



# Safar

ECOLOGY

### The Situation

Today the life of the planet and its inhabitants is threatened by sheer "bigness". The scale of damage which huge enterprises can and do cause to the total biosphere by means of industrial practices and substances is immense. If unchecked, it could lead to disaster.

Examples of the dangers are:

- \*Pollution of the seas by oilspills and chemical effluents are destroying the photoplankton which renew the oxygen supply in the atmosphere.
- \*Similar results may follow from deforestation and the massive use of fossil fuels
- \*Industrial pollutants in the atmosphere may cause devastating changes in the temperature of the planet.
- \*The dumping of radioactive wastes are contaminating extensive areas of the planet.
- \*Overcultivation and the intensive use of petrochemical fertilizers are exhausting the topsoil, causing rich, life-sustaining areas of the earth to become barren.
- \*Human greed may continue to destroy whole species of animals.

All these are examples of humankind's failure, until now, to understand that it is a co-equal participant in all the earth's processes. With responsibility to preserve and improve the earth for succeeding generations and evolutionary possibilities, humankind is, perhaps, first among equals. The earth's very survival is the urgency. The rape of the planet for current, sometimes selfish and ill-considered reasons is not the responsible exercise of human partnership with the earth.

In our research, we determined twenty areas of current ecological concern. Some, like the concern for preservation, have been concerns in industrialized countries for a hundred years or more, yet is still a lively concern as even National Parks and Wilderness Areas are now threatened by the human invasion brought on, in part, by popularized ecology. Then again, some areas of concern, like ethics, are just beginning to frame responsible human action beyond the moral imperatives of stewardship to the implicate necessity that humankind act in certain ways instead of others in order that the future itself does not become extinct. In between are popular movements related to recycling, water purity, natural agriculture, solar energy, etc. The depth and breadth of activity in these arenas is startling and yet one feels a critical mass of activity is yet to be achieved. One also despairs over the march of time -- the earth moves and breathes at a different pace than humanity-- wondering if disaster can really be forestalled. However, there are major national efforts and countless small scale individual efforts going on all over the world that provide continuing hope for the future of the planet.

The Four Directions Towards the Year 2000

We will see in the world during the next 16 years an accelerating rate of development of new regenerative technologies. These technologies will not only process required outputs from raw inputs, but will additionally produce new "raw" inputs from previously considered wastes. Good examples of this regenerative technology can be found on a large-scale in certain Japanese industrial zones where waste from one industry is raw material for the one next door, and, on a small scale, in the small labor intensive neighborhood "industries" known in North America as "recycling centers".

Between now and the year 2000, people concerned with the earth's ecology will be about the task of creating a 21st century eco-system upon the earth. This task has at least two major parts. The first is the development of sustainable urban ecological systems. Significant efforts in this part are: water revitalization (Seattle, Cleveland, Toronto), developing the "carrying capacity" standards of geographic masses (Peoples Republic of China), and acknowledging the interplay between healthy people and healthy environments in our urban centers. The second part involves more remote areas where ecological integrity needs to be maintained and/or developed. Examples are: sustainable agricultural efforts in the U.S. midwest, forest development in the Philippines, India, and Kenya, and continuing preservation activities in many nations.

WORLD ECOLOGICAL VISION TOWARD THE YEAR 2000				
FUTURE DIRECTIONS	ACCELERATING THE DEVELOPMENT OF REGENERATIVE TECHNOLOGIES	CREATING THE EARTH'S 21st CENTURY ECO-SYSTEM	PARTICIPATING IN THE UNFOLDING DRAMA OF THE EVOLUTIONARY PROCESS	CONSTRUCTING A PLANET-SUSTAINING ECONOMIC STRUCTURE
CURRENT	ENERGY RESOURCES	WATER REVITALIZATION	ETHICAL FRAMEWORK	ECONOMIC REVISIONING
		POPULATION CAPACITIES	NUCLEAR POLICY	
	WASTE RECYCLING	HEALTH INTERDEPENDENCY	VOLUNTARY DEMONSTRATIONS	APPROPRIATE TECHNOLOGY
		SUSTAINABLE AGRICULTURE	COALITION NETWORKS	
CONCERNS	SOLAR DEVELOPMENT	FOREST DEVELOPMENT	CONTEXTUAL EDUCATION	1000 YEAR COSTS
		SPECIFIC PRESERVATION	PLANETARY INTERDEPENDENCIES	

