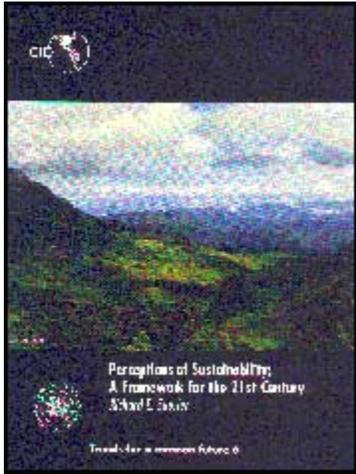


Perceptions of Sustainability: A Framework for the 21st Century



Richard E. Saunier

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Production

Editorial Center of SEDI

Design and Layout

Sans Serif Graphics

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Presentation

In the last decade, we have been witness to and participated in significant changes that have transformed the world as we know it and that have challenged the manner in which we think and act in both the public and private worlds. Ideas, priorities, mechanisms and concepts that have been practiced for many years are now being reviewed and adapted to new realities.

In response to the new times, the Inter-American Council for Integral Development (CIDI) was established in 1996 within the framework of the OAS. CIDI adopted a new paradigm and philosophy for partnership for development in order to guide cooperation programs and policies. This new philosophy aspires to replace the forms of technical assistance that were historically based on the concept that development involved the transfer of funds from "have" to "have not" countries, largely ignoring the notion of cooperation as an instrument for collaboration, exchange, mutual support and joint action.

In the framework of this new cooperation within the OAS, the traditional relationship between donor and recipient has been replaced by a new method of participation and association that emphasizes joint action throughout the development cycle. Programs and projects are now determined by the recipients, which means that needs are defined by local governments rather than by the cooperation agencies. The basic objective has been changed to reflect the increased capacity of the communities to be the actors and craftsmen of their own sustainable development.

The study presented here forms part of the series entitled *Trends for a Common Future*, which shall explore the current state of cooperation in our region in each of CIDI's priority areas. The studies present, among other things, historical backgrounds, current situations, sectoral analyses and challenges to be faced in the new millenium.

It should be pointed out that the studies included in this series reflect the points of view of many well-known personalities in the Hemisphere and, although they do not necessarily represent the opinion of the General Secretariat of the OAS or its member states, strive to serve as a starting point for encouraging dialogue and exchanging ideas on the topics presented.

As a forum for inter-American dialogue, CIDI supports initiatives such as those presented here, which strive to open new paths of communication and promote its role in the creation of common agendas for development in the Hemisphere, thereby encouraging the creation of a community of nations.

Leonel Zúñiga
Executive Secretary for Integral Development





Forward

I have a confession to make. I don't understand the term "sustainable development" either. This bothered me for over 15 years but not any more.

In April of 1987 I participated in the "Only One Earth Conference on Sustainable Development" at Regent's College in London. Across town another meeting was taking place to launch the report of the World Commission on Environment and Development (WCED) - the report that produced the most often quoted definition of sustainable development.

The paper I wrote for the "Only One Earth Conference" is not the one that appears in the publication of that meeting (*The Greening of Aid: Sustainable Livelihoods in Practice*. Conroy and Litvinoff, 1988) in that my opening remarks regarding the concept of sustainable development were edited out. I had said that the idea was an inviting one, but I also said that I did not understand it in a practical way and got into further trouble by questioning the relevance to development of something that was not clearly grasped. Likewise, in the discussion period, I voiced the opinion that the term was fast becoming the kind of "political babble" that could make a productive response to the needs for development even more difficult; it endeared me to almost no one.

On the return flight to Washington, D.C., I sketched out an essay given the remarkably straight forward title, "What are the Problems with the Term 'Sustainable Development'?" Although fairly widely read, the essay never officially saw the light of day because no "environmental" publication would touch it. It asked a number of still unanswered questions:

1. "How can we emphasize solving the inequity that *could* occur between generations when existing social and geographically based inequities are so pervasive?"
2. "Given the dynamic nature of nature (including the ways in which humans go about satisfying their needs), is there a place in the concept for land-use change?"
3. "If not, is there a place in the concept for 'subsidy?'"
4. "If the answer to either (or both) of these is 'yes', then how does that differ from what we have now?"
5. "If the answer is 'no' then what do we do about the fact of change?"
6. "How can we possibly foresee what future generations will require to improve their quality of life when our view of the future is based totally on a search for quality in our own lives? Is there not a conflict of interest here?"
7. "Are not isolation and a lack of opportunity for education and employment just as damaging to future generations as are fewer native forests and the loss of a certain

percentage of the total gene pool?"

Over the next five years the long list of national and international conferences, land meetings and the steady stream of books, articles, speeches, and other musings supporting the concept of sustainable development only added to my confusion. The concept was widely accepted, relatively unquestioned and, with notable exceptions, made little difference to development theory, let alone to development performance. As long as speeches on sustainable development were positive (accuracy of content did not seem to matter) they received applause. The term had only to appear, and the more times the better, to receive acclaim and approval. Yet, projects promoted as "sustainable" failed at the same rate and frequency as those that were "development as usual."

Debate was not encouraged, the phrase became one of the more "jargonized" in the history of the environmental movement, and seemingly everybody in certain circles noisily demanded that development be made sustainable (Other circles had no idea that anything at all was going on).¹ For me, all of this climaxed at the United Nations Conference on Environment and Development, the so called "Earth Summit," which I declined to attend because, "I had been to circuses before and really didn't care to go to another one."

¹Of six billion people on the planet, two billion may have heard the term in some form or another. Perhaps 1 a billion could have a vague newspaper idea of the concept. Sixty million may have attended conferences, workshops, meetings, or classes on the topic. These would represent but 1% of the total population.

But I was wrong. Certainly the Earth Summit was, in many ways, a circus. However, the fact that most of the national governments of the planet accepted the concept changed the way things worked. This success launched several institutions and processes important to making development successful-national sustainable development councils, the sustainable development business councils, and local interest in taking the lead in local development are some of these. Equally important for me, though, was that once the governments signed on to sustainable development, they then asked a very valid question: "What is this thing that we have signed on to?" As a result of this question being asked by officialdom, there is now no stifling of debate, and the processes of consultation, argument, clarification, adjustment, and empowerment that it started are impossible to stop. While still costly in time, money and other resources, because we need to climb out of the hole we dug for ourselves, only good things can come of it.

Still, writing a piece, even a short piece, on sustainable development in 1999 that contains something new, different and relevant is much more daunting than I had originally thought. The number of pages written on the topic by others has reached the millions and anything "new, different and relevant" must already be out there somewhere. For those of you who wish to start out on a fascinating, somewhat time consuming, often confusing, and frequently entertaining journey into the labyrinth that is "sustainable development," three good places to begin are on the internet:

[http://www.webdirectory.com/sustainable development/](http://www.webdirectory.com/sustainable%20development/)
<http://sdgateway.net> and,
<http://www.ncsdnetwork.org>

Despite the massive amount of material already written on the topic, something instructive and

relevant - if not new and interesting - can still be said. Most readers familiar with sustainable development issues will note that little time is spent here on the normal litany of subsidies, carrying capacity, restoration, growth vs. development, measurement criteria, or the sustainability of specific sectoral activities. These topics are all important to development but a different, and no less important, route has been chosen for this discussion. Many other things of consequence in the sustainable development debate also need to be told and this is an attempt at one of them.

The next few pages, therefor, will: a) discuss where the concept of sustainable development came from (described many times before but not as accurately as could be), b) try to explain why the concept has had its difficulties (and why many of these difficulties remain), and, c) spell out the concept's validity for improving the human condition (in ways far beyond what may have been originally intended).

Many individuals contributed to the arguments presented here, others helped render them more or less intelligible, and others gave more than their share of encouragement. Special thanks go first to colleagues and friends at the Organization of American States, most especially to Dr. Richard A. Meganck, Director of the Unit for Sustainable Development and Environment who could rightly claim that many of the best ideas in here are his. Most of the good ones that remain belong to Yadira Soto, of the Unit for the Promotion of Democracy, who taught me about the good, the bad, and the ugly of conflict in our societies and whose attempts to teach me the ways and means of conflict management are slowly sinking in. Appreciation also goes to Christi Jorge, whose comments on an early draft helped immensely.

Dr. Ramon Daubon, Director of the Caribbean Environment and Development Institute is appreciated for his numerous e-mails of encouragement and his upbeat way of life. Special thanks go to my wife, Gayle, tireless utility infielder of the family who handles my bad grammar and bad ideas with equal aplomb.

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Introduction

Democracy is not solely about the relation of a set of institutions but about much improved collective capacity to resolve common problems. In other words, sustainable societies should have the mechanisms to ensure that conflicts are resolved peacefully.

-Tanvi Nagpa

A science fiction short story of several years ago (both the title and the author escape me) has each human generation from Cave Dweller to a time in the future when computers have become so small that they cannot be seen, and so powerful that they know everything, asking the same three questions: "Where did we come from?" "Why are we here?" and "Where are we going?" At the end of the story, the questions remain unanswered, we have even more to think about, and we are left with a substantial increase in humility with which to do it. Still, we *are* here, we *do* generally live life as if there were a purpose, and, almost universally, we *hope* that this will somehow make the answer to humanity's third question a happy one²

²After checking with experts, I have decided that the story I refer to may have evolved in my own mind from Isaac Asimov's famous science fiction short story "The Last Question." What is interesting is that, though written in 1956, the "Last Question" may say more about sustainable development than anything written since.

One could, and should, ask similar questions about sustainable development:

"Where did the concept come from?" "What does it mean?" and, "Where is it taking us?" Not easy questions either, and we make no pretense that any of them will be answered here. But, confident that one more piece on sustainable development will not totally overload the system, we propose to do three things:

The first is to develop a "history" of its origins including something about its major events, guiding documents and institutions. Of course, this has been done many, many times before. But here we want to do it in such a way that we hope will dismiss one of the noisiest and, in the end, least important, of the numerous stumbling blocks on the road to sustainability - the problem of ownership; does the concept belong to "environment," to "conservation," to "development" or, is it just "ours" collectively? More importantly, however, is that such a history can be instructive. That is, it can provide methods to help us live as if the concept has a purpose.

The second is to review some of the assumptions, theories, and explanations that make the concept so difficult to grasp; and, then, attempt a sketch of the processes and progress that encompass the concept today. It is surprising what one finds there. For example, interest has not diminished despite the number of publications that have looked into the concept over the last 30 years. The continuous flow of books and articles has "sustainable" describing everything. Literally, everything: World, planet, biosphere, environment, and ecosystems; growth,

livelihoods, consumption, and future; agriculture, fisheries, forestry, transport, communities, and energy; design, management, solutions, and organization; and markets, industry, and business practices to name just a few. The sheer number of areas which attempt their own specific set of sustainability objectives, principles and procedures says something positive about how far we have come in this process (Appendix I).

