GLOBAL STRATEGY:

Promoting the concept of sustainability as a global goal

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INTRODUCTION

Can Humankind really develop a sustainable civilisation that does not deplete the resources needed for future generations - or are we headed for global catastrophe? The world's leading experts in all the relevant fields agree that we still have the resources, technology, and knowledge to develop a form of civilisation that could be economically healthy, socially equitable, and ecologically sustainable. (1) Significant progress has been made since the United Nations Earth Summit in 1992 to put the concept of sustainability on the local / global agenda. But this progress falls dramatically short of the level of action that is needed to make the effort a success.(2)

Consider the facts. One one hand, various international Treaties and Conventions have been agreed to conserve biodiversity, to protect against climate change, to reduce depletion of the ozone layer, to ban cross-border toxic waste dumping, to outlaw trade in endangered species, to emphasise the rights of future generations, and so on. Many countries now have national Agenda 21 (3) plans in place: more than 1,800 local authorities have developed local Agenda 21 action plans for sustainable development.(4) And some trans-national corporations have significantly reduced their levels of pollution and waste.(5)

On the other hand, the headlong rush to sign the World Trade Agreement overlooked many of its negative ecological and social consequences; (6) a billion peasants driven off the land are migrating to overcrowded cities in search of homes and jobs that don't exist; the long-awaited Peace Dividend from the end of the Cold War has failed to materialise; the world still spends around eight hundred billion dollars per annum on defence; the promises of additional North-South development aid and technology transfer agreed at Rio have not been kept; the population explosion continues unabated; most of the consumption and development now underway is more unsustainable than ever before; governments and the private sector are slow to integrate sustainability into their fiscal policies; ozone depletion, and desertification are increasing; tropical deforestation has slowed only a little; loss of biodiversity continues at a hectic pace; clean water is becoming scarce; inequity, unemployment and homelessness are increasing; the former USSR and much of the developing world has fallen into a state of crime and anarchy; fundamentalist violence is growing; racism is increasing; and the genie of genetically modified living organisms is being unleashed from its bottle, putting the stability of our planet's delicately balanced ecosystem at a whole new level of magnitude of risk.

So while small battles are being won, the larger war to achieve sustainability is now being lost. (7) In order to win, those of us in the environment and development community urgently need to adopt a strategic approach which recognises the systemic nature of the global crisis. This is a strategy which deals with the underlying cause rather than attacking the symptoms, because tinkering with symptoms does not heal a disease. It is a strategy which takes public opinion into account, because public opinion is the ultimate shaper of collective behaviour. It is a strategy which recognises that public opinion is determined by various conscious and unconscious psychological and cultural assumptions,

feelings and beliefs about the world situation and about human nature. And it is a strategy which addresses this psyco-cultural dimension, because in order to win the war, we need the public - including transnational corporations (8) - on our side.

To put it simply, the action which is so urgently needed to develop a sustainable civilisation will require a degree of societal and international co-operation on a level without precedent in history. Such co-operation cannot possibly occur without widespread **prior agreement on the goal**. And this agreement requires that the goal itself be perceived as desirable. This is unlikely to come about so long as public opinion perceives sustainability as a some kind of a sacrifice we can't afford.

In order to mobilise the level of action that is needed, this strategy must focus media attention on the magnitude of untapped economic and social benefits which a sustainable civilisation can bring for all of Humankind. For sustainability is no sacrifice: it is the **greatest historical opportunity of all time!**

Let us now briefly review some of the assumptions and beliefs which this strategy needs to address. We shall end this paper by outlining the Global Vision Project, a long-range world-wide educational media campaign now being launched to provide United Nations Agencies, NGOs, socially responsible corporations, universities, institutes, professional associations, religious groups, and leading thinkers around the world with a means to combine our insights, integrate our outreach, and communicate our vision of a positive future more effectively to the global public. The aim of this project to promote the idea of sustainability as a global goal. For as Confucius said, "when people share a common goal, their natural tendency is to co-operate in realising it."

SUSTAINABILITY IS FEASIBLE

Public opinion needs to become quite clear about the fact that the development of a sustainable civilisation is not only desirable, but also technically feasible and economically affordable. The most authoritative overview of the feasibility of attaining global sustainability in the 21st century is the book *Beyond The Limits: Confronting Global Collapse, Envisioning a Sustainable Future* by Dennis & Donnella Meadows and Jorgen Randers. (9). Broadly speaking, this book concurs with data from the United Nations, UNESCO, the World Bank, Worldwatch Institute, the World Resources Institute and World Game Institute, which are all agreed that we have the resources and the technological means to do it.

For example, World Game Institute, a global education and research organisation founded by Buckminster Fuller in 1972, has published two comprehensive electronic databases on the subject, called *Global Recall* (10) and Global Data Manager. (11) The statistics clearly show that we have the resources, the technology and the information to provide food, shelter, health care, clean water, and renewable energy for everyone, while simultaneously stabilising the population, stopping global warming, halting deforestation, eliminating illiteracy, and completely retiring the debt of the developing countries - and to do so within a perhaps as little as a decade, if everyone agreed to collaborate.

World Game estimates that these objectives can be achieved for a total investment of US $2.5 trillion, or US $250 billion a year over a ten-year period. (12) This is equivalent to only thirty percent of what the world currently spends on its annual defence budget, and is thus clearly affordable. Such a premium is also far less than the economic, social and environmental price of failing to develop a sustainable civilisation, and having to deal with the consequences.

THE DESIRE IS MISSING

Although a sustainable civilisation is technically and economically within reach, its political feasibility presents the greater challenge. Consider the outcome of the Earth Summit. Despite its considerable achievements, UNCED did not evoke the level of action that is needed. (13) Agenda 21 has many lukewarm items, it does not address the population

issue, and none of its resolutions are binding. The US torpedoed the Convention on Climate Change, stalled on the Convention on Biodiversity, and refused to address the link between consumption and environmental stress. ("Our lifestyle is not up for negotiation" said President Bush.) Five years later, while many nations have still not begun to change the relevant policies or launch the necessary programmes, the effects of globalisation embodied in the World Trade Agreement seem to have accelerated the process of ecological destruction and social inequity on a global scale. (14)

There is also the question of financial resources. Apart from a handful of countries such as Japan and Denmark, the North has not kept the financial commitments made at Rio for the development assistance which is needed to protect the ravaged ecosystems of the South and empower the majority of the world's population to achieve a decent standard of living. As Third World Network Director Martin Khor put it,

> "the UNCED Secretariat estimated that US$600 billion is required by the South alone, of which the external aid component is US$125 billion. But the actual commitments from the North are not forthcoming... Without the commitment of the industrialised countries, which hold all the important levers of world economic and political power, it would be difficult, if not impossible, to tackle the causes of environment or development problems." (15)

UNCED Secretary-General Maurice Strong lamented the situation thus:

> "Whilst the Conference was successful as a meeting, not a single thing has changed regarding our civilisational behaviour. We didn't succeed 20 years ago at the Stockholm Conference (the first international environment meeting), and we don't have another 20 years to waste.
>
> Here we have got agreement without sufficient commitment (from governments)... We can't sustain our current lifestyle. We have got to get through to people the absolute need to change our economic system... The evidence is very powerful that the present course of economic behaviour will lead to tragedy, the economy will not survive. We have got to get this message through to people and they must hold their governments accountable.
>
> Because governments took decisions that add up to a significant change of course at Rio, it is a shift in direction. But we can't be complacent. We leave Rio without satisfying commitment for that concern. We've got the basis for change, but we must keep pushing like hell." (16)

Five years later, the Rio + 5 special session of the United Nations General Assembly, attended by 60 heads of state and 2,000 NGOs in June 1997 was declared a failure. The USA, Canada and Japan categorically refused to agree to a binding reduction in greenhouse gas emissions. The European countries, which proposed a mandatory reduction of 15% by the year 2000, accused the Americans of failing their responsibility as a superpower. European Commission President Jacques Santer said "I am frankly disappointed. The future of our planet is at stake." German Chancellor Helmut Kohl, visibly furious, promised tough negotiations at the next conference on climate change in Japan. The French President Jacques Chirac said "the debate with the Americans was very difficult" and accused them of being "the biggest polluters on the planet."

Another example of disagreement is the Earth Summit promise of 0.7% of GNP for development aid, which is now less than 0.3%. In 1995, the US development aid contribution was only 0.1% of its GNP. Greenpleace representative Clif Curtis said the failure of the Rio process "represents the abdication of responsibility by the world's governments... The governments are saying: we admit our failure to deal with the environment, but we are incapable of reaching agreement on the solution and have therefore decided to postpone any decisions for another five years."

Despite the lip-service that is now being paid to "sustainable development," the North still

believes it has a different agenda from the South. It's an adversarial one. For years, the World Bank and the IMF have imposed "structural readjustment" programmes of economic shock therapy on already indebted countries who now face resource transfers to the North estimated at US $200 billion per annum. (17) Loans or grants are made on condition that the Southern countries accept austerity measures and cuts in education, health and welfare, which make it impossible for them to develop in an ecologically sustainable way. They have been obliged to open up their markets, privatise, and devalue their currencies, effectively giving their resources away as cheap exports to pay the interest on their foreign debt and satisfy the high-consumption lifestyle of the North. (An average person in the North now consumes 60 times as much as someone in Bangladesh!) The so-called "economic miracles" which have resulted have increased the wealth of the élites, but create widespread poverty for the majority of the people. Powerful special interest groups thus continue to behave, in effect, as if what is bad for the planet is good for them. But this is hardly surprising, since most people in the developed countries have no idea of what a sustainable civilisation might actually mean. (18)

Meanwhile, the international public is growing increasingly apprehensive about what the future may have in store. In their 1993 book *War and Anti-War,* for example, futurists Alvin and Heidi Toffler foresee "a new dark age of tribal hate, planetary desolation, and wars multiplied by wars." (19) The February 1994 issue of *The Atlantic Monthly* ran a cover story called *The Coming Anarchy,* in which the author Robert Kaplan foresees the first decades of the twenty first century as follows: "Nations break up under the tidal flow of refugees from environmental and social disaster. As borders crumble, another type of boundary is erected - a wall of disease. Wars are fought over scarce resources, especially water, and war itself becomes continuous with crime, as armed bands of stateless marauders clash with the private security forces of the élites." (20)

As US Vice-President Al Gore put it

> "in virtually every facet of our civilisation we are beginning to act as if our future is now so much in doubt that it makes more sense to focus exclusively on our current needs and short-term problems." (21)

The danger about this idea that history will end in chaos is that it is rapidly becoming a self-fulfilling prophecy. If catastrophe is inevitable, why bother?

FEAR OF THE FUTURE

Fear of the future is now the greatest single strategic threat to the development of a sustainable civilisation. We should have no illusions about the fact that fear of the future often leads to irrational behaviour, reactionary movements, and war. Yet because fear is psychological in nature, much of it is unconscious, and all the more easy to deny. The quite reasonable fears about the outcome of our current global crisis are exacerbated by deeper and less conscious fears associated with some of the fundamental assumptions, beliefs, and feelings of urban-industrial civilisation's entire world view. The *Changing Images of Man* report commissioned by the Markle Foundation explains:

> "Images of Man (sic) are held at varying degrees of awareness by persons and societies. For some... images are likely to be in the forefront of awareness, seen as reality, and used consciously in perceiving the world and in making decisions.
>
> For most, however, assumptions about the nature of human beings are made subconsciously. Only when these hidden assumptions and beliefs are recognised and brought into awareness is an 'Image of Man' constructed. Then the image can be examined carefully, and with perspective, to be retained, discarded, or changed." (22)

As the late anthropologist Gregory Bateson observed in his book *Steps to an Ecology of Mind:*

> "We are discovering today that several of the premises which are deeply ingrained in our way of life are simply untrue, and become pathogenic when implemented with modern technology." (23)

Among the premises of the urban/industrial world view are some assumptions about the future which are indeed pathogenic. These include the projection of the concept of "entropy" onto living systems, the Malthusian idea of fundamental resource scarcity, and the Judeo-Christian-Islamic myth of *Apocalypse.* All of these assumptions project a negative image of the future. It is worth reviewing them briefly, by tracing their origins back through science, religion and mythology.

FEAR OF CHAOS

In scientific terms, the urban/industrial world view is still largely based on the mechanistic model of the universe developed by Isaac Newton and René Descartes during the Seventeenth Century. According to the Second Law of Thermodynamics (perhaps discovered by Sadi Carnot in 1825 and formulated by Rudolph Clausius and Lord Kelvin in 1850-51) and the concept of "entropy" (first coined by Clausius in 1865 and restated by Ludwig Boltzmann later on), closed inanimate systems are subject to the tendency to devolve from states of order to disorder and disintegration. This has been popularly misinterpreted to imply that the universe itself is inexorably headed for chaos. The idea of an entropic universe has since been refuted by the new "self-organising systems" paradigm emerging from quantum physics, chaos theory, systems theory, ecology, biology, and cybernetics. (24) And Ilya Prigogine won a Nobel Prize in Chemistry for showing how inanimate molecules in a test tube can spontaneously organise themselves from randomness to order! Nevertheless, the assumption of an entropic universe continues to be widely disseminated in schools and universities, and still informs the way most Westerners and many other people now perceive the world. In this view, human efforts to restore order to the planet are doomed from the onset.

FEAR OF SCARCITY

Closely related to fear of chaos is fear of resource scarcity. This idea was first made explicit in 1798 by the British economist Thomas Malthus, who proclaimed that although global production increases arithmetically, the world's population increases exponentially. Based on this perception of a tilting resource/population ratio, Malthus concluded that "the power of population is indefinitely greater than the power of the earth to produce subsistence for man."

This notion sanctioned the policies of Social Darwinism which equated Darwin's "struggle for the survival of the fittest" with that of the most competitive, aggressive, and racist forms of colonial exploitation. It became the basis for Marx's *Das Kapital,* and let to the historical struggle between Capitalism and Communism about whether the "owners" or the "workers" deserved to control the limited supply. Since then, it seems that most of the world's governments, corporations, and intelligence agencies have taken the assumption of fundamental resource scarcity for granted.