The next 16 years holds the exciting promise of participating in the unfolding drama of the evolutionary process. The drama involves a willingness to transform and to be transformed by one's actions upon and relationship to the earth. A new ethical framework is developing at the intersection of archaic consciousness and "new" science. Examples of planetary interdependence are being revealed daily, giving practical reality to Einstein's observation, "a falling leaf alters the farthest star". The quest after a global nuclear policy which can forever forestall our ability to end the evolutionary process finds fertile ground in ecological concerns. The abundant activity of voluntary associations, coalitions, and networks existing over the last 20 years has given birth to a new context within which millions of people willingly operate.

Finally, those who are concerned with long-term ecological health will be working alongside others in the world constructing a life-supporting economic order. The ecological paradigm has fostered radical revisioning of a possible new world economic. As well, it has sparked the imagination of millions to adopt or invent new technologies appropriate to the complex human, social and ecological needs of a given local area. The rising revelations of the long-term costs of nuclear waste, chemical dumping, etc., forces a new look at what economic measures and how large a field in both time and space it must attend to in order to be a realistic discipline for the future.

The Response

The new "Science" of ecology, which includes concern with environmental issues as well as with the biological genetic effects of human activity, expresses the principle that all of nature is subtly, intimately and systematically interrelated. At the heart of this now widely spread understanding is the significant insight that the environmental ills of the planet will not be healed solely by economic reform and the application of aesthetic mandates. What is required is a sense of reverence for all of nature, for all of life and a corresponding shift to a more measured and simple life style. The new theory, the "Gaia Hypothesis" (that the earth is an organic entity and humankind its consciousness) may be understood as a symbolic representation of the realization of our caring relationship to the planet.

Care of the planet is a fundamental issue for society today, underlying those of economics, politics and social justice. It is reflected in personal choices -- the things we purchase and consume, the size of our families, our forms of recreation and many others.

The depth wrestling for every human being has to do with what Gregory Bateson called an "ecology of the mind." How does one let go of secure self-reinforcing illusions? How does one create and care for the world within so that the one world, which is both within and without, is reflected in its wholeness, its integrity, and its interrelatedness instead of its division, its utility, and its competing fragmentation. This is every person's struggle and lifelong task.

## Ecological Trends and Forces

A growing planetary consciousness about the cruciality of sustaining the earth's resources to support the growth of life is forcefully present today. Critical issues such as the "Population - Bomb" and the extreme pollution of our environment is giving rise to global ecological trends in a new way.

Since the Spanish, Portuguese and the English navigated our global waters; or the Arabs, Indians and the Chinese journeyed through the deserts and the mountains to trade gold, silk and ceramics; or the Japanese, Russians and Americans flew their kamikaze pilots, astronauts, and cosmonauts through the airways and atmosphere. This environment that has been traveled, across the span of time, is either gone or has reappeared in a different form and chemical composition.

In recent years, we have witnessed the farming activities of the Sinai desert turning many square miles of white sand into green grasslands. At the same time, communities and sprawling cities have emerged, demanding tracts of agricultural land or forest lands to turn into buildings and concrete pavements. There seems to be a global action oriented concern in the zoning of areas for reforestation purposes, for recreational needs, and futuristic resource needs. Campaigns such as Save the Forest, Soil Conservation and Clean Water are manifestations of this trend.

There is a trend in enabling local communities and nations to become increasingly aware of the use and misuse of available resources. One example of this is the increased cultivation of community gardens. This promotes both a sense of self-sufficiency and increases the productivity of the available land.

Associations are being formed today both nationally and internationally to look into the transfer of appropriate technology and information. This is changing the methods of farming and local industry through a variety of ways to use land and water resources while at the same time protection the environment to promote better health and welfare.

There is a trend towards finding alternative energy sources in order to move away from a sole dependence on oil. This is evidenced by experiments in setting up solar systems, the use of wind and water to generate energy and even recycling waste for this purpose. A number of nations have also opted for the use of atomic energy as a viable source for the future.