And the third is to make a few observations and draw conclusions based on discussions of this process, its accomplishments, and its difficulties. We do this with the knowledge that each new publication does something similar. Everybody wants a new paradigm and a new definition of sustainable development. Strangely, it's as if there is a belief that we cannot move forward without marking time. But inventing a new paradigm is a futile exercise at best because, more often than not, paradigm shifts just happen and attempts to organize them either fail miserably or become tyrannies of one kind or another. Paradigm shifts occur because of past failures, dissatisfactions, and discord as well as past agreements and successes. They happen when the conditions are right: when debate takes place, when science is done correctly, when interests turn vocal, and when the weight of the new becomes more than the old can support (Kuhn 1962). Real paradigm shifts sneak up on us and push us into territory where we often do not want to go. However, despite the argument and the protest (and maybe because of them) the results are almost always positive.

We decidedly will not try to force a paradigm shift here. We will, however, attempt a description of one that is underway. It has to do with development, and we would like to think that it also has to do with sustainability.





A History

Sustainable development is the mantra that launched a thousand conferences.

-Anon

Today's ideas concerning sustainability and development result from a diverse, lengthy, on-going process. Our individual understandings of sustainable development depend on when and where we came into the process, and this creates the diversity of opinion that drive the debate on ownership and that cause confusion over definitions. For example, a conservationist at the time of the *World Conservation Strategy (IUCN 1980)* would have a different understanding of sustainability from that of the forest manager in the 1950s, or from a sanitary engineer who picked it up in the 1970s. All three of these interpretations are different from that of a diplomat who learned about sustainable development from the Bruntland Report (WCED 1987) or business persons who learned about it at the United Nations Conference on Environment and Development (UNCED) in 1992.

To a large extent, the various opinions expressed about sustainable development also draw from five different, albeit related, themes. Of these, four have largely shaped the discussions on sustainability: human development, natural resource management, environmental protection, and nature conservation. A fifth theme understands sustainable development as a process of reconciliation first between human groups who are divided from one another by the conflicting demands they make on shared surroundings, and second, between the imagined separation of humans from the rest of nature (Saunier 1999). Increasingly, this fifth theme now guides the discussions on sustainable development and it is here that a paradigm shift can be seen.

Within the theme of reconciliation there appears to be an attitude change of another sort. It is a revitalization of communication within communities. As a result, there is little, if any, hesitance to debate the issue among peers, and it is done with openness and charity in an effort to find common ground.³

³See, for example, the discussions on forestry issues that appear in *Eco-Watch*, an internet discussion forum at <<http://www.fs.fed.us/eco/eco-watch/ecowatch.html>>.

Human Development: In part the difficulties in defining sustainable development can be blamed on the obstacles to finding a clear definition of development itself (ICDI 1980). The concept is abstract and the word indicates both objective and process. Environmental quality and conservation as well as social and economic goals often form parts of development objectives - and they may do so either separately or together. Development progress may be measured in terms of GNP, life quality indicators, miles of roads built, individuals trained, species discovered, or square kilometers of land or sea protected. Such differing and often incompatible goals are but part of the problem; even greater difficulties lie in what one does to reach them. Process is always questioned: are the objectives, whatever they may be, met through technical assistance

or finance? Loans or grants? Bilateral or multilateral? Capacity building? Public or private? Institutional development? Now or later? This group or that? And how does one choose?

"Modern" social and economic development began at the end of WWII and three major events defined how it was to be accomplished. First, the 1944 meetings at Bretton Woods led a year later to the organization of the International Bank for Reconstruction and Development (IBRD) and the International Monetary Fund (IMF). IBRD was to provide loans to the developing world as well as to help rebuild Europe and Japan and the IMF was to regulate currencies, stabilize exchange rates, bolster government finances, and provide for free flowing trade.

The United Nations was formed in that same year and a number of institutions meant to support development were rapidly created. The World Health Organization (WHO), the United Nations Development Programme (UNDP), and the Food and Agriculture Organization (FAO) were some of the earliest, formed to give support and a voice to the developing world - although the noise of the Cold War made hearing them difficult.

Then, in 1947, the United States established the Marshall Plan for the stabilization of Europe. Development success in Europe, and in Japan, spawned other arrangements, added more UN agencies, and spun off regional institutions so that, today, a complex array of hundreds of bilateral and multilateral government agencies and thousands of private and non-governmental organizations actively support development in some form or another. Most provide "aid" of some kind based on criteria that reflect everything from altruism to hegemony.

Successful efforts in Europe and Japan were based on development theory that looked toward industrial growth, trade, and technological innovation sustained by successful broad scale planning that dictated the nature of development for the next twenty years. Early on, development was the province of engineers (of various kinds) and economists (of various ideologies). While the work of the engineers had a narrow focus and funding, the economists were more theoretical, had objectives that were contested and used methods that obliged manipulation of communities and governments.

However, the successes in Europe and Japan were not easily replicated in the developing world which lacked organization and required different (and unknown) prescriptions to respond both to the realities of the place and to needs totally unlike those of post-war Europe and Japan. Control was impossible. Land tenure was, and in many parts of the world remains, a tortured maze. Education levels were lower, and each local and distinct culture held different views on what was, and was not, important. East vs. West siphoned off resources and what remained went to bolster allies with no thought of how corrupt they may have been. An elemental distrust from South to North and North to South became a side bar to these events that can still be felt, if not seen, in the forums of modern multilateral institutions.

In the late 1960's and 1970's development models changed and changed again. Nearly a dozen theories guided development: basic needs, alternative technologies, institutional development, grass roots, marginalization, dependency, debt restructuring, and concerns for such social obligations as education (minimal and ephemeral), were all emphasized at one time or another. But they always looked toward increased production and growth (Osborn 1993). Then, in the 1980's "sustainable development" appeared and, while growth remained an imperative in the minds of many on the development side, none of them would admit to proposing anything

unsustainable or unnecessary: "Although growth is not the end of development, the absence of growth often is," states the 1991 UNDP *Human Development Report* (UNDP 1991). By 1996, however, UNDP had become a full and valued member of the sustainable development community (UNDP 1996).

Indeed, much of the information and ideas on how the development institutions view sustainability now comes from UNDP⁴ and, of course, the World Bank.⁵ These two institutions and the regional banks (Inter-American Development Bank, Asian Development Bank, Central American Bank for Economic Integration, European Investment Bank, African Development Bank, Andean Development Corporation, and others) all provide funding for "sustainable" or "environmental" projects although the criteria used to classify such projects are as variable as the institutions themselves.

⁴For full information on the work of UNDP in sustainable development and environment see <http://www.undp.org>.

⁵See the Vice Presidency of the Environmentally and Socially Sustainable Development Network (ESSD) web page for information on the World Bank's policies and programs in sustainable development at <http://www.worldbank.org>.

Conferences that influenced thinking in the development institutions include the 1974 Bucharest Population Conference, the 1974 Cocoyoc, Mexico Symposium; two Habitat Conferences (1976 in Vancouver, Canada, and 1996 in Istanbul, Turkey); the 1994 Cairo Conference on Population and Development, and other sectoral congresses in forestry, fisheries, health, food production, etc. In the end, an additional meeting, the Fourth UN World Conference on Women held in Beijing, China in 1995, may be more important than any of the others for sustainable development because of the growing awareness of the importance of women in development as executing agent, catalyst, and object of development concern.

For the development institutions, though, sustainable development, like economic and social development, remains anthropocentric. Emphasis is on criteria and standards, economic incentives and disincentives, discount rates, and methods designed to reach specific production goals. Whether it be industry, business, agriculture or forestry, the instruments of sustainability resemble the best practice approaches used to manage natural resources or to make industry more efficient (Montreal Process 1995). Of course, these instruments alone cannot guarantee sustainable development for the same reason they cannot guarantee development: an increase in the number and severity of conflicts brought on by the development actions being promoted.

Development aims to treat the demands made by rich and poor alike. But, within the development community, sustainable development implies a search for equitable growth, alleviation of poverty, food security and, under some circumstances, the use of alternative technologies, especially in agriculture for the control of pests and the use of scarce water. Programs in health and education remain as important as programs in conservation and may even have a greater impact on what the conservationists want.⁶ Development's offerings to the sustainability debates encompass social and gender equity and improvements in the standard of living. And, while natural resource management is meaningful, for this group, it is only meaningful from the point of view of production. As a consequence, relations between this community and the conservation and environmental protection communities are nothing if not contentious and continue to be driven by suspicion and misunderstanding.

⁶The 1996 *Human Development Report* states that during the last two decades combined primary and secondary enrollment of girls increased from 38% to 78%. At the same time fertility rates dropped by more than a third.

Environmental Protection: Environmental protection, like environmental problems, is as ancient as human needs (Ponting 1990). Yet environmental protection is seen as something new; required by the industrial revolution and population driven resource exploitation.⁷ But if there is a modern beginning it is with Rachel Carson's *Silent Spring* (Carson 1962). *Silent Spring* spoke of the dangers to wildlife and humans of synthetic chemicals, most particularly pesticides. Official studies proved her correct and in 1970, DDT and other man-made pesticides were banned from use in the United States. Global interest and global need were enough to catch the attention of the United Nations and in 1972 the UN Conference on the Human Environment (The Stockholm Conference) was held. However, much of the work of the conference was done previously at an international seminar in Founex, Switzerland. This seminar laid out the stance of the developing nations which was that concerns for environmental protection in the North would prohibit development in the South. As a result, principles were incorporated into the "Stockholm Declaration" and Plan of Action that reflect the viewpoints of the developing countries: 1) that the environments of the developing countries were different from those of the developed countries, and 2) that resolution of problems in the Third World required development (UNEP 1986). For example, *Principle 8* says the "Economic and social development is essential for ensuring a favourable living and working environment for man and for creating conditions on Earth that are necessary for the improvement of the quality of life." *Principle 9*: states that "Environmental deficiencies generated by the conditions of under-development and natural disasters pose grave problems and can best be remedied by accelerated development through the transfer of substantial quantities of financial and technological assistance as a supplement to the domestic effort of the developing countries and such timely assistance as may be required," and *Principle 11* says that, "The environmental policies of all States should enhance and not adversely affect the present and future development potential of developing countries, nor should they hamper the attainment of better living conditions for all..."

⁷These ideas created a whole genre of "environmental reporting" often described as "gloom and doom." Though sometimes right and often wrong, the predictions created a popular ground swell of interest in the subject of environmental protection that rapidly covered the globe. See, for example, Paul Ehrlich (*The Population Bomb*, 1968) and Lester Brown (*World Without Borders*, 1972).

Two other major products came out of Stockholm that forever changed the way development works: a) the establishment and funding of the United Nations Environment Programme (UNEP) and, b) the idea that civil society could and should have a place in the development process. This later idea, still not completely accepted by some governments, arose because of the successful, if somewhat contentious, presence in Stockholm of the Environment Forum of non-governmental groups. Never before had such a large number of representatives of governments and civil society been in the same place, at the same time, discussing the same topics - together.