But the assumption was wrong to begin with! As Buckminster Fuller pointed out (25), Malthus was not aware of the process of ephemeralisation, i.e.: the historical trend of increasing technological design efficiency which makes it possible to do more with less resources. For example, the first telecommunications links between Europe and America used up 700 thousand tons of copper cable stretching across the ocean floor. Twenty five years later, more information was being sent more quickly using a mere quarter ton of metal in a satellite! Today's relatively inexpensive laptop computers are thousands of times more powerful than the first mainframes, but use hundreds of times less resources to produce. According to an article by George Gilder in *Wired* magazine, "computer cost-effectiveness has risen 100 millionfold since the late 1950s - a 100,000-fold rise in

power times a thousandfold drop in cost. [In 1995] all the phone networks in the world combined carried an average of one terabit [of information] per second. Today, companies are sending 3 terabits per second down a single fibre [optic] thread the width of a human hair." (26) Similarly, various forms of appropriate technology, industrial ecology, architectural design, sustainable agriculture, and transportation systems now make it possible to recycle non-renewable resources on a massive scale, and even to meet most of humankind's basic needs for energy, water, food and fibre through the use of renewable resources. As Amory Lovins, Hunter Lovins and Ernst Ulrich von Weiszäcker point out through some fifty cases studies in their excellent book *Factor 4 : Doubling Wealth - Halving Resource Use,* (27) it is now possible to increase the efficiency of technology by two while also cutting in half the amount of raw materials used, thus quadrupling what we can do with the Earth's resouces. When ephemeralisation on this scale is factored in to the picture, the slope of the tilting resource / population ratio becomes somewhat less alarming.

Population growth does remain a problem: according the United Nations Population Fund, the number jumped from 1 billion in 1800, to 2 billion (1930), to 3 billion (1960), to 4 billion (1975), to 5.9 billion in 1997. It is expected to reach 6.3 billion in the year 2000, and over 11 billion by 2100. 95% of this future growth will take place in the poor countries, many of which cannot even feed their present populations under the current system of cash crop exportation and so-called "free market" economics.

But the real issue is over-consumption: the developed countries, with only 20% of the Earth's population, now consume 80% of its resources. To find out how sustainable a given level of consumption is, one must turn to the new science of **ecological footprint analysis.** The environmental economist William E. Rees, a member of the Global Vision Advisor Group and Professor of Community and Regional Planning at the University of British Columbia, defines this important concept as: "the corresponding area of productive land and aquatic ecosystems required to produce the resources used, and to assimilate the wastes produced, by a defined population at a specified material standard of living, wherever on Earth that land may be located." He then goes on to say:

> If just the present [i.e. January 1996 - ed.] world population of 5.8 billion people were to live at current North American ecological standards (say 4.5 ha/person), a reasonable first approximation of the total productive land requirement would be 26 billion hectares (assuming present technologies). However, there are only just over 13 billion hectares of land on Earth, of which only 8.8 billion are ecologically productive cropland, pasture, or forest (1.5 ha/person). In short, we would need an additional two planet Earths to accommodate the increased ecological load of people alive today. If the population were to stabilise at between 10 and 11 billion sometime in the next century, five additional Earths would be needed, all else being equal - and this just to maintain the present rate of ecological decline (Rees and Weinberger, 1994).(28)

But if ephemeralisation, conservation, and intelligent planning are brought to play, population growth does not have to produce a catastrophe. The systems dynamic computer model World3, developed by Donella Meadows, Dennis Meadows and Jorgen Randers at MIT, make this quite clear. They summarise the facts in their book *Beyond the Limits:*

> "1. Human use of many essential resources and generation of many pollutants have already surpassed rates that are physically sustainable. Without significant reductions in material and energy flows, there will be in the coming decades an uncontrolled decline in per capita food output, energy use and industrial production.
>
> 2. This decline is not inevitable. To avoid it two changes are necessary. The first is a comprehensive revision of policies and practices that perpetuate growth in material consumption and in population. A second is a rapid, drastic increase in the efficiency with which materials are used.
>
> 3. A sustainable society is still technically and economically possible. It could be

> much more desirable than a society that tries to solve its problems by constant expansion. The transition to a sustainable society requires a careful balance between long-term and short term goals, and an emphasis on sufficiency, equity, and quality of life rather than on quantity of output. It requires more than productivity and more than technology; it also requires maturity, compassion, and wisdom." (29)

Unfortunately, fear of resource scarcity became a central tenet of the uncompassionate political and economic policies that have shaped the world since Malthus' time. The originally top-secret but now declassified U.S. State Department *Policy Planning Study PPS 23,* written by George Kennan in 1948, makes the brutal strategy of one of the superpowers explicit:

> "We have about 50% of the world's wealth, but only 6.3% of its population... In this situation, we cannot fail to be the object of envy and resentment. Our real task in the coming period is to devise a pattern of relationships which will permit us to maintain this position of disparity... To do so, we will have to dispense with all sentimentality and day-dreaming; and our attention will have to be concentrated on our immediate national objectives... We should cease to talk about vague and...unreal objectives such as human rights, the raising of the living standards, and democratisation. The day is not far off when we are going to have to deal in straight power concepts. The less we are then hampered by idealistic slogans, the better." (30)

It would be nice to think that things have changed. But as Noam Chomsky documents in his book *Year 501 - the Conquest Continues,* this kind of adversarial thinking has characterised the behaviour of many wealthy nations and trans-national corporations from colonial times right up to the present day. (31)

Fear of resource scarcity drove the arms race that made the USA the greatest debtor nation on Earth, and left the former Soviet Union in shambles. (Sixty percent of the USSR economy was associated with defence). It caused multinational corporations, the World Bank and the IMF to systematically impede almost every effort on the part of the developing countries' struggle for democracy and local self-reliance during the post-colonial period since WW II. (32) It led Western intelligence agencies to forecast paranoid scenarios of twenty-first century terminal resource wars between the wealthy industrialised countries and the impoverished nations of the South, and to finance their resulting covert wars by government-sanctioned international trafficking in heroin and cocaine. It led the superpowers to topple democratic governments and set up repressive dictatorships in every corner of the world. It repressed many Arab peoples and produced a fundamentalist backlash, notably in Algeria and Iran. It installed the Shah and resulted in the Ayatollah. It forced developing countries to deplete their natural resources and starve their children to service the interest on their foreign debt. It keeps Haiti in a state of misery. It created an illiterate, armed, and increasingly hostile minority underclass in the USA. It feeds European and American fears about waves of immigrants from the Third World. It results in open racism and neo-fascism in Italy, France, Germany, Bosnia, Serbia, and Russia, and is driving the latter towards social disintegration. (33) It is creating is what The Economist calls the "fortress mentality" of industrialised countries who perceive themselves besieged by hungry millions massing at the North/South border.