## The Gaps

We have discerned four gaps in meeting the demands of the ecology arena.

First, there does not seem to be an effective interchange network. Interchange publications, such as "Mother Earth News", have a wide circulation and the North American Bio-regional movement is gaining strength. However, a wide sharing among all parts of society and global interchange needs a practical strategy.

Second, persons we spoke with said that the ecology movement as a whole lacks a comprehensive screen for holding all the manifestations and activities in ecology together in a supporting framework.

Third, there are few demonstrations of the integrated application of current self-sustaining eco-technology. Therefore, practical images of new lifestyles and technology are not readily available to people.

Finally, the ecology movement has not had an effective impact system since the "Earth" and "Sun" days of the early 70's. The gap is that the masses of people are not impacted by the need to do their own model building and action in this arena.

Implications For The Order

The environmentally endangered planet and breakloose in new ecological technologies, economics, and lifestyles are pointing to 5 implications in the way we work in the next 16 years.

1. Our experience in our research in ecology suggested that no one is doing the comprehensive research task of pulling together the emerging pieces of the new ecological vision. We could make a profound contribution to the existing trends by pulling together a screen on the Ecological Processes similar to the work we did on the social processes. This would require collaboration with the scientific community and the hundreds of ecology groups and greatly expand our relationship with futuric thinking people. A New Ethical Framework in relationship to the Ecological Processes could come out of this work. Income would come from publication of this research and readily available grants.

2. There are also implications for our training. Ecology has the potential of addressing lives at the depth and enabling people to practically embrace the new paradigm. We need to rework our curriculum to ecological crisis and vision of the future, particularly the HDTIS curriculum, the ES-1 course, and the ethical frame work in the LENS Seminar. The gap in impact systems points to a large market in the ecological ethical arena.

3. The planet is calling us to the ecologically intentional use of our facilities as a demonstration of the future. This relates directly to the shift in development from the blueprint external input mode to a greenhouse sustainable mode that fosters the bottom-up approach and self generating funds.

For example: The Kemper facility could become a demonstration of an energy self-sufficient urban facility. It could be heated by solar and waste conversion systems, lighted by and abundant wind resource, produce some of our food, recycle it's input to be utilized in a green house facility. The potential for doing this on a profit center basis would greatly reduce our present costs of operating this facility. This could be the formulation for a multi-focus centre with one focus on ecology including an ecology education programme drawing people from around the globe to study in an ecologically sound environment.

In every house we could investigate our use of the natural resources and plan for a more environmentally harmonious operation.

4. Individual and corporate healthful living patterns include balanced nutrition and preventative health measures in all global locations. Health caretakers, demonstration gardens, new nutrition forms, limited use of chemicals, and a hard look at current unhealthful habits are called for to undergird our vitality.

5. We are clear that political and economic contradictions at non-local levels seriously prevent the new vision from being realized. We must take a hard look at our participation in these dimensions through our investments and political influence.

## Imaginal Shifts with Ecology

The biggest imaginal shift has been the shift to the concern with ecology itself. From separate concerns for wildlife preservation, agriculture, biology, chemistry, meteorology, oceanography, hydrology, etc. to a concern for all aspects operating within a single system, interacting and cooperating with one another - in other words, to a study of the whole - marks the greatest shift that has happened in our time. This shift has taken place largely in our lifetime.. The chart below describes some of the unfolding aspects of this shift. Some are obviously more pervasive than others. Some are still operating at the conceptual level while others are nearly complete in the sense that the shift has become part of the social climate.

Arena	From	To
Human Relationship	Stewardship	Partnership
Resource Base	Maximum extraction	Minimum extraction
Education	Hobby, part-time activity	Integrated way of life
Theory	Natural determinism	Nurturing cyberneticism
Economic Structure	Owning	Borrowing
Human	Largely Asthetic	Largely ethical
Basis for Decision	Quantifiable Utility	Quality of living
Technology	Big Fix	People-oriented and simple
Results	Linear impacts (irreversible)	Cyclical processes (renewable)
Political Preoccupation	Preservation	Limitation
Time	Short-term	Long-term