Twenty years after the Stockholm Conference on the Human Environment, the United Nations Conference on Environment and Development (UNCED) was held in Rio de Janeiro. However, UNCED was not called to celebrate 20 years of success based on the work of the Stockholm

Conference. Rather it was designed and executed because of a growing concern that environmental protection and development must still be brought together.

Thus the UNCED was called to look at both environment and development. But the UN authorizing resolution for the meeting, most of the national delegations, and the majority of discussions before and during the Conference, overwhelmingly reflected the concerns of the environmental movement. Nevertheless, the governments at UNCED negotiated and approved the *Rio Declaration on Environment and Development*, a collection of 27 principles that "define the rights and responsibilities of nations as they pursue human development and well-being" and *Agenda 21*, a 300+ page document which outlines how development should proceed. Governments also signed three other international documents: the *Convention on Biological Diversity*, the *United Nations Framework Convention on Climate Change*; and a statement of forest principles to guide the management of all types of forests. Significant as well is the large increase in interest and commentary on sustainable development created by the decisions at UNCED. The topic is now freely discussed and debated-no longer the province of just the conservation and environmental NGOs.

The elaboration of principles and standards as instruments to achieve sustainability are central to environmental protection. Scientific data are to play a decisive role in this (Hammond 1995). It was soon realized, however, that scientific data alone are not sufficient to insure sustainability; something else is needed that has more to do with social contracts than it does with science. Despite this, however, the means to accomplish environmental protection still generally have a "command and control" orientation-methods that are difficult enough in countries with strong judicial systems and interest groups on continual watch. Without a great many changes in the judicial and governmental systems in much of the developing world, command and control will achieve less than needed and for a while to come, sustainability could be an unfortunate casualty.

Conservation: Conservation is a major piece of the sustainable development question. The place it occupies, however, covers a wide variety of beliefs and, like development, it has no universally accepted definition (Cain 1974).

Natural resource conservation in the early 20th century was often promoted by the same people who were so overwhelmingly dedicated to natural resource use- sports hunters and fishermen, farmers and loggers (Ehrenfeld 1970). It is a utilitarian concept of conservation that fits well with a utilitarian view of sustainability. For example, the *World Conservation Strategy* (IUCN/WWF/UNEP 1980) was an early contribution to discussions on sustainable development. It had conservation as its major theme but it also called for the sustainable *use* of species as well as for the conservation of *essential* ecological processes and the preservation of genetic diversity, again for *utilitarian* purposes

At the other end of the conservation spectrum is the idea that nature should be conserved for no other reason than that it has intrinsic value (Nash 1989). But even within the group which believes this there is little agreement as to what it means. Accordingly, there are individuals and organizations who would happily break the law to protect the rights of animals, trees and rocks (Nash 1989), and there are cultures around the world who may or may not believe in the intrinsic value of nature but who conserve because of religious, cultural, and ethical taboos and beliefs (Hamilton 1993).

While some would argue whether the debate between "biocentric" vs. "anthropocentric" approaches to resource-use decision-making is totally relevant to sustainable development, there are *believers* on all sides of the debate. As a result, a "middle ground" was discussed in the sequel to the WCS, *Caring for the Earth* (IUCN/WWF/UNEP 1991). This second effort was much more complete and outlined a conservation strategy for the planet that had a more elegantly developed ethical base than the first. It gave nine principles for a sustainable society: 1) respect and care for the community of life; 2) improving the quality of human life; 3) conservation of the Earth's vitality and diversity; 4) slowing the steady march toward depletion of non-renewable resources; 5) work to keep within the Earth's carrying capacity; 6) change personal attitudes and practices; 7) enabling communities to care for their own environments; 8) provision of a national framework for integrating development and conservation; and 9) creation of a global alliance.⁸

⁸Many other lists of principles of sustainable development exist-as given in the appendix to this essay. However, this particular list of the World Conservation Union appears to be one of the earliest and remains one of the best.

Furthermore, similar ethical views of sustainable development are strongly supported by many of the world's religious and spiritual leaders who have sponsored several international meetings over the last two decades, and who convened a special forum at the UNCED in Rio de Janeiro in 1992.⁹ As a result of growing influence and interest, the United Nations Environment Programme named a panel of representatives from all parts of civil society to look into environmental ethics and published several related works (Brown and Quiblier 1994). The World Bank has also sponsored meetings on ethics and sustainable development in which the world's religious and spiritual leaders meet together with representatives from the world's primary development financing agency (Serageldin and Taboroff 1994).

⁹See, for example, the *Moscow Declaration and Plan of Action* from the Global Forum on Environment and Development for Human Survival which was held in Moscow in January of 1990.

Thus, conservation and/or environmental ethics are also a part of the sustainable development equation. David Hales (1986) in a short paper entitled "Toward an Ecology of Liberation" outlined a major reason why: "What is clear is that [we] must identify and highlight conflicts as a method of problem solving. The purpose is not to 'resolve' conflicts, but to make them obvious and understandable as a step toward *solving* problems. It is from conflict, clearly recognized and willfully engaged, that progress and enlightenment grow."

Yet, conservation efforts can create conflict and many conservation efforts fail for that very reason. According to Redford and Mansour (1996) in a discussion of conservation areas, "Conflict is found between communities and park authorities; among communities over resources and their use; between established communities and migrants; between different social and class groups; and within communities over different visions of resources, their use, and the future. Conflicts between men and women, between clans, and between neighbors may be particularly prevalent in resource-dependent communities near protected areas." Conservation areas around the world are under continual threat, national park borders are adjusted to accommodate invasions, and parts of many national parks have been essentially decommissioned- and such conflicts as these are a large part of the cause.¹⁰

¹⁰According to a recent "Parks in Peril" report, 60% of the park sites looked into have detrimental timber harvesting activities, 55% suffer agriculture encroachment, and 34% have reported cattle grazing. Brandon, Katrina, Kent Redford, and Steven E. Sanderson. Editors. 1998. *Parks in Peril*. Washington, D. C. Island Press. 519 pp.

Sustained Yield of Natural Resources: "Sustainability depends on conservation of the natural resource base," say many of the recent followers of sustainable development as if it were something new in the land. But sustainability is an idea with origins in the concept of "sustained yield management" of natural resources-an idea accepted by virtually all natural resource managers in the United States for 100 years and in Scandinavia for over 600 years (Darby 1956). Sustained yield management of a resource has an interest in both conservation and production and consists of policies and technical actions taken to enable a continual flow of a specified product from a resource stock. There are, of course, problems with the concept. Forests are not totally unlike a field of wheat, and every farmer with combine or sickle knows that growing wheat is risky given insects, blights, droughts, hail, rainfall and wind. And that is over a one year cropping cycle. Forest rotations are typically 20 to 200 years and suffer similar hazards. Be that as it may, there are several lessons that can be learned from sustained yield management that have to do with sustainability.

For example, given a clear objective, sufficient finances and trained staff, many forest ecosystems *can* be managed for a continuous supply of timber. One can also manage the same system to achieve a desired level of water quality, harvest wildlife, conserve biodiversity, or provide wild-land recreation, and equally meet an objective of sustained yield management. Rarely, however, can a forest ecosystem provide all of these things at the same time and in the same place without confrontations erupting between the various potential users. And, according to Dixon and Fallon (1988), "What would have been considered sustainable management of an individual resource may actually be unsustainable within the context of the system."

The idea of sustained yield management instructs us on the value of having clear objectives and adequate financial and human resources to meet the objectives of development and, to some degree, its sustainability. However, the concept fails a test of sustainability because of its almost unrelenting dedication to the production of but one commodity-frequently to the detriment of other potential uses. We humans are the ones who must decide which of the many "yields" we want sustained and that is an entirely different process.





The Archives

Sustainability is a goal like liberty or equality; not a fixed endpoint to be reached but a direction that guides constructive change; the realist is as skeptical of claims concerning sustainability as she would be of a claim that perfect liberty had been attained.

-Kai Lee

Basic Literature: This section considers the major founding documents of sustainable development as well as the institutions which look toward its implementation. The word "major" is problematical because some people will disagree with the choices made here saying that everything from the *Bible* to *The Limits of Growth* must be included instead of (or as well as) those we have chosen. Since thousands of documents and hundreds of institutions have either endorsed or scorned the concept, the critics may be correct in saying that our choices were biased, if not a reflection of incompetence. Apart from our bias or incompetence, we agree that other things may have been written that say more about sustainability than the ones we selected, and we also would agree that there are other institutions that may do better work. But the major documents, the ones that continue to influence in large ways, and the institutions having both the mandate and formal support to work on the problem at a global level, are few.

The World Conservation Strategy (WCS). The WCS was published by the International Union for the Conservation of Nature and Natural Resources (Now the World Conservation Union), the World Wildlife Fund (Now the World Wide Fund for Nature), and the United Nations Environment Programme (IUCN/WWF/UNEP 1980). One of the first reports to advance the theme of sustainable development, the WCS stated that the objective of conservation was to "...ensure Earth's capacity to sustain development and to support all life." As a consequence, the aim of the WCS was to advance achievement of sustainable development through the conservation of living resources. It was to do three things: 1) explain the contribution of living resource conservation to human survival and to sustainable development; 2) identify the priority conservation issues and the main requirements for dealing with them; and 3) propose effective ways to improve conservation efficiency and integrate conservation and development.

The Strategy indicates that conservation is the extra ingredient that makes development sustainable and, throughout, makes the case that conservation is necessary if development is to be successful and enduring. Specifically the WCS calls for the conservation of essential "ecological processes, the preservation of genetic diversity and the sustainable utilization of species and ecosystems."

Although many people interpret conservation to mean the preservation of natural balance or equilibrium, the WCS itself understood that such an interpretation makes conservation a meaningless exercise. Nature is something far different from perfect balance, and change reflects its reality a great deal more than does permanence. There simply is no climax or any

static state in the natural world (Botkin 1990).

Our Common Future: Seven years after WCS publication of *Our Common Future*, the report of the World Commission on Environment and Development, moved discussions of sustainable development in a different direction (WCED 1987). Where the WCS was a strategy for conservation, *Our Common Future* proposed long-term "environmental" strategies in three major areas: a) management of the commons; b) peace, security, the environment, and development; and c) institutional and legal changes.

Consistent with these points of emphasis, *Our Common Future* suggested that the difference between "development" and "sustainable development" is a concern for future generations and gave the now famous definition that sustainable development is "development that meets the needs of the present without comprising the ability of future generations to meet their own needs." *Our Common Future* also emphasized the value of conservation. But, reading the report of the WCED beyond these few words, we find that although the report highlighted the idea that conservation is needed for productive development, it also emphasized that development was required for conservation to be successful. More importantly, development was required immediately if wars were to be avoided and poverty eliminated.