Fear of resource scarcity fuels racist fears and "ethnic cleansing" campaigns, fires up fundamentalist reactions, motivates terrorist attacks, and conjures up images of barbarians storming at the city gates. It is not the kind of stuff that fosters friendly North/South co-operation, debt forgiveness, technology sharing, or capacity-building.

Anil Agarwal, Director of the Centre for Science and Environment in New Delhi, India summed it up thus:

> "The world's governments are not prepared to give up anything. The ethic of caring and sharing is still far from the arena of international relations." (34)

FEAR OF APOCALYPSE

The other underlying assumption of the Western world view which causes fear of the future is the notion of Apocalypse (35). Despite the fact that Western consciousness has become increasingly secular in recent centuries, its psycho-symbolic religious roots remain firmly Judeo-Christian, as do those of the Muslim peoples. Nominal Christians, Muslims and Jews now constitute about 40% of the world population. The story-line of their cosmologies begins with Genesis and ends with the Apocalypse. The latter is based on an account by St. John the Divine in which he describes a vision which he obtained on the Greek island of Patmos. This is usually interpreted as the historical prophecy of a Day of Doom, when Humankind will be punished for its wayward behaviour through divine retribution involving the death of all living creatures and the physical destruction of the Earth itself. But as the late psychiatrist R.D. Laing pointed out (36), nowhere in the Biblical text does St. John assert that he is describing an external event. In fact, the etymology of the term Apocalypse comes from the ancient Greek apo (off) + kalyptein (to cover), meaning *the uncovering of something that is hidden.*

It turns out that St. John's vision of world destruction and regeneration is far from unique. It is typical feature of the hallucinatory phase of the so-called acute schizophrenic break syndrome, which currently affects 60 million people (i.e.: one percent of the Earth's population), according to the World Health Organisation. Images of world destruction-and-renewal, and vivid subjective experiences of death and rebirth and the end of time are also very common in non-ordinary states of consciousness associated with ecstatic religious rituals, shamanic practice, psychedelic sessions, and near-death experiences, as widely reported by indigenous people, anthropologists, and psychiatrists. (37)

The new field of transpersonal psychology now recognises that such images occur spontaneously in times of personal or cultural stress, and carry a therapeutic function. It turns out that the image of Apocalypse is a universal symbol of transformation that refers to the inner psychological journey of personal growth as well as to the outer process of social change. Built-in to the human unconscious, this metaphor is intimately related to the individual's experience of his or her own biological birth, and is symbolic of the process of ego death and rebirth. When understood as such, it helps guide a troubled individual or society on the way toward greater psychological integration. (38) But practising Christians, Muslims and Jews (especially the growing numbers of fundamentalists who take their religious metaphors literally) are prone to project their premonition of Apocalypse as an external historical event scheduled, according to the evangelical television networks and fundamentalist radio broadcasts, for the not-too-distant future. Cambridge mathematics professor Stephen Hawking, author of the bestselling book *A Brief History of Time* - said: "A few years ago, when I was giving a lecture, I was asked not to mention the end of the universe in case it depressed the stock market!" The Apocalyptic image of the end of the world thus haunts the collective unconscious, and defines the temporal limit of the modern world view.

TIME FOR A NEW MYTHOLOGY

Modern civilisation is essentially an urban one, and the whole idea of progress = growth is the quintessential urban myth. In 1900, 17% of Humankind lived in cities. In 1997 it's approaching 50%, and this urban population is expected to double in number by the year 2015! There are now 213 cities with populations over one million, 81 over five million, and 23 over ten million. (39) By the year 2000, people who live in cities will constitute the global majority. Cities like Los Angeles, Cairo, and Beijing are already running out of water. In Mexico City, Kuala Lumpur, Bangkok, Paris and many other cities, the air is frequently so polluted that is medically unsafe to breathe. The problem is not just that these cities - as presently structured - are ecologically unsustainable; they are also destroying the biosphere on which our health and survival depend. As the Prince of Wales put it,

> "these cities cannot possibly continue to wreak ecological havoc as they do now, without producing disaster on a global scale."

Biology teaches us that any species which destroys its own environment normally becomes extinct. But since the origin of the first towns and cities seven thousand years ago, urban civilisation has never had to be ecologically sustainable (40). As long as these urban centres could expand the territory from which they took their resources, civilisation could survive and prosper (albeit at the expense of the local ecosystem). But it was an addictive relationship. This expansion of our ecological life-support system gradually spread beyond the flat-earth horizons of local city-states, kingdoms, empires, and colonies, to superpowers and multinational corporations whose global frontier has now returned upon itself to envelop the entire planet. What's new is that we are the first generation in all of history to be confronted with the fact that our ecologically imbalanced urban way of life is no longer sustainable, as its consequences are now becoming visible on a global scale. But urban civilisation has little idea what sustainability might really mean, for sustainability has never been part of its mythology, its history, or its experience.

Common sense suggests that some sort of systemic catastrophe could indeed befall the Earth within our lifetime or that of our children. But if it does, it will come by our own doing, not because it is inevitable. Fear of the future is the outcome of our history. It is the shadow of the myth of progress, projected onto our time-horizon as we cross the threshold into the global age. As eco-philosopher Thomas Berry put it: *"It's all a question of story. We're in trouble right now because we do not have a good story."* (41)

PARADIGM-SHIFT

In *The Emergent Paradigm,* a seminal long-range planning report published in 1979 by SRI International (formerly Stanford Research Institute) for CEOs of trans-national corporations, authors James Ogilvy and Peter Schwartz wrote:

> "A fundamental shift in basic beliefs and assumptions about the nature of things is going on.. We find strong evidence that a number of the underpinnings of our basic beliefs are under challenge. That challenge is coming from a multifaceted revolution of the sort that we have experienced only a few times in the course of our civilisation's history... (It involves) as great a change as the Copernican Revolution or the emergence of the Enlightenment... This intellectual revolution will have its profound and multi-fold impacts on society far more rapidly than many people might expect...
>
> The greatest hazard in such a transition is that the anxiety level can raise to where the society responds with irrational and self-destructive behaviour. The best safeguards are widespread understanding of the need for transformation, and reassurance that there is someplace good to get to on the other side... We need a new vision." (42)

To deal with our impending global crisis, we need a positive vision of the future. The Earth Summit did succeed in putting the concept of "sustainable development" on the global agenda. Many organisations are addressing the challenge, such as the United Nations Commission on Sustainable Development (CSD) in New York, the World Bank's Global Environment Facility (GEF) in Washington, the International Institute for Environment and Development (IIED) in London, the Earth Council in Geneva, the International Institute for Sustainable Development (IISD) in Canada, the President's Commission on Sustainable Development in the USA, and so on. Thousands of NGOs and millions of citizens around the world are also committed to the process. (43) But so far, most of these efforts to deal with the global crisis keep putting the cart before the horse. Stuck in the old paradigm which emphases domination over partnership, they still think of the global crisis as a danger rather than as an opportunity, and focus in like mongooses on trying to control the symptoms - if only they had enough power to do so.

