles of religion and traditional virtue – that avarice is a vice, that the extraction of usury is a misdemeanor, and the love of money is detestable. But beware! The time for all this is not yet. For at least another hundred years we must pretend to ourselves and to every one that fair is foul and foul is fair; for foul is useful and fair is not. Avarice and usury and precaution must be our gods for a little while longer."

The author is in agreement with Keynes that economics cannot serve as a long-term basis for society. The current planetary management system, which is destroying the biosphere, is based on economics. The long-term-sustainable planetary management system based on a minimal-regret population is not based on economics. Given this situation, the author is unlikely to receive support from any foundation, since all of them derive their wealth from the current economics-based system. The Government of Timor-Leste is unique in its ability to support research dealing with the relationship of science to religion, and may be in position to disregard this philosophical "inconsistency." The current system of planetary management, whose growth consumes natural habitat and whose waste pollutes and destroys the biosphere, has been sewing the seeds of its own destruction since its inception. Perhaps the requested grant may provide the spark that will enable a new, planet-friendly system to arise, like the Phoenix, from the ashes of the doomed present biosphere-destroying system.

The author's opinion (and that of some leading petrogeologists) is that Peak Oil is occurring right now. The recent wild fluctuations in the price of oil would be expected during the Peak. The oil resource wars have already begun (e.g., the first and second Iraq / Gulf wars). Global industrial civilization is very complex, and when it begins to falter, it will collapse with remarkable suddenness. The author is of the opinion that global industrial civilization may come – will likely come – to an end within the next five years. It is critically important for detailed, well-thought-out information be available to the survivors, so that they may implement a long-term-sustainable planetary management system when the current system collapses. With the requested grant, it will be possible for the author to spend most of his time researching and writing, for the next four years. Each year, it is his intention to complete a book on an aspect of rational planetary management. This four-year project, if it begins in mid 2007, will be completed by mid 2011.

It is noted that the author is a prolific writer, and that the goal of producing one book a year for four years, if supported by the requested grant, is reasonable. As examples of his productivity, it is noted that the author wrote his 427-page book on tax policy analysis / reform, *The Value-Added Tax* (posted at http://www.foundationwebsite.org/VAT.htm) in the course of a year, in his spare time, while working full-time in another field (as

director of R&D at the US Army Electronic Proving Ground's Electromagnetic Environmental Test Facility). The book, *Can America Survive?,* including the review of about 600 books, much data analysis, and two rewrites, was done in the author's spare time while employed full-time in other areas. While the author was capable of writing long books in his spare time in his younger days, he no longer has the energy to do so at this stage of his life, and is seeking an arrangement under which he might conduct his research and writing on planetary management as a full-time endeavor.

A one-page résumé of the author is included at the end of this proposal. A detailed professional résumé is presented at http://www.foundationwebsite.org/jgcdev20060829revchron.htm , and a brief biography is posted at http://www.foundationwebsite.org/WhoAmI.htm . The passionate interest of the author in rational planetary management, and the scope of his activity in writing on this subject from both the scientific and spiritual perspectives, is clear from a cursory review of his books and articles posted at the Foundation website, http://www.foundationwebsite.org . In his spare time, he has made substantial contributions to this field; with the support of the requested grant, he can accomplish much more, at a rapid pace.

Preliminary Budget

If the Government of Timor-Leste chooses to fund the proposed research work, it may do so at various levels. As mentioned, the author would prefer to do the work within the structure of an established university. If this is possible, the following is a proposed minimal level of annual funding:

> Labor (Dr. Caldwell, secretary, research assistant): USD250,000
> Overhead (for equipment, supplies, administrative support, employee fringe benefits (but not facility) and project expenses (workshops, advertising, publications, travel): USD250,000
> Total: USD500,000
>
> Total proposed budget for four-year period: USD2,000,000.

This level of funding is viewed as minimal. If the Government desired the participation of other researchers, such as in an interdisciplinary effort involving the participation of several university departments, then additional funds would be required.

Joseph George Caldwell, PhD

Professional Profile:

Career in management consulting, research, and teaching. Directed projects in strategic planning, policy analysis, program evaluation, economics, public finance, statistics, operations research / systems analysis, and information technology for US, state and foreign governments, and US and foreign organizations. Areas of expertise include health, education, vocational rehabilitation, welfare, public finance (tax policy analysis,

Medicaid and AFDC financing), agriculture, civil rights, economic development, energy, environment, population, and defense (US Army, Navy, Air Force, Department of Defense). Considerable overseas experience.

2001-	Management Consultant, Spartanburg, South Carolina, USA
1999-2001:	Director of Management Systems, Bank of Botswana (Botswana's central bank)
1991-1998:	Management Consultant (Wachovia Bank, Charlotte; US Agency for International Development, Egypt, Malawi, Ghana; Asian Development Bank, Bangladesh; Canada Trust Bank, Toronto, Canada)
1989-1991	President, Vista Research Corporation, Tucson, Arizona
1982-1991	Director of Research and Development and Principal Scientist, US Army Electronic Proving Ground's Electromagnetic Environmental Test Facility / Bell Technical Operations Corporation and Combustion Engineering; Adjunct Professor of Statistics, University of Arizona; Principal Engineer, Singer Systems and Software Engineering; Arizona
1964-1982	Consultant or employee to firms in South Carolina, North Carolina, Virginia, Maryland, District of Columbia, Haiti, Philippines

Education:

PhD, Statistics, University of North Carolina at Chapel Hill
BS, Mathematics, Carnegie Mellon University, Pittsburgh, PA
Graduate of Spartanburg High School, Spartanburg, SC

Personal:

Born March 23, 1942, in Kingston, Ontario, Canada
Married to Jacquelyn A. Caldwell
Three children
Religion: Christianity (Presbyterian)
Author of books on population and defense (*Can America Survive?*), tax reform (*The Value-Added Tax: A New Tax System for the United States*), and music (*How to Play the Guitar by Ear (for mathematicians and physicists*)). See Internet websites http://www.foundationwebsite.org and http://www.foundation.bw to view these and related articles.

13 September 2006