Conservation with Equity. *Conservation with Equity* represents a summary of eighteen workshops based on the *World Conservation Strategy* (Jacobs and Munro 1987). Held in 1986 under the auspices of the World Conservation Union (IUCN), the workshops looked into several different strategies that would hopefully lead to sustainable development. Although the strategies contained some things in common, concern for future generations was seldom one of them. Rather, the major worries were that social equity and balanced development take their rightful place in the sustainable development equation. A concern for the present citizens of the Earth as well as those in the future had long been a contentious subject in discussions surrounding sustainable development. One of the more recent and more weighty comments was that by Robert M. Solow (1996), the 1989 Nobel Laureate in Economics in the *1996 Human Development Report*. "Those who are so urgent about not inflicting poverty on the future have to explain why they do not attach even higher priority to reducing poverty today." Thirty five years ago another economist made a similar observation (Tullock 1964): "Are there so few diseased, illiterate, underprivileged today, so few persons who excite our sympathy that we must look to the prospectively wealthy future for a source of worthy recipients of our bounty?" *Conservation with Equity* looked at these questions and concluded, a) that the problems of the world's poor were a major factor in our perceived inability to reach the goals of sustainable development, and b) that conservation would not lead to sustainable development without including equity and balance in the objectives and actions of development.

Rio Declaration and Agenda 21. Both of these are products of the 1992 United Nations Conference on Environment and Development which was held in Rio de Janeiro, Brazil. The *Rio Declaration* contains 27 principles that reflect negotiations between the developed and developing nations, as did the *Stockholm Declaration* in 1972. As a matter of fact, some of the Principles in the two documents are essentially the same. Two issues appear to still be important: Principle 2 of the *Rio Declaration* refers to a state's sovereign right to exploit its own resources in accordance with its own policies, as long as they do not harm the environment of a neighbor; and Principle 3 of the *Rio Declaration* repeats the notion of a sovereign state's right to develop.

Agenda 21 is the action plan of the *Rio Declaration on Environment and Development*. Created to "address the crucial problems of today in order to prepare the world for the next century," *Agenda 21* emphasizes the need to eradicate poverty by giving the poor access to the resources to raise their living standards. *Agenda 21* presents work plans that include goals, responsibilities and cost estimates for a collection of reformulated priorities from several different development sectors and suggests cross-cutting activities common to all sectors: education, capacity building, and civil participation (Keating 1993). Along with the list of actions came a promise of more funding by the developed nations. Despite this promise, however, total official development assistance as a percentage of GNP for the developed countries now amounts to but 0.25% - the lowest since 1970 when the United Nations requested that governments assign 0.7% of their GNP for development assistance.

What is new in *Agenda 21*, however, is that the many sectoral priorities appear together in a single document. They are organized in the same way, and the discussions demonstrate to some degree, at least, an appreciation of the relationships between the various parts. Even more important are the commitments made by governments to allow participation by civil society in the decision-making process and to give special priority to women, indigenous people, and children.

Institutions: UNCED produced more than documents. Specifically it spawned several institutions, three of which are mentioned here: the United Nations Commission on Sustainable Development, the Earth Council, and the National Councils for Sustainable Development. In addition, the Sustainable Development Business Council, a predecessor of the World Business Council for Sustainable Development received major impetus at UNCED and is also discussed here.

Likewise, several events took place in support of the UNCED goals which are important for the future of sustainable development in the Western Hemisphere. Specifically these were a series of "Summits for the Americas" and the "Bolivia Summit on Sustainable Development" which call for a number of cross-sector meetings. A series of ministerial encounters on "water and health" has been initiated as an effort to fulfill these instructions of governments.

The United Nations Commission on Sustainable Development (CSD) was established in December of 1992 just prior to UNCED to: a) ensure effective follow-up of UNCED; b) enhance international cooperation and rationalize intergovernmental decision-making capacity; and c) examine progress in the implementation of *Agenda 21* at the local, national, regional and international levels. The CSD meets annually at UN headquarters in the spring preceded by intersessional meetings of two weeks each. Fifty-three members make up the Commission and over 1000 NGOs are accredited to participate in its work. During 1999, the CSD will consider a number of the various chapters of *Agenda 21* - as it has done since its inception. In the 1999 session it will discuss oceans and seas; consumption and production patterns; and tourism. For the year 2000 work will be dedicated to the subjects of integrated planning and management of land resources; financial resources, trade and investment; and economic growth and agriculture. Work for the year 2001 will look at atmosphere, energy and transport; international cooperation for an enabling environment, information and civil participation for decision-making. Reports and other information on the Commission on Sustainable Development can be found on its website: <http://www.un.org/esa/agenda21/csdup.htm>

National Sustainable Development Councils (NSDC). Agenda 21 recommended the establishment of National Sustainable Development Councils and there are now approximately 130 with some degree of organization. The NSDC were to help implement *Agenda 21* at national and local levels. Latin America and the Caribbean currently have 21 NSDC registered with the Earth Council located in San Jose, Costa Rica which acts as the network coordinator. NSDCs vary in structure, style and mandates by country. Ideally they would include representatives from all sectors of government, all governments (local, state and national), business and industry, women's groups, indigenous peoples, labor, etc. Their purpose is to integrate goals and policies and catalyze actions inside and outside of government. The Councils should represent a diversity of opinions, advocate integrated policies, be transparent, promote participation, search for consensus, and help in the resolution of disputes. They generally serve as an independent voice and should not be an operating agency of government. Further information on how to establish and maintain NSDCs can be found on the NSDC network website:

<http://www.ncsdnetwork.org>

The Earth Council. "The Earth Council is a non-governmental organization created to promote and advance the implementation of the Earth Summit agreements." It has a council of 18 members named from the political, business, scientific and NGO communities from around the world (Tryzna et al. 1996). The Earth Council works to strengthen multi-stakeholder participatory mechanisms; facilitates investment capital for programs and projects; will develop a regional "Ombudsman" project to serve as a framework to mediate conflicts of a trans-boundary nature; and it is currently defining a legislative agenda for sustainable development. The website for the Earth Council can be found at <http://www.ecouncil.ac.cr>.

The World Business Council for Sustainable Development (WBCSD). The World Business Council for Sustainable Development is a coalition of 125 international companies committed to the principles of economic growth and sustainable development. It was formed in 1995 when the Business Council for Sustainable Development in Geneva combined with the World Industry Council for the Environment which was an initiative of the International Chamber of Commerce. The objectives of the Council are a) to be the leading business advocate on issues connected with the environment and sustainable development; b) participate in policy development in order to create a framework that allows business to contribute effectively to sustainable development; c) to demonstrate progress in environmental and resource management in business and to share leading-edge practices among the members; and d) to contribute through a global network to a sustainable future for developing nations and nations in transition (Kerr 1997). A major effort of the WBCSD is "eco-efficiency" which looks at how resources can be used most efficiently to deliver products and services to the customer and which has a goal to create more value for the consumer while doing less environmental damage; and, it is concerned with resource use and environmental damage at every step in the chain, from resource extraction through ultimate disposal or re-use in some form or another (Bidwell 1998). Latin America has a regional chapter which represents over 300 companies, eight national councils, one bi-national council, and one sub-national council. Information on the Latin American Branch can be found at <http://www.wbcstdla.org.mx>.

Western Hemisphere Summits. An important part of the response to UNCED is the Summit of the Americas process. Two full summits of the Americas (Miami, 1994 and Santiago, 1998) and the specialized Summit on Sustainable Development (Santa Cruz de la Sierra, Bolivia in 1996)

have been held to date. This latter Summit assigned a special role to the Organization of American States and this has resulted in the establishment of the Inter-Agency Task Force on Follow-up to the Summit for Sustainable Development (IATF). Perhaps the most important conceptual output to date of the IATF is the call for a series of cross-sectoral forums which may prove critical in advancing the goals of sustainable development at the hemispheric level. A year after the Summit for Sustainable Development the OAS Secretary General proposed a mechanism to advance both the tenor and the level of debate (OAS 1998).

The Secretary General argued that some of the most difficult challenges in implementing the initiatives approved in Santa Cruz occur between different productive sectors. Cross-sector issues are complex to resolve because they require coordinated actions of different branches of government at all levels and must also gain the support of financial institutions. Dialogue at the interface between sectors has the effect of engaging higher authorities of government, which are needed to address problems or conflicts that cannot be resolved within the individual sectors.





Roadblocks

If language is not correct, then what is said is not what is meant. If what is said is not what is meant, then what ought to be done remains undone. If this remains undone, then morals and acts deteriorate and justice goes astray. Hence, there must be no arbitrariness in what is said. This matters above everything.

-Confucius

The Sustainable Development Puzzle: We are faced with two problems: the first is to determine why sustainable development is so difficult to understand at a practical level and the second is to discover what it is about sustainable development that makes it better than just plain development in the first place. Literature on these topics seems to suggest that at least some of the answers to both problems reside in whether or not the conflicts created by the development process are discovered sufficiently early and treated sufficiently well.

For example, political agreement, cost efficiency, local input, and sectoral integration are all important pieces of a development decision and decisions taken which ignore any of these pieces often lead to failure (Buckles 1998). Seldom, however, do development actions fall short because resources are inadequately assessed or because the needs are misread. Failure occurs because one or more of the many conflicting demands made by humans on the systems they share are not discovered early enough, are known but not included in the analysis and treatment, or, there is no consensus gathered around the process, the product, or both. The reactions of unsatisfied or disenfranchised affected parties (including a significant portion of the political establishment) are what make development proposals and actions fail. They do so because of unresolved conflict.¹¹

¹¹There are certainly other reasons why development fails, or, better, why "de-development" exists. Among these are war, civil strife, corruption, xenophobia, arrogance, incompetence, and the occurrence of natural hazardous events. It is interesting that many of these causes of "de-development" are also amenable to the methods used to reduce development conflict: transparency, participation, integration, dispute resolution, and equity. For a short discussion of these topics and their relationship to sustainable development see Saunier, R. E. 1999. "Sustainable Development, Global Sustainability." In, *Encyclopedia of Environmental Science*. Edited by David E. Alexander and Rhodes W. Fairbridge. Dordrecht, The Netherlands. Kluwer Academic Publishers. Pp. 587-92.

This is important since failed development actions are examples of unsustainability. Conflicts in development can seemingly come out of nowhere. However, a look at the current debates on sustainable development suggests that, rather than coming out of nowhere, they follow from many of the most widely accepted beliefs, definitions, and concepts of sustainable development

itself.

Definitions: Prior to the Earth Summit, numerous definitions of sustainable development were offered but most often they represented variations of the definitions given in the report of the Brundtland Commission or in the *World Conservation Strategy*. On the other hand, post Earth Summit definitions of sustainable development are conspicuously absent; speakers and writers on the topic have become embarrassingly adept at skirting the issue altogether. They need not do so, however, because finding a consensus definition of *sustainable development*, at this point in time, is simply not important. What is important is the extensive list of sustainable development's most cherished words, concepts and understandings that unintentionally mislead because they are incomplete, misunderstood, or totally in error. They are a guaranteed source of conflict.