But as Gregory Bateson observed:

> "The myth of power is, of course, a very powerful myth; and probably most people in this world more or less believe in it... But it is still epistemological lunacy and

> leads inevitably to all sorts of disaster... If we continue to operate in terms of a Cartesian dualism of mind versus matter, we shall probably also come to see the world in terms of God versus man; elite versus people; chosen race versus others; nation versus nation; and man versus environment. It is doubtful whether a species having both an advanced technology and this strange way of looking at the world can endure... The whole of our thinking about what we are and what other people are has got to be restructured. This is not funny, and I do not know how long we have to do it in. If we continue to operate on the premises that were fashionable during the Pre-Cybernetic era, and which were especially underlined during the Industrial Revolution, which seemed to validate the Darwinian unit of survival, we may have twenty or thirty years before the logical reductio ad absurdum of our old position destroys us. Nobody knows how long we have, under the present system, before some disaster strikes us, more serious than the destruction of any group of nations. The most important task is, perhaps, to learn to think in the new way." (44)

As Vaclav Havel put it, "No evil has ever been eliminated by suppressing its symptoms. We need to address the cause itself." But Humankind is now spending vast amounts of money, time and effort attacking the symptoms of the global crisis, without any integrated strategy to address the underlying cause: a fragmented world view which prevents us from seeing the pattern that connects global issues to each other and to our own way of seeing them, and which denies our personal responsibility for the fate of the Earth. As the old saying goes, you can bring a horse to water, but you can't make him drink.

We may want to prevent climate change, but so long as we continue to burn fossil fuel, global warming will not stop. We may want to protect indigenous peoples, but so long as we destroy their ecosystems, we commit genocide upon them. We may want to promote democracy, but so long as we use coercion to do so, we become more fascist ourselves. We may want to save the whales, but so long as we continue to pollute the ocean, our efforts may end up like so many oil spills washed up on the beaches of our broken dreams. Attempting to modify the behaviour of those who we may perceive to be responsible for global problems is a woefully inadequate response to the challenge at hand! As Gregory Bateson pointed out,

> "The question of how to transmit our ecological reasoning to those whom we wish to influence in what seems to us to be an ecologically 'good' direction is itself an ecological problem." (45)

Carl Jung made the same point in psychological terms:

> "To know where the other person makes a mistake is of little value. It only becomes interesting when you know where *you* make the mistake, for then you can do something about it. What we can improve in others is of doubtful utility as a rule, if, indeed, it has any effect at all."

As Gene Youngblood, author of the book *Expanded Cinema, put it:*

> "I write these words against a background of seemingly ungovernable crisis. It's the Age of the Apocalypse, for no-one any longer can say whether humanity will survive. The world's leading scientists in the relevant fields seem agreed about this: we've created for ourselves a set of...crises, which may prove impossible to contain... Repeatedly, we attack dysfunctions in our social organisation while the symptoms continue to worsen... I submit that what causes the helpless felling is the inadequacy of old forms of thought to cope with an historically unprecedented situation. We can't even think of solutions without correctly recognising the problem, and it is now commonplace to pose our problems incorrectly. We tend to focus on what's seen, rather than on our way of seeing... Instead of focusing on how we produce and consume, we must focus on how we perceive and on how we communicate. (46)

STRATEGIC IMPLICATIONS

A sustainable form of civilisation is a great idea whose historical time has come. (47) But the world is not developing in a sustainable way, and if the United Nations, NGOs, universities, and other organisations committed to this ideal want to achieve their intended effectiveness, they need to co-operate in a pro-active educational programme to foster the public support - and action - that is needed. From a whole systems point of view, the most effective strategy is to promote the idea of a sustainable civilisation as a global goal. The international public has little understanding of the payoff which a sustainable civilisation has to offer, for the economic and social benefits almost defy description. To sell the idea and also empower people to find out what they can do to make a difference, requires the development of a new world view that recognises the integrity of Humankind and the Biosphere as a whole system. As Al Gore said,

> "this is perhaps the most difficult and the most important challenge we face. If a new way of thinking about the natural world emerges, all of the other necessary actions will become instantly more feasible - just as the emergence of a new way of thinking about communism in Eastern Europe made feasible all of the steps toward democracy that had been 'unthinkable' only a few months before." (48)

Mikhail Gorbachev expressed the same idea:

> "No existing ideology or philosophy can claim success in addressing the global crisis... We need to make a transition to a new civilisation. The whole paradigm of civilisation will have to change... The fatalistic approach is not acceptable. We have to begin to think about how to guide the process of global change." (49)

This strategy will be far more cost-effective than attacking the symptoms as they come up in a piecemeal way, or trying to remedy the situation after it gets worse. As British futurist James Robertson said:

> "The same alternative will be a future that comes about by its own momentum, once enough of us decide that it is possible and decide to make it happen... Many of us see this breakthrough as the central project, the historic task for the two or three generations living at the present time." (50)

Promoting sustainability as a global goal will indeed help to make the transition come about in a self-organising way, as more and more people realise that sustainability is actually in everybody's self-interest. As Worldwatch Institute Director Lester Brown put it, "at first the changes are slow, but they are cumulative and they are accelerating. Mutually reinforcing trends may move us towards a sustainable society much more quickly than now seems likely." He goes on to say:

> "Taking part in the creation of a sustainable society will be an extraordinarily satisfying experience, bringing a sense of adventure that our ancestors did not have. In effect, we have embarked on a shared adventure, the building of a society that has the potential to be an enduring one. This awareness could begin to permeate almost everything we do, imbuing it with a sense of excitement - one that derives, in part, from full knowledge of the risks and consequences of failure, as well as from the scale of the undertaking, which has no precedent... The development of a sustainable civilisation will require the most massive adult education program ever launched. This, in turn, will shift part of the responsibility for education from the formal educational system to the communications media." (51)

As Systems Theorist Erich Jantsch emphasised: "learning is not the importation of strange knowledge into a system, but the mobilisation of processes which are inherent to the system itself." In their book Seven Tomorrows, Global Business Network Chairman Peter Schwartz, Economist Paul Hawken, and Senior SRI International researcher James Ogilvy observed:

> "Humanity stands at an unique point: simultaneously our problems are so acute and our communications network so widespread that, for the first time in world history, genuinely collective and democratic decisions are both demanded and possible. In order to choose intelligently, we need a sufficiently widespread consciousness of our condition and of our capacity to alter it through the decisions of enough people. We need a collective intelligence of a kind that may not have characterised the human species in the past; but we see no reason to believe that, given the highly developed nervous system of an advanced communications network, a whole population cannot reach a stage of mature self-consciousness much as an individual does." (52)

Since the target audience is global, this presents an educational challenge of the first magnitude. It requires a whole-systems approach that is deeply informed by political savvy, multi-disciplinary insight, democratic values, and an anthropological sensitivity to the religious, ideological and spiritual differences which characterise the cultural diversity of Humankind. In effect, we need to articulate a new world view, a mythology for the global age. And we need to express it in symbolic forms that can transcend ideological, religious, and cultural boundaries and be widely shared through the mass media.