Human Environment. For example, "environment" is perhaps the most often used yet least understood term employed in the search for sustainable development. The word has been misused for decades, of course, and only recently have writers begun to use it in a way that describes what it has always meant: anything outside an object of interest that influences the health, welfare and behavior of that object at a given moment in time.¹² Thus, like all environments, human environments are predominately local, always personal, and continuously transitory-and there are a great many of them.¹³ Any definition or use of the term "human environment" that faithfully describes its concept will show that, outside of naming a specific time, a specific place, and a specific owner, something called *the environment* does not exist. More importantly, solutions to the problems of environment and development obligate us to understand the term as a plural rather than as a singular. "Who's environment?" is a very important question. It is the question asked by the developing countries in Stockholm and again in Rio de Janeiro.¹⁴ To answer that there is only "the environment" hides conflict instead of managing it, misguides development choices, and, therefore, misdirects energy and resources.

¹²A human environment is "the compendium of natural, social, and cultural values existing in a given place and moment that influences the material and psychological life of man" (Pequeño Larousse) and "all the conditions, circumstances, and influences surrounding and affecting the development of an organism or group of organisms" (Webster).

¹³See Hawley, Amos H. 1986. *Human Ecology: A Theoretical Essay*. Chicago, Ill. The University of Chicago Press; Gallopin, G. 1981. "Human Systems: Needs, requirements, environments and quality of life." Lasker, G.E. editor: *Applied systems and Cybernetics*. New York. Pergamon Press; and Platt, R.B. 1971. *Encyclopedia of Environmental Science*. New York. McGraw-Hill.

¹⁴See the discussion above on ***Environmental Protection*** pages 7-8.

Environmental quality has to do with how well the specific environment where we happen to find ourselves satisfies our needs. Thus, because each of us lives in a different and changing environment, environmental quality can be good for some and poor for others. Some environments are rich and rewarding. Others are totally lacking in the means required to satisfy human needs (Saunier 1991). Furthermore, without substantial effort to the contrary, work to improve one individual's environment will deteriorate the environment of another. Thinking of environment as a plural allows isolation and treatment of problems. Thinking of environment as a

singular confounds the issues. The first responds as much as possible to the complexity of our universe, while the second oversimplifies to an extreme. The first allows us to understand the sources of conflict, the second hides conflict until it explodes and becomes unmanageable.

What about "the environment" of planet Earth? Does it exist? Most certainly. However, that environment has little to do with the way most individuals or groups perceive the problems found in their own private and local environments (Saarinen 1974). What about the ozone hole and climate change? Are they not environmental problems? Certainly they are. However, the citizens of island nations and extreme latitudes are much more concerned about these issues than are those individuals living in areas that are higher in elevation and nearer the equator. They live in different environments altogether.

Nature and Natural Resources. One of the myths surrounding the issue of sustainable development closely ties sustainability to an assumed "balance of nature" where disturbances initiated by humans lead to disharmony, development failure, and, ultimately, chaos. However, science has discovered this balance, when it occurs, to be highly dependent on the scales of time and space. Indeed, for all practical purposes, this kind of balance does not last and development must either adapt to change or fail. Change takes place in any of the *goals* of development as well as in the *resources* available to service the demands humans make on the systems that surround them. Because nature is always changing, adaptability of development is as important for its sustainability as is conservation of the status quo.

Discussions of the use and protection of natural resources have been around for as long as humans have sat around campfires. Both human need and natural resources have evolved considerably. For example, Allen (1955) cited the natural resource groupings at that time as, "waters, soils, forests, grasslands, wild-animal life, and minerals." He proposed his own classification of sixteen (Box 1) and the tendency to disaggregate, mix, and match continues (Box 2). Today, a list of the "resources" available from any relatively large ecosystem would contain at least a hundred and a new list needs to be developed for each and every ecosystem as it is being studied or treated. This is because the definition of "resource" is very much dependent on the needs and wants of a given individual or population and not just on the characteristics of the structure and function of the ecosystem in question (Meganck and Saunier 1983).

Box 1: Natural Resource Grouping according to Allen (1955)

| | |
|--|---------------------------------------|
| Inexhaustible natural resources | Human powers |
| The Atmosphere | Those of the body |
| Water in its cycle | Those of the spirit |
| Replaceable and maintainable natural resources | Irreplaceable natural resources |
| Water in place | Minerals |
| Soils | Mineral fuels and lubricants |
| Land in its spatial sense | Miscellaneous non-fuel, non-metallics |
| For human activities | Land in natural condition |
| For the scene and other amenities | Natural study areas |
| Forests | Specimen wildernesses |

| | |
|-------------------------------|--|
| Forage and other cover plants | |
| Wild animal life | |

For these very reasons natural resources are today variously called "environmental services" (Dasgupta 1982), "ecosystem services" (Ehrlich and Moony 1983), "natural goods and services" (OAS 1984), or "environmental functions" (DeGroot 1987). Making a distinction between resources and services allowed two important advances in environmental management: a) the economic valuation of specific services that before were impossible to make since they were confounded by their aggregation; and, b) the identification and management of conflicts arising from the design and execution of development projects based on but one or a few of these services.

Economic valuation of specific services, something that has tremendous value at the level of local studies, has led to oft-quoted figures for the value of "the world's ecosystem services and natural capital" of between 16 and 54 trillion US dollars per year (Costanza et al. 1997). However, the figures are also just as often criticized by economists for the authors' supposed use of inappropriate methods of analysis, and by conservationists who suggest that the figures are a serious underestimate of infinity. Most often though, the study is criticized as being unrealistic in terms of how political decisions are made (Bauer 1997)-the study forgot about conflict and its management.

The need to disaggregate groupings of natural resources in order to locate potential conflicts is not a new idea. Herfendahl (1961), for example, looked at the meaning of natural resources in 1961 and correctly decided that statements regarding the use or conservation of a specific aggregated resource group would lead to problems:

Consider, for example, just a few of the various parties with at least partially conflicting interests in the way land and streams are used. There is irrigation vs. power, irrigation vs. domestic and industrial water use, uses requiring dams vs. the scenery, fishing, etc., associated with flowing streams, in particular the whole complex of benefits associated with flowing streams vs. domestic and industrial water use. There is the sand and gravel pit or the clay pit with its ugliness and sometimes dangerous pools of water vs. the residential area with its small children, logging vs. scenery, highways bringing a greater density of people to remote areas vs. solitude, logging and grazing vs. the people downstream who want a slower runoff, and so on.

He also correctly observed other reasons why conflicts occur: a resource for some is not a resource for others, a resource in one area may not be a resource somewhere else, and what is a resource now may not be a resource later and may not have been a resource at an earlier time. As can be seen, the concept of natural resources is now severely outdated and the emerging paradigm is telling us so.

Ecosystem Structure and Function. Ecosystem services arise from ecosystem structure and function. Ecosystems are arbitrarily defined pieces of space having biotic, physical, and chemical components (called structure and function) which interact to establish networks of information and energy flow, and cycles of materials (Smith 1972). Ecosystem structure and function, in turn, are both the foundation for, and often the result of, human efforts at development.

Both natural and human-derived components and processes are present to varying degrees in an ecosystem. Human activity can impair or improve any of these components and processes. When an ecosystem attribute, naturally occurring or human contrived, is used to improve or maintain human life quality, it is a service (Box 2). The process of photosynthesis, for example, produces food and fiber; water in its cycle can be used for drinking, irrigation, power generation, temperature control, or the fulfillment of aesthetic or recreational interest; and information is stored and transferred in the genetic makeup of individuals and populations, in libraries and classrooms and in the relationships we have with one another.

Manipulation of all of these to improve life quality (including manipulation for the objectives of conservation) is what we know as development. The problem is that the structure and function of systems are integrated and anything short of their integrated manipulation will create conflict. For example, water can be used to dilute contaminants or wastes and it can be used for human consumption or for bathing. However, both uses at the same time in the same place is impossible if life quality is to be improved. Only an integrated response will suffice.

Box 2: Potential goods and services arising from the natural components and processes of ecosystems (Meganck and Saunier, 1983).

| ECOSYSTEM OPERATIONS, MAINTENANCE, ADAPTATION AND EVOLUTION | |
|--|---|
| Potable water: surface, ground | Early warning system: weather, climate change, |
| Industrial water: surface, ground | Hazardous events |
| Nutrient distribution: floods, dust, sediment, transport | Moisture modification |
| | Temperature modification |
| Photosynthesis | Light modification |
| Respiration | Filtration of ultraviolet and other radiation |
| Oxidation | Storage of genetic information |
| Adaptation | Other scientific values |
| Self-regulation | ECONOMIC SERVICES |
| Mineral cycling | Energy sources: wind, solar, hydro, tidal, |
| Habitat for local land, air and aquatic animals, insects and other life forms. | Biomass, Geothermal |
| Feeding, breeding, | Dilution of contaminants |
| Nursery shelter areas | Decomposition of contaminants, oxidation, evaporation, dissolution |
| Habitat for migrating land, air and other life forms. Feeding, breeding, nursery shelter areas | Transport of contaminants by wind and water, |
| NON-TANGIBLE GOODS AND SERVICES | Animal consumption, dilution by air and water Storage of contaminants |

| | |
|---|---|
| Windbreak | |
| Shade | Erosion control |
| Recreational use of water: swimming, boating, water skiing, sailing | Sediment control Flood control |
| Recreational use of land: hiking, climbing, sports | Other control of water regime Ground water recharge |
| Recreational use of air: flying, gliding, parachuting, hang-gliding | Space for urban, industrial, agricultural occupation, roadways, canals, airports |
| Recreational use of animals: sport hunting fishing, insect collecting, photography, observation | Physical support for structures |
| Recreational use of ecosystems: sightseeing, tourism | Climate control and protection |
| Scientific tourism | Disease control and protection |
| Exploration | Storm buffering |
| Historical values | |
| Cultural values | |

Concepts: Thus, sustainable development is difficult to define because of conflicts that appear within and among its most basic tenants as well as in the methods, we, its proponents, put forward. This, of course, doesn't mean that what we propose is not useful; it only means that the differences need to be acknowledged and ways sought to overcome them.

Bases. Denis Goulet (1986), for example, suggests that development decision-making is flawed because of a failure to confront conflicts between three different "rationalities" that compete in decision-making. These are: technical, political, and ethical, each of which will try to impose its view over the others during the decision-making process. If these conflicts are not recognized, bad decisions can be made and development efforts will fail.

According to Goulet, technical actors include economists, agronomists, engineers, planners, and financial experts, among others. Their view "is to get things done, control nature, perform a concrete task, and to eliminate any opposition to meeting their assigned goal."

The political actors are completely different in that their goal is to "preserve their institutions." To do this, compromises are often made with any and all: opposition, support groups, constituencies, etc., and if a project is criticized, it may well be dropped in order to preserve the institution. The ethical rationality has "values as its goal and its proponents create, nurture and defend values felt to be worthy for their own sakes." They make moral judgements about what is good and bad and right and wrong and seldom, if ever, back away from them. Again, according to Goulet (1990), if the conflict is not confronted, the result is "technically sound decisions which are politically infeasible or morally unacceptable, or, in other cases, ethically sound choices which are technically inefficient or politically impossible." The problems of the sustainable development movement are created in large part because it contains all three of these

rationalities - sometimes within the same project or policy-and it is why development projects, and their sustainability, have such difficulty. In addition, it is why the *process* leading to development decision-making is so important. Each of the three positions, of course, has something to contribute to development. The differences between them, however, are not nearly as harmful as not allowing a debate between their proponents, or in being unaware that the differences exist in the first place.