As comparative mythologist Joseph Campbell said:

> "There is no conflict between mysticism and science, but there is a conflict between the science of 2000 BC. and the science of 2000 AD.. The three level universe of the Bible is of no use to us. We have to have poets, we have to have seers who will render to us the experience of the transcendent through the world in which we are living." (53)

Cultural historian William Irwin Thompson explains:

> "The transformations of culture do not take place in history, they take place in myth. It is because the individual cannot perceive in the limits of his own lifetime such transformations as the Neolithic or Industrial Revolutions that we have need of myth. A model, a hypothesis, or a myth is a way of rendering the invisible. Because the unconscious is outside of time, it can perceive transformations beyond the limits of the ego. These unconscious perceptions are expressed in art or mythologies. We ourselves are living in an age of cultural transformation, but if you went to the experts to ask for a description, they would tell you nothing. You have to go to those who are at home in the unconscious and in the subconscious, the artists and prophets: through myth and symbol in art, science fiction or religion, they will describe the present by speaking about the future." (54)

As James Joyce said in *A Portrait of the Artist,* the task at hand is to "forge in the smithy of my soul the uncreated conscience of my race."

This requires an artistic approach to the use of information. Marshall McLuhan put it in a nutshell:

> "The new age of education is programmed for discovery rather than instruction. Art as radar feedback, early warning system, the antennae of the race."

In response to this challenge, Global Vision Corporation - a Non Government Organisation accredited to the United Nations Commission on Sustainable Development (CSD) invites you to join forces with our network of international partners - UN agencies, NGOs, socially responsible corporations, universities, institutes, professional associations, religious groups, and leading thinkers around the world - who have agreed to collaborate in the design and implementation of the Global Vision Project, a long-range international media campaign to promote the idea of sustainability as a global goal. For as Confucius said, "when people share a common goal, their natural tendency is to co-operate in realising it."

ENDNOTES

1. For an authoritative overview of the feasibility of attaining a sustainable civilisation in the 21st century, see Meadows, Donella H. & Dennis L. and Randers, Jorgen: Beyond The Limits: Confronting Global Collapse, Envisioning a Sustainable Future. (Post Mills, Vermont, USA: Chelsea Green Publishing Company, 1993.)

2. See Khor, Martin. Earth Summit Ends With Disappointment and Hope, in Rio Reviews, Centre for Our Common Future, Geneva, 1992.

3. Agenda 21 is the historical blueprint for the sustainable development of our planet which was agreed by 112 Governments at the United Nations Conference on Environment and Development (UNCED) - the Earth Summit - in Rio de Janeiro in 1992. This 250 page document provides a global consensus on 2500 recommended actions for governments, local authorities, NGOs, the private sector and the media to undertake in order to protect the Earth's resources for future generations. It may be obtained from the United Nations and is also published on the World Wide Web at www.un.org/dpcsd/dsd/csd.htm.

   An excellent children's version of Agenda 21 has also been published (in many languages) by Rescue Mission Planet Earth, The White House, Buntingford, SG9 9AH, UK (tel: + 44 (0)176 327 4459, fax: + 44 (0)176 327 4460; they have a number of web sites including: www.freenet.hut.fi/partneritorni/YM/kestava_kehitys/ and www.shs.net/rescue.National) To facilitate the implementation of Agenda 21 at the local level, Rescue Mission also publishes a Sustainability Indicator pack for secondary level teachers and students to measure the indicators of progress towards sustainability within their own village, town or city.

4. Regarding Agenda 21 at the local level, we recommend The Local Agenda 21 Planning Guide: An Introduction to Sustainable Development Planning, International Council for Local Environmental Initiatives (ICLEI) and the International Development Research Centre (IDRC), Toronto, Canada, 1996, ISBN: 0-88936-801-5. This excellent book is available from ICLEI at www.iclei.org, tel: + 1 416 392 1462. Although 1800 cities, towns and villages have adopted Local Agenda 21 initiatives as of 1997, this is far less than was hoped for.

5. Of the 200 largest economies in 1997, over half were corporations and less than half were nation states. The greening of corporations is now a fashionable trend, although one must beware of disinformation. Notable efforts include the US President's Council on Sustainable Development, the World Business Council on Sustainable Development, the Forum for the Future in the UK, the Prince of Wales's Business and the Environment Programme at the University of Cambridge Programme for Industry, and the Global Environment Programme at the Leonard N. Stern School of Business, New York University.

6. See Julien, Claude. Le Libéralisme Contre La Societé, in Le Monde Diplomatique, No. 477, December 1993. In another article, Régimes globalitaires (Globalitarian Regimes) in Le Monde Diplomatique, No. 514, January 1997, Julien states the following:

   > "By favouring, over the past two decades, monetarism, deregulation, free trade, the free flow of capital and massive privatisation, the political leaders have allowed the transfer of major decisions (regarding investment, employment, health, education, culture and environmental protection) from the public sector to the private sector. Because of this, over half of the two hundred largest economies in the world today are no longer countries but corporations."

   The anti-North American Free Trade Agreement (NAFTA) graffiti by Mayan indigenous people during the New Year's Day 1994 Zapatista uprising in Mexico protested the fact that their country is now legally obliged to import cheap grain from the USA. The low cost of the imported grain results from the unsustainable agribusiness methods

used to grow it, which subsidise the production costs by depleting the topsoil and water needed for future growing seasons, whilst externalising the social and environmental costs of dealing with water pollution from insecticides, fungicides and fertiliser runoff, plus the cost of salination of lands from excessive irrigation, onto both US and Mexican taxpayers. This undercuts the more realistic market price of grain grown by traditional Mayan techniques, and destroys their economy overnight. That such trade is called "free" illustrates the wisdom of the Native American proverb "White man speaks with forked tongue."

7. For an excellent critique of neoliberal ideology and globalisation, see David C. Korten, When Corporations Rule the World, Berrett-Koehler / Kumarian Press, 1996, ISBN: 1887208011. Squarely addressing the controverial issue of modern corporate power, this excellent book explains how economic globalization has concentrated the power to govern in global corporations and financial markets, detaching them from the human interest. Korten presents a policy for restoring democracy and rooting power in people and communities. Nobel Peace Laureate Archbishop Desmond M. Tutu described Korten's book thus: "This is a 'must-read' book - a searing indictment of an unjust international economic order, not by a wild-eyed idealistic left-winger, but by a sober scion of the establishment with impeccable credentials. It left me devastated but also very hopeful. Something can be done to create a more just economic order." John Cavanagh, Fellow of The Institute for Policy Studies, and coauthor of Global Dreams said: "If you can read only one book on how to understand and address the enormous challenges of our time, When Corporations Rule the World is it!"

8. See note 5 above.

9. Meadows, Donella H. & Dennis L. and Randers, Jorgen: Beyond The Limits: Confronting Global Collapse, Envisioning a Sustainable Future. (Post Mills, Vermont, USA: Chelsea Green Publishing Company, 1993.)

10. Global Recall: An Interactive Atlas of the World and its Resources. A HyperCard-based software package. Available from World Game Institute, 3215 Race Street, Philadelphia, PA 19104, USA. Tel + 1 215 387 0220.

11. Global Data Manager: Turning Data into Knowledge. A HyperCard-based software package from World Game Institute (see note 4 above for address).

12. See Sustainability : A Good Investment, pilot video clip for the Sustainability film / TV series, by Global Vision Corporation, London, available on the web at www.globalvision.org/sustainability/clip1.html. See also What The World Wants - And How to Pay for It, a flyer from World Game Institute, 3215 Race Street, Philadelphia, PA 19104, USA. Tel + 1 215 387 0220.

13. See note 2 above.

14. See note 7 above.

15. See Khor, Martin. Earth Summit Ends With Disappointment and Hope, in Rio Reviews, Centre for Our Common Future, Geneva, 1992.

16. Strong, Maurice. Speech at last press conference after UNCED's closing in Rio.

17. See Fifty Years is Enough! in The Ecologist magazine, Vol.21, No.1, Jan./Feb. Ô94.

18. This is, of course, nothing new. For a revealing historical account of European attitudes toward sustainable indigenous cultures, see Sale, Kirkpatrick: The Conquest of Paradise: Christopher Columbus and the Columbian Legacy. (New York: Alfred Knopf, 1990.)

19. Toffler, Alvin and Heidi. War and Anti-War: Survival at the Dawn of the 21st. Century.

(New York: Little, Brown and Company, 1993.)

20. Kaplan, Robert D. The Coming Anarchy: how scarcity, crime, overpopulation, tribalism, and disease are rapidly destroying the social fabric of our planet. (Boston: The Atlantic Monthly magazine, February 1994.)

21. Gore, Al. Earth in the Balance: Ecology and the Human Spirit. (New York: Plume, Penguin, 1993).

22. For an outstanding investigation of the effect of unconscious assumptions and beliefs on everyday personal and societal behaviour, see Changing Images of Man, Policy Research Report no. 4, Center for the Study of Social Policy, Stanford Research Institute, Menlo Park, 1974. This seminal interdisciplinary paper, commissioned by the Charles F. Kettering Foundation, was co-authored by Joseph Campbell, Duane Elgin, Willis Harman, Arthur Hastings, O. W. Markley, Floyd Matson, Brendan O'Regan, and Leslie Schneider.

23. Gregory Bateson (1904-80) was an English anthropologist and biological philosopher. Educated at Cambridge, he did early work on pattern and communication in New Guinea and Bali. He then carried out research in psychiatry, schizophrenia, and dolphins. He played a major role in the early formulation of Cybernetics, and helped introduce Systems Theory and Communications Theory into the work of social and natural scientists. His influence is most strongly felt in the fields of education, family therapy and ecology. He was married to the anthropologist Margaret Mead for many years, sat on the Board of Regents of the University of California, and was scholar-in-residence at Esalen Institute in Big Sur. He rose to international prominence through his book Steps to an Ecology of Mind, (Ballantine Books / Random House, New York, 1972), and is widely regarded as one of the giants of twentieth century thinking. See also his book Mind And Nature: a necessary unity, E.P. Dutton, New York, 1979.

24. See Jantsch, Erich: The Self Organizing Universe. (New York: Pergamon Press, 1980.) Also: Henderson, Hazel: Paradigms in Progress: Life Beyond Economics. (Indianapolis, IN, USA: Knowledge Systems, Inc., 1991).

25. See Fuller, Buckminster: Utopia or Oblivion: The Prospects for Humanity. (New York: Bantam Books, 1969).

26. See Gilder, George. Happy Birthday Wired, in Wired magazine, January 1998.

27. See Lovins, Amory; Lovins, Hunter L.; and Von Weizsäcker, Ernst Ulrich. Factor 4 : Doubling Wealth - Halving Resource Use. Earthscan Publications, London, 1997. ISBN: 1 85383 407 6.

28. In his excellent paper: Revisiting Carrying Capacity: Area-Based Indicators of Sustainability (in Population and Environment: a Journal of Interdisciplinary Studies, Volume 17, Number 2, January 1996, Copyright © 1996 Human Sciences Press Inc.), William Rees explains:

> "Since many forms of natural income (resource and service flows) are produced by terrestrial ecosystems and associated water bodies, it should be possible to estimate the area of land/water required by a defined population at a given level of technology. The sum of such calculations for all significant categories of consumption would give us a conservative area-based estimate of the natural capital requirements for that population.
>
> A simple mental exercise serves to illustrate the ecological reality behind this approach. Imagine what would happen to any modern human settlement or urban region, as defined by its political boundaries or the area of built-up land, if it were enclosed in a glass or plastic hemisphere completely closed to natural flows. Clearly the city would cease to function and its inhabitants would perish within

a few days. The population and economy contained by the capsule would have been cut off from both vital resources and essential waste sinks, leaving it to starve and suffocate at the same time. In other words, the ecosystems contained within our imaginary human terrarium would have insufficient carrying capacity to service the ecological load imposed by the contained population.

This mental model illustrates the simple fact that as a result of high population densities, the enormous increase in per capita energy and material consumption made possible by (and required by) technology, and universally increasing dependencies on trade, the ecological locations of human settlements no longer co-incide with their geographic locations. Twentieth century cities and industrial regions are dependent for survival on a vast and increasingly global hinterland of ecologically productive landscapes. It seems that in purely ecological terms, modern settlements have become the human equivalent of cattle feedlots!

Cities necessarily appropriate the ecological output and life support functions of distant regions all over the world through commercial trade and the natural biogeochemical cycles of energy and material. Indeed, the annual flows of natural income required by any defined population can be called its appropriated carrying capacity. Since for every material flow there must be a corresponding land/ecosystem source or sink, the total area of land/water required to sustain these flows on a continuous basis is the true ecological footprint of the referent population on the Earth."

Rees' ecological footprint analysis of his home city of Vancouver, Canada, indicates that city appropriates the productive output of an land area nearly 174 times larger that its political area to support its present consumer lifestyle. Other researchers found that the aggregate consumption of wood, paper, fibre and food by the inhabitants of 29 cities in the Baltic Sea drainage basin appropriates an area 200 times larger than the cities themselves. Rees estimates that the footprint of the Netherlands appropriates between 100,000 sq. kilometres and 140,000 square kilometres of agricultural land, mostly in the third world, for food production alone. He goes on to say:

"This 'imported land' is five to seven times larger than the area of Holland's domestic arable land... It is worth remembering that Holland, like Japan, is often held up as an economic success story and an example for the developing world to follow. Despite small size, few natural resources, and relatively large populations, both Holland and Japan enjoy high material standards and positive current accounts and trade balances as measured in monetary terms. However, our analysis of physical flows shows that these and most other so-called "advanced" economies are running massive, unaccounted ecological deficits with the rest of the planet... Even if their land area were twice as productive as world averages, many European countries would still run a deficit more than three times larger than domestic natural income. These data emphasise that (most developed countries) are over-populated in ecological terms - they could not maintain themselves at current material standards if forced by changing circumstances to live on their remaining endowments of domestic natural capital. This is hardly a good model for the rest of the world to follow!"