Exclusivity. Similarly, according to Pannell and Schilizzi (1997), the three most commonly listed "principles" of sustainability are mutually exclusive: a) protection of "nature" for its own sake, b) efficiency in the use of resources; and c) intergenerational equity. However valid and well-seen these may be as individual objectives, they cannot be offered as a package deal. For example, use of the first and second of these principles, creates a conflict between "intrinsic" and "extrinsic" values. *Extrinsic* values of an environment exist because certain of its attributes satisfy human needs. This is true even if one of these attributes is an "existence" value, i.e. knowing that something exists regardless of any other use, satisfies a need. *Intrinsic* values are those that exist without being useful to humans. Consequently, a decision in favor of something having intrinsic value can mean a decision against our own welfare.

The third principle, that of "intergenerational equity," likewise makes sustainability difficult to understand. Of course, the problem of intergenerational equity and resource use has always existed but it has generally been ignored because the unknowns make practical application impossible (Brown Weiss 1983). For example, one must ask "Equity of what?" Is it opportunity, income, welfare, rights, resources or something else? Even if it is equity in terms of available options with regard to the "resource base," misunderstandings arise because, again, a resource for one person is not a resource for another; a current resource may not be a resource later and may not have been a resource before; and, a resource in one place may not be a resource somewhere else.

The above discussion suggests that the quality of an environment depends on the demands being made on it as much as on the attributes that it has. Demands for intergenerational equity seem to deny the differences in human values. And, although an answer as to how to accomplish intergenerational equity has been assigned (conservation), the problems of who? what? where? and when? are nowhere near resolution (Romm 1993).

Scale. The dimensions of time and space, levels of government, size of financing, statistical relevance, degree of complexity, area and intensity of management, and frequency and density of occurrence, all have to do with scale and there will be winners and losers regardless of the choice that is made. Things must be looked at and interpreted where they are on a scale and not where we think they may be by themselves. Doug MacCleery (1994) gives an example: "...reducing federal timber harvesting in the Pacific Northwest to protect the northern spotted owl did not eliminate the impact of timber harvesting. It merely transferred it to ecosystems somewhere else-to private lands in the Pacific northwest or to the U.S. South, to British Columbia, or overseas. It also resulted in higher consumer prices for wood products and increased the use of wood substitutes, such as steel framing, which requires considerably more energy to produce than does wood, therefore putting more CO₂ into the atmosphere."

The schizophrenia of environmental impact legislation is also a reflection of a problem of scale. Many such laws begin by saying that the objective of this specific law is to "protect the global

environment" but the instruction given as to how this is accomplished is to ask the local population and let them help decide. Do we really think that if five and a half billion of us give our opinion we would reach a correct decision for the "global environment?" No. Local populations are consulted because it is the environment of a local population that will receive the brunt of the impact. Because of scale, the world is a much more complex place than any of us likes to think. And it doesn't get any easier when we attempt to launch our own interests into the future.

By the same token, sustainability is often broken down into its supposed parts, of which three are frequently suggested: cultural sustainability, economic sustainability, and ecological or environmental sustainability. However, use of a three legged stool to support sustainability is just not sufficient - especially when "ecological sustainability" is so suspect.¹⁵ Each of these legs needs to be disaggregated to consider the place, time, development concern, perceptions and values of the individuals being studied because they are often mutually exclusive.

¹⁵"Ecology" and, therefore, "ecological" has a definition that many in the environmental and sustainable development movements do not understand. As a consequence, the word is given a number of different meanings by those who use it according to their own interest. For example, in the context given here, does "ecology" mean nature, natural resources, environment, natural history, ecosystem structure and function, relationships, or green advocacy?

Science. Science, and how it is used, also creates a good bit of discord regarding how we collectively understand sustainability. For all its considerable value, science is fallible and scientists are human. Truth is hard to come by and if and when you get an answer from a scientist, it is neither value free nor uninfluenced by personal bias (Pouyat 1999). The scientific method is, of course, a tremendously powerful and useful tool that has enjoyed immeasurable success. Scientists, however, are aware of the frailties of the scientific method. They insist on "peer review" so that errors, in time, can be corrected, and they understand that scientific conclusions represent only observations and not "truth."

This is difficult for politicians and the media to understand and, consequently, they expect more from science than scientists can give. Less than 100% assurance regarding the truth of the matter doesn't fit well with the politicians who need to project self confidence and conviction; nor does it suit the media and their limit of column inches, sound bites, and reader/viewer attention span. Science cannot, on demand, give short and pithy statements concerning the events of the day. Consequently, the politicians and media do it themselves by removing qualifiers and forgetting statistical inference. Or, they go elsewhere to find an answer and confuse non-scientists for scientists (Pouyat 1999). Since representatives from NGOs or policy research think tanks are always conveniently available, they are chosen to fill in. However, although these representatives may look like scientists and though they may even speak science, they are generally not scientists. Nevertheless the politicians and the media like them because they give answers that are firm, and on demand.

Advocacy science is customarily the work of think tanks supported by special interests. Other advocacy scientists are around, however. For example, economists are now part of the conservation movement despite age-old animosities. They arrived as "ecological economists" who, as the name implies, are often more economist than ecologist.

Ecological economists understand that the original definition of economics implied an

understanding, a *caring* for and *management* of human households, whereas ecology implied an *understanding and appreciation of the interrelationships* within nature's "household." These definitions have important elements in them, but they are misleading. Ecology, to be sure, is the study of households but neither its derivation nor its practice indicate a dedication solely to the study of "nature's household." Indeed, ecology successfully looks into many things beyond "nature." After all, human ecology is a thriving discipline that includes the urban and industrial facets of human existence in its studies.

The meaningful differences between the two terms are that ecology tends more toward the *study* of those "households" while economics tends more toward the *management* of those same "households." Understood in this way, the interesting connection between the two disciplines becomes quite clear and it is the one that sustainable development is beginning to understand. That is, management of a household (ecosystem, region, state, nation, project area) is more equitable, more effective and more efficient if it is based on findings from a study of that household.

An equally important distinction is that management (economics) presupposes "objectives" and we manage a household to meet a set of objectives. On the other hand, study (ecology) suggests "objectivity" and the effort, however difficult, is to impartially describe or predict a set of phenomena. We ought not confuse the two, lest we allow our objectives to overly influence the objectivity of our studies.

Nevertheless, advocacy science has done a great deal to further the ideas of sustainable development and, no doubt, it will do more. The value is that its proponents can set research on new trajectories, bring needed debate to the arena, and discover useful ways to solve at least some of the problems they see as relevant.





Toward Sustainability

Sustainability: It's not a topic, its an attitude.

-Tern Meyer Boake

Sustainability: There are two parts to sustainable development: one is abstract, a guiding principle that all of us seem inherently attracted to. The other is much more worldly and complicated - so convoluted that we have spent the better part of 25 years trying to unravel its secrets. We have reached the point now where some of us stand eagerly awaiting a one time event that will reveal the full truth. A few blindly move forward to accept fact and fiction with equal ease, as if the truth were already known. And others have given up completely.

Obviously, none of these is a correct response. What does seem profitable, however, is to separate the two parts of sustainability for now, believe the abstract to be possible, accept what we know of the mundane, learn from the mistakes, be open, discuss it, organize, and do it. The alternatives, the ones based on what we suppose we know rather than on what we do know; or the ones that respond to pressures - be they from the despoilers, or from the conservationists - all lead us toward a future unknown. Try as we may, it is impossible to say what makes a development activity sustainable; whether the time scale is three, thirty, or three hundred years, it is out of our control.

For example, were one to ask which is the better illustration of sustainable development, the Aswan High Dam or extractive reserves, the response would be obvious. But two recent studies are instructive on the issue. After 35 years, the Aswan High Dam, one of the most vilified projects in history, shows steady and growing economic success and social equity with little of the negative environmental impacts originally predicted (Biswas 1992). On the other hand, after only three years, the extractive reserves of the Amazon Basin which many of us felt were a major step forward in saving the forested ecosystems of the tropics, were shown to be increasingly subsidy-dependent, socially imbalanced, and self destructive (Browder 1992).

Nonetheless, since the 1960's the environmental movement has made significant conceptual contributions to sustainable development apart from those initiated at UNCED. It broadened the development agenda to include air, water and soil contamination, biodiversity conservation, health in the work place, natural hazards, appropriate technology, cleaner production and the need for environmental impact assessments; it added systems thinking to the development process, and showed that integration of development actions was the proper and necessary response to working in integrated systems. Equally important is a somewhat newer theme, "environmental justice" which arises as a concern that the poor and disenfranchised suffer not just the wretchedness of their own environments but that they are threatened further by both economic development, and environmental improvement elsewhere (Pulido 1996).

The search for environmental justice - that all people are entitled to a healthy environment within which they can fulfill their potential - is a historic and acknowledged principle. Virtually all major international instruments on the rights of humans begin with essentially the same words. For example, the Stockholm Declaration: "Man has the fundamental right to freedom, equality and adequate conditions of life, in an environment of a quality that permits a life of dignity and well-being";¹⁶ and the Charter of the Organization of American States: "Convinced that the historic mission of America is to offer to man a land of liberty and a favorable environment for the development of his personality and the realization of his just aspirations;..."¹⁷

¹⁶Principle 1 of the *Declaration of the United Nations Conference on the Human Environment*.

¹⁷First rationale in the Preamble of the *Charter of the Organization of American States*.

As always, there appear to be at least two opposite ways to approach justice. The first of these is oriented toward methods of "command and control" in which a centralized authority sets and enforces standards of environmental protection. It is heavy on science and regulations (EPA 1992). The second, and perhaps the more important to sustainable development, alters the development process to include such things as transparency and the participation of civil society in decision-making-both of which are the result of the environmental movement's questioning how development decisions were made.

That is, historically, development was a response to three "economic" questions: What are the resources available to improve life quality? How are they to be manipulated? and For whom? The environmental movement in particular insisted that a fourth question be answered that adds a new dimension to the development process: Who is to decide? Increasingly, therefore, development, to be sustainable, will require the participation of those who have a stake in what a development action is to accomplish and in what its side effects will be (Saunier and Meganck 1995).

Reconciliation: Obviously, something different from the normal style of development is required if the hope and potential of sustainable development are to be realized. Answers to the question, "Who is to decide?" are key to this effort. Even a cursory look at what is happening leads one to the conclusion that the winds are changing. The verbal contests held in international forums still reflect chauvinistic and combative concerns over funding and sovereignty; conservation NGOs and advocacy science remind us that resource loss cannot go on forever; and, with some adjustments, all of this is needed. But conversations among many inter-governmental and government bureaucrats, and the actions of citizens working together, reflect something else indeed.

Whether stated as such or not, that something else appears as reconciliation- an admixture of several different processes-none of which enters the confusing controversies about the trouble we can get ourselves into, or of which definition most accurately reflects sustainable development. Reconciliation pays attention to today, to facts, and to relevant concerns rather than to theory and special interests. It prepares for the future and it does so in large part by encouraging open discussion and debate far beyond what previous discussions of sustainable development were able to do (World Bank 1999).

Three methods which can lead to reconciliation are increasingly discussed in the sustainable development debate: Integrated planning, conflict management, and a more sympathetic look at humanity's relationships to the rest of nature.

Integrated Development Planning. The theme from *Agenda 21* to be emphasized by the UN Commission for Sustainable Development in the year 2000 is integrated land use planning. The interest arises from "Action 10" which looks to "...resolve conflicts and find more effective and efficient ways of using land and its natural resources" (Keating 1993).

All development planning has essentially two purposes: a) to meet the stated objectives within the fixed limits of time and budget; and b) to minimize the conflict that accompanies all efforts, large and small, for change initiated with the design and execution of a plan or strategy. Methods have been designed to do these things efficiently and effectively. They include a spatial emphasis, integration, and iteration and within these, civil participation, transparency and a search for equity—all of which are very much related. An example of integrated planning that now carries with it ample experience is "integrated regional development planning" (OAS 1984, Asian Development Bank 1986).

The products of integrated regional development planning (IRDP) are equitable and have a large degree of consensus. Its methods help to confront and overcome the conflicts encountered in the design and implementation of the strategies, programs and projects required to meet a development objective. More broadly, these procedures help to formulate spatial development strategies that contain projects and programs that are compatible with one another as well as with the socio-economic, cultural, political and historic realities of the region of interest. Negative impacts are reduced to a minimum because of the consensus built up during formulation of the development strategy and its associated projects and programs (OAS 1987).

Spatial Emphasis is one of the methods. Historically, most development planning has been sectoral and performed to meet sectoral objectives. IRDC makes the cut spatially rather than sectorally and allows each sector having an interest in the region to take part as equals in the planning exercise. Emphasis today leans toward a "watershed" as the preferred piece of space to study and manage. But a region can be anything; it depends on the objective of the effort and the potential sources of information. For example, in planning a region where water is of primary importance, the space of interest may well be a watershed or river basin. But a region may also consist of all or part of a state, department, province, or nation; all or part of a river basin, defined ecosystem, or biome. How one distinguishes a region's borders matters less than does an understanding of what happens within those borders. However circumscribed, that space must be treated as a system where inputs and outflows, as well as its contents and internal processes, are understood and considered (OAS 1978). In this way, the demands of individual development sectors and specific interest groups can be cared for with more balance and precision.

Integration is the key to all of this. Although integration is a concept that often receives a bad press because it is thought to bring with it a loss of control, compromise, and central planning, it is none of these. It is true that consensus strategies must be reached by the affected parties - the "stake-holders" as they have come to be known - but these are most often public agencies. The causal chain is fairly simple: Humans have needs and wants (demands) which they attempt to satisfy. Groups of individuals that have the same or similar interests organize themselves for their own promotion and protection. As groups become stronger and more organized, pressures

are brought to bear on governments to promote and protect these interests as well. Eventually, if a group becomes strong enough, a public agency is created. Done correctly, integration can attend to individual sector needs without creating problems that the project itself cannot handle.

The process also encourages participation by those normally left out of sectoral planning: the poor, native peoples, women, elderly, and young among others. Though planning is generally done for governments' IRDP *invites* participation and input from citizen's groups both within the region and elsewhere. All such interests, regardless of size or location, are important for two reasons: the information and ideas they can supply; and the power they can engender to make the development activity inoperable if it conflicts with their own ideas about what should happen in that given piece of space.

A region is a system and all the actors in a region share it as a system. The smaller the region the more closely related the demands its residents make on its resources. Relationships take the form of competition for the same service and of interference with one another's activities to appropriate different services. Other relationships can be positive and supportive. Activities prescribed by a strategy, program, project or policy must be designed to minimize the negative impacts on any affected parties and make the development action equitable. Marginalization of the poor, for example, creates inequities. Such policies are known today to be self-defeating (Annis, 1992).

Obviously planning cannot be done by a large committee, even if sufficient time and funding are available. *Iteration* substitutes for this committee. It is a process whereby the needs and ideas of many are considered, evaluated and reduced to only a few that are significant to the stated objectives of the exercise. With iteration, planning proceeds in phases—each phase more specific and detailed than the last. In addition, iteration keeps decisions from being sealed too early and helps focus the final stages of planning. At the end of each iteration, decisions are made to proceed to the next phase, revise the work plan, or even cancel the process. These methods help to bring about equity and consensus in development activities within a region shared by individuals and groups having a variety of conflicting needs and values.

Conflict Management. Conflict. With it we go nowhere, without it we go backwards. A necessary evil, an irreverent good. A requirement for progress; a costly way to clarify anything. We live in a world of inequities in information, finances, organization, abilities, and opportunity. Conflict is a simple, if disagreeable, way to find out where, and how profound, these inequities are.

Some people have an overpowering presence while others of us have little or no representation at all. Our world is one of hidden agendas and unarticulated, though strongly felt, needs. Human values are as diverse as personality, and all of them are important. Memories are long; history carries more weight than it should. Conflict is everywhere and, though often insane, it tells us that inequities do exist, that noise makes problems easier to identify, that the warring fields must be leveled, and that despite all this, there is value in debate. Hence, conflict management is not just a means to resolve disputes. It also includes an effort to use the relationship uncovered by a conflict to engage in productive debate, to better understand just where the winners and losers will be, and to look for new and different solutions to the problems that have been discovered. Conflict management may well be the single most important ingredient of sustainability that we know of.

I have a friend who is a labor relations attorney and I once asked him about conflict management. He said "For something so difficult it is really very simple. It's like a stepladder where if the problem is taken care of on the lower rungs, the more the parties win and the less there is to loose. Each step up the ladder changes that equation. The first step is cooperation. If that fails, the next is coordination and then it goes to negotiation. If they provide no progress you move on to arbitration. If that fails, the two sides look for allies, go to war, and nobody wins. It's a long way down when you fall off the top of a step ladder and it doesn't matter which side lands first." Oversimplified, but instructive nonetheless.

Further, according to Dudley Weeks (1994), Professor of Conflict Resolution at American University, conflicts are seldom what they seem. He lists four perceptions of conflict that need to be changed: a) that "conflict is always a disruption of order, a negative experience when in fact it is an outgrowth of diversity that can be used to clarify a relationship and additional ways of thinking; b) that conflict is always a battle between competing and incompatible self-interests while forgetting the presence of needs or goals that the two parties might actually share; c) that a conflict defines the entire relationship when the reality is that it is only one part of a complex relationship; and d) that the conflict involves two absolutes, between right and wrong or between good and evil when, many "values" are really subjective preferences. Conflicts that are understood and well managed can help lead us out of the maze of unsustainability.

How does this happen? One way is through the development and use of traditional, culturally based institutions to "build a culture of negotiation" which allows a reduction in the level of tensions through education as to the basic reasons for conflict- inequities, differing needs and values, and an inadequate information base from which to work; where local capacity can be created to support local mechanisms and institutions that contribute to reconciliation; where space can be granted for "dialogue and the strengthening of relationships between representative bodies;" and, where the "institutionalization of joint problem solving processes and techniques can be taught so that the representatives of different interest groups can mutually explore their respective interests, basic needs and aspirations" (Soto 1995).

Calling it Home. It is remarkable what you can learn from students. I asked a group of them once to develop a common list of human needs. They discussed the idea for two hours and gave me an inventory not unlike those of the experts who had spent a considerably longer period of time working up their list (McHale and McHale 1977). But one of the items was stated in a way that I will always remember: "There is a need for individual humans to find his or her place in the Universe." It is the old "Where did we come from?" "Why are we here?" and "Where are we going?" questions dressed up in student's clothing. Discussions on sustainable development suggest a variety of answers that may or may not last for all time. Most of them call for a scientific and spiritual reconciliation with nature.

Science has its perspective. Very simply it is that humanity obeys nature's laws, but the description of how depends on the scale of analysis. For ecology, we are an element of our community, a link in a food chain, a sink in a pattern of energy flow; one part of an intricate set of increasingly larger ecosystems. For biology, we are born, we live, we die, we decay - just like every thing else. For physiology, there is a chemistry of memory and thought just as there is a chemistry of rocks. For astronomy, the universe is one and we are but a very small part of it. For physics, there is no "we" other than a few atoms arranged a bit differently from an infinite number of other atoms in time and space. Of course, there are times when scientists single us out as

different, but that is only for study and not for belief. It all sounds very cold to the non-scientist.

But science does not speak for the spiritual. That is for us, as individual humans, to do. It is we who must find our place in the Universe. Within the numerous groups that work for sustainability, some will say that they have an ethical as well as a biological relationship to Earth and all of its inhabitants. The Earth is our home, nature our family, and, like our family, all the elements of nature have intrinsic worth (Nash 1989). Others of the community (MacCleery 1994) will say that the elements of nature have value only as they are useful to humans, and that the difference between a house and a home is a bit of chaos; a home is a lived in thing. Both of these views show us something about our spiritual relationship to the rest of nature though they are at opposite poles. That is, both can reflect restoration if they acknowledge interdependence and demonstrate responsible stewardship; and if there is respect and admiration, if not reverence, for the creativity of evolution. Apparently, any and all of this is material to sustainability.





Conclusion

The mounting concern over humanity's relationship with the larger world of nature should not mean the turning of attention away from human relations, but rather the understanding of human life as an interconnected part of the greater natural community of life.

-Stephen C. Rockefeller

If, in an effort to find guidance for an eternity, each of us was given a different frame from a movie we had never seen and then asked to describe and interpret that movie, the result would be discord, confusion, and a failure to comprehend the lessons that the film sought to teach us. This is not just because we each have a different frame of a movie to interpret. It is also because each of us approaches the task of interpretation with a different set of values, a different understanding of truth, and different circumstances from which to compare. Sustainable development causes us similar problems because each of us became aware of the term at a different place and at a different point in its evolution and, not seeing the whole of the process, we often think of that point in space and time as its totality. Yet, the final chapter in the maturation of the concept is still to be written. Only if it is seen as a continuing process, rather than a final event where a set of instructions must be obeyed will we begin to understand how to develop in ways that are more understanding of the past, more meaningful for the present, and more useful to the future inhabitants of this planet. We must work with what we have, to do what we have to do.

The previous sections sought to outline what one finds in much of the on-going discussions about sustainable development. What it found there is that we are a long way from being able to say for certain which is the route to sustainability. Our world is too complex and changeable; the future too remote. And we humans are, well, human - each individual a collection of needs, desires, and wants all his or her own. That will not change in the future.

If, according to Kai Lee (1993), "none of the basic requisites of sustainability is yet within grasp," then we have a problem. The problem is that if we can neither define nor measure sustainability then, for now, sustainable development is not very much different from development as we have always known it.

We can, however, define and measure unsustainability. We know that a project that has failed is a project that wasted resources. We know that a program which didn't work is a program that went for naught. And we know that a policy which did not fulfill its promise is a policy that was unfulfilled. Definition and measurement of failure are easy.

We also know that we can do something about it. Methods do exist which enable us to identify and manage development conflict to a larger degree than we think. Moreover, since development conflict is a major cause of development failure, the picture is not as bad as it may

have first seemed. The identification and management of conflict are not easy tasks but they can be done and they do appear to work. Humans have survived on this Earth long enough to have learned something about how to survive together. Three different but related approaches seem to have the potential to make a difference: integrated planning, conflict management, and an understanding of our relationship with nature-that is, that the Earth is not just a planet, but that it is the planet that we correctly call home. Working with these themes may or may not take us to sustainability but there is no doubt that they will improve our rate of success for development that improves life quality for all of us in the least conflictive way. For those of us who feel that this is not enough-that conservation, concern for future generations, and environmental protection are absolute prerequisites for sustainable development, we still can have our say in court. We need only to convince the jury-which by the way, is a jury of our peers.





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Appendix: Principles of Sustainable Development

One cannot help but be impressed with the number of different sets of sustainable development principles that can be found in the literature. Some of the better ones are given below.

The Wingspread Principles: A Community Vision for Sustainability

- **Sustainability** - Disaster mitigation and recovery resources should be invested to improve the quality of life in the areas of public health and safety, environmental stewardship, and social and economic security.
- **Planning and Incentives** - Plans designed to reduce the impact of disasters and to encourage recovery should provide incentives to individuals, the private sector, and government to pursue sustainable development and redevelopment.
- **Partnerships** - Individual citizens, the private sector, and local, state, and federal governments should act as partners with shared goals and values to further the capacity of our communities to be self-sufficient.
- **Locally Driven Process** - Decisions should be driven by a consensus-based, inclusive process that stakeholders use and trust. The process should identify local sustainability priorities, leading to the investment of pre- and post-disaster resources that will meet those needs, emphasizing the need for local responsibility and self-sufficiency.

British Columbia's Principles for Sustainability

- Limit our impact on the living world to stay within its carrying capacity.
- Preserve and protect the environment (life support systems, biodiversity and renewable resources).
- Hold to a minimum the depletion of non-renewable resources.
- Promote long-term economic development that increases the benefits from a given stock of resources without drawing down on the stocks of environmental assets (living off the interest of natural resources).
- Meet basic needs and aim for fair distribution of the benefits and the costs of resource use and environmental protection.
- Provide a system of decision-making and governance that is designed to address sustainability - one more proactive, participatory and long-term.

- Promote values that support sustainability through information and education.

Principles of sustainability set out by the German Parliament's commission of enquiry, "Protecting Humans and the Environment"

- The use made of a resource may not be greater than its capacity to regenerate or the rate at which functional substitutes can be brought into use.
- The release of substances into the environment may not be more than nature's ability to cope with or assimilate them.
- Anthropogenic dangers or unnecessary risks to humans or the environment are to be avoided.
- The time scale of anthropogenic actions affecting the environment must be in balanced proportion to the time required by the environment to react to them.

The Habitat Agenda Principles

- **Peace** - A just, comprehensive and lasting peace is a prerequisite and an essential condition to achieve sustainable human settlements development.
- **Family** - The family is the basic unit of society, and as such should be strengthened.
- **International solidarity, cooperation and assistance** - To safeguard the global interest of present and future generations in human settlements development is one of the fundamental duties of the international community.
- **Government Responsibility and Civic Engagement** - Governments at all levels are responsible for the creation of conditions for meeting the shelter needs of people and for promoting the development of sustainable human settlements.
- **Sustainability** - All human settlements shall be planned, developed and improved so as to ensure sustainability.
- **Equity** - The deficiencies of the current global economic system with regard to gender, environmental and poverty issues should be addressed at the community, local and national levels to create a more balanced and equitable global system.
- **Livability** - Human settlements should be places where individuals and families can live civilized lives in a vibrant cultural environment in conditions of safety and freedom.
- **Partnerships** - Partnerships between and among all actors from public, private and community organizations and individuals are essential to the development of sustainable human settlements and the provision of adequate shelter and basic services for all, as a means of improving urban management and developing urban and rural production and services.

United Nations' World Commission on Environment and Development Principles of Sustainability

- That the needs of the future must not be sacrificed to the demands of the present;
- That humanity's economic future is linked to the integrity of natural systems; and
- That protecting the environment is impossible unless we improve the economic prospects of the Earth's poorest peoples.

Ontario Round Table on Environment and Economy Model Principles

A sustainable community is one which:

- Recognizes that growth occurs within some limits and is ultimately limited by the carrying capacity of the environment;
- Values cultural diversity;
- Has respect for other life forms and supports biodiversity;
- Has shared values amongst the members of the community (promoted through sustainability education);
- Employs ecological decision-making (e.g., integration of environmental criteria into all municipal government, business and personal decision-making processes);
- Makes decisions and plans in a balanced, open and flexible manner that includes the perspectives from the social, health, economic and environmental sectors of the community;
- Makes best use of local efforts and resources (nurtures solutions at the local level);
- Uses renewable and reliable sources of energy;
- Minimizes harm to the natural environment;
- Fosters activities which use materials in continuous cycles.

And, as a result, a sustainable community:

- Does not compromise the sustainability of other communities (a geographic perspective);
- Does not compromise the sustainability of future generations by its activities (a temporal perspective).

Principles of Sustainability adopted by the World Congress of the International Union of Architects

- Insist on the right of humanity and nature to co-exist in a healthy, supportive, diverse, and sustainable condition.
- Recognize Interdependence. The elements of human design interact with and depend on the natural world, with broad and diverse implications at every scale. Expand design considerations to recognizing even distant effects.
- Respect relationships between spirit and matter. Consider all aspects of human

settlement including community, dwelling, industry, and trade in terms of existing and evolving connections between spiritual and material consciousness.

- Accept responsibility for the consequences of design decisions upon human well-being, the viability of natural systems, and their right to co-exist.
- Create safe objects to long-term value. Do not burden future generations with requirements for maintenance or vigilant administration of potential danger due to the careless creations of products, processes, or standards.
- Eliminate the concept of waste. Evaluate and optimize the full life-cycle of products and processes, to approach the state of natural systems in which there is no waste.
- Rely on natural energy flows. Human designs should, like the living world, derive their creative forces from perpetual solar income. Incorporate this energy efficiently and safely for responsible use.
- Understand the limitations of design. No human creation lasts forever and design does not solve all problems. Those who create and plan should practice humility in the face of nature. Treat nature as a model and mentor, not an inconvenience to be evaded or controlled.
- See constant improvements by sharing knowledge. Encourage direct and open communication between colleagues, patrons, manufacturers, and users to link long-term sustainable considerations with ethical responsibility, and reestablish the integral relationship between natural processes and human activity.

Guiding Principles for Sustainability of The Natural Step

- Substances extracted from the Earth's crust must not systematically increase in nature.
- Substances produced by society must not systematically increase in nature.
- The physical basis for the productivity and diversity of nature must not be systematically damaged.
- Resources should be used fairly and efficiently.





LA ORGANIZACIÓN DE LOS ESTADOS AMERICANOS

La Organización de los Estados Americanos (OEA) es la organización regional más antigua del mundo, ya que se remonta a la Primera Conferencia Internacional de Estados Americanos, celebrada en Washington, D.C., de octubre de 1889 a abril de 1890. En esta reunión se aprobó la creación de la Unión Internacional de Repúblicas Americanas. La Carta de la OEA se suscribió en Bogotá en 1948 y entró en vigencia en diciembre de 1951. Posteriormente la Carta fue enmendada por el Protocolo de Buenos Aires, suscrito en 1967, el cual entró en vigencia en febrero de 1970; por el Protocolo de Cartagena de Indias, suscrito en 1985, el cual entró en vigencia en noviembre de 1988; por el Protocolo de Managua, suscrito en 1993, el cual entró en vigencia el 29 de enero de 1996; y por el Protocolo de Washington, suscrito en 1992, el cual entró en vigor el 25 de septiembre de 1997. En la actualidad la OEA tiene 35 Estados miembros. Además, la Organización ha otorgado categoría de Observador Permanente a más de 44 Estados, así como a la Unión Europea.

Los propósitos esenciales de la OEA son los siguientes: afianzar la paz y la seguridad del Continente; promover y consolidar la democracia representativa dentro del respeto al principio de no intervención; prevenir las posibles causas de dificultades y asegurar la solución pacífica de las controversias que surjan entre los Estados miembros; organizar la acción solidaria de éstos en caso de agresión; procurar la solución de los problemas políticos, jurídicos y económicos que se susciten entre ellos; promover, por medio de la acción cooperativa, su desarrollo económico, social y cultural, y alcanzar la efectiva limitación de armamentos convencionales que permita dedicar el mayor número de recursos al desarrollo económico y social de los Estados miembros.

ESTADOS MIEMBROS: Antigua y Barbuda, Argentina, Bahamas (*Commonwealth de las*), Barbados, Belice, Bolivia, Brasil, Canadá, Colombia, Costa Rica, Cuba, Chile, Dominica (*Commonwealth de*). Ecuador, El Salvador, Estados Unidos, Grenada, Guatemala, Guyana, Haití, Honduras, Jamaica, México, Nicaragua, Panamá, Paraguay, Perú, República Dominicana, Saint Kitts y Nevis, Santa Lucía, San Vicente y las Granadinas, Suriname, Trinidad y Tobago, Uruguay y Venezuela.





THE ORGANIZATION OF AMERICAN STATES

The Organization of American States (OAS) is the world's oldest regional organization, dating back to the First International Conference of American States, held in Washington, D.C., from October 1889 to April 1890. At that meeting the establishment of the International Union of American Republics was approved. The Charter of the OAS was signed in Bogotá in 1948 and entered into force in December 1951. The Charter was subsequently amended by the Protocol of Buenos Aires, signed in 1967, which entered into force in February 1970; by the Protocol of Cartagena de Indias, signed in 1985, which entered into force in November 1988; by the Protocol of Managua, signed in 1993, which entered into force on January 29, 1996; and by the Protocol of Washington, signed in 1992, which entered into force on September 25, 1997. The OAS currently has 35 member states. In addition, the Organization has granted permanent observer status to over 44 states, as well as to the European Union.

The essential purposes of the OAS are: to strengthen peace and security in the Hemisphere; to promote and consolidate representative democracy, with due respect for the principle of nonintervention; to prevent possible causes of difficulties and to ensure peaceful settlement of disputes that may arise among the member states; to provide for common action on the part of those states in the event of aggression; to seek the solution of political, juridical, and economic problems that may arise among them; to promote, by cooperative action, their economic