Ecological deficits are a measure of the entropic load and resultant 'disordering' being imposed on the ecosphere by so-called advanced countries as the unaccounted cost of maintaining and further expanding their wealthy consumer economies. This massive entropic imbalance invokes what might be called the first axiom of ecological footprint analysis: On a finite planet, not all countries or regions can be net importers of carrying capacity. This, in turn, has serious implications for global development trends.

The current objective of international development is to raise the developing world to present first world materials standards. To achieve this objective, the Brundtland Commission argued for 'more rapid economic growth in both indus-

trial and developing countries' and suggested that 'a five to ten-fold increase in world industrial output can be anticipated by the time world population stabilises some time in the next century.' (WCED, 1987).

Let us examine this prospect using ecological footprint analysis. If just the present [i.e. January 1996 - ed.] world population of 5.8 billion people were to live at current North American ecological standards (say 4.5 ha/person), a reasonable first approximation of the total productive land requirement would be 26 billion hectares (assuming present technologies). However, there are only just over 13 billion hectares of land on Earth, of which only 8.8 billion are ecologically productive cropland, pasture, or forest (1.5 ha/person). In short, we would need an additional two planet Earths to accommodate the increased ecological load of people alive today. If the population were to stabilise at between 10 and 11 billion sometime in the next century, five additional Earths would be needed, all else being equal - and this just to maintain the present rate of ecological decline (Rees and Weinberger, 1994).

While this may seem to be an astonishing result, empirical evidence suggests that five phantom planets is, in fact, a considerable underestimate (keep in mind that our footprint estimates are conservative). Global and regional-scale ecological change in the form of atmospheric change, ozone depletion, soil loss, ground water depletion, deforestation, fisheries collapse, loss of biodiversity, etc., is accelerating. This is direct evidence that aggregate consumption exceeds natural income in certain critical categories and that the carrying capacity of this one Earth is being steadily eroded. In short, the ecological footprint of the present world population/economy already exceeds the total productive land area (or ecological space) available on Earth.

This situation is, of course, largely attributable to consumption by that wealthy quarter of the world's population who use 75% of global resources. The WCED's 'five to ten-fold increase in industrial output' was deemed necessary to address this obvious inequity while accommodating a much larger population. However, since the world is already ecologically full, sustainable growth on this scale using present technology would require five to ten additional planets."

29. See Meadows, Donella H. & Dennis L. and Randers, Jorgen: Beyond The Limits: Confronting Global Collapse, Envisioning a Sustainable Future. (Post Mills, Vermont, USA: Chelsea Green Publishing Company, 1993.)

30. Kennan, George. Policy Planning Study 23. (Washington, D.C.: United States Government, Department of State, 1948.)

31. Chomsky, Noam. Year 501: The Conquest Continues. (Boston: South End Press, 1993).

32. Chomsky, Noam. Opus cit.

33. See Sterling, Bruce: Compost of Empire, in Wired magazine, April 1994. This excellent magazine about the online communications is also available on the Internet (call Wired Online Services on + 1 415 904 0660 for details.)

34. Agarwal, Anil. From Earth Times article, 1993.

35. For an anthropological and psychogical study of the image of Apocalypse, see O'Callaghan, Michael. When the Dream Becomes Real : The Inner Apocalypse in Mythology, Madness, and the Future. (Monograph, 1992. Published on the Global Vision web site at www.global-vision.org/dream

36. Laing, R.D. Personal communication to the author.

37. See Grof, Stanislav. Realms of the Human Unconscious: Observations from LSD research. (New York, E.F.Dutton, 1976.) See also his Beyond the Brain: Birth, Death, and Transcendence in Psychotherapy. (Albany, NY, USA: State University of New York Press, 1985).

38. Regarding the therapeutic function of death/rebirth imagery at the individual level, see Perry, John Weir. The Self In Psychotic Process: Its Symbolization in Schizophrenia; with an introduction by C.G.Jung. (Los Angeles: University of California Press, 1953). Also: Jung, Carl Gustav: Über Wiedergeburt. (Zürich: Eranos Jarhbuch [1939], 1940). Regarding the function at the cultural level, see Perry, John Weir. The Heart of History: Individuality in Evolution. (Albany, NY, USA: State University of New York Press, 1987.)

39. Twenty world cities with populations over 10 million are now participating in the Mega-Cities Project , a collaborative multi-sectoral endeavour to share solutions to their common eco-social problems. As of 1995, this network includes Accra, Bangkok, Bombay, Buenos Aires, Cairo, Calcutta, Delhi, Jakarta, Karachi, Lagos, London, Los Angeles, Manila, Mexico City, Moscow, New York, Paris, Rio de Janeiro, Sao Paolo, and Tokyo. Expected to grow to 23 Megacities by the year 2000. Contact: Janice Perlman, Executive Director, The Mega-Cities Project, Inc., 915 Broadway, Suite 1601, New York, NY 10010. Tel: + 1 212 979 7350. Fax: + 1 212 979 7624.

40. See Ponting, Clive. A Green History of the World: The Environment and the Collapse of Great Civilisations (New York: St Martin's Press, 1991.) See also Global Vision's initiative to develop Sustainable City, a GIS computer software programme for sustainable urban management, designed to enable any town or city to see itself - and the surrounding environment on which its survival depends - as a whole system. Details may be found on the Global Vision web site at www.global-vision.org/city

41. See Berry, Thomas: The Dream of the Earth. (San Francisco: Sierra Club Books, 1988.)

42. See Schwartz, Peter, and Ogilvy, James: The Emergent Paradigm. (Menlo Park, CA, USA: Center for the Study of Social Policy, SRI International, 1979).

43. For the most informative overview of progress towards sustainable development available in recent years, see The Bulletin, published quarterly from 1992 - 96 by the Centre for Our Common Future, Geneva, Switzerland.

44. Bateson, Gregory. Opus cit.

45. Bateson, Gregory. Opus cit.

46. Youngblood, Gene. The Mass Media and the Future of Desire. (Sausalito, CA, USA: CoEvolution Quarterly magazine, winter 1977 / 78.)

47. Postiglione, Amedeo: The Global Village Without Regulations: Ethical, Economical, Social And Legal Motivations For An International Court Of The Environment. (Florence: Giunti Gruppo Editoriale, 1992).

48. Gore, Al. Opus cit.

49. Gorbachev, Mikhail. International Green Cross flyer, 1993.

50. Robertson, James. The Sane Alternative. (River Basin Press, 1980.)

51. Brown, Lester R. Building A Sustainable Society. (New York: WW Norton, 1981.)

52. Hawken, Paul & Schwartz, Peter & Ogilvy, James. Seven Tomorrows. See Hawken, Paul: The Next Economy. (New York: Random House, 1983.) The Ecology of Com-

merce. (New York: HarperCollins, 1993).

53. Campbell, Joseph, The Power of Myth (with Bill Moyers), Doubleday, New York, 1988; there is also an excellent television series of the same name, available as a best-selling six-part boxed set of videotapes from Mystic Fire Video on their web site at www.mysticfire.com.

54. Thompson, William Irwin: At The Edge of History. (New York, 1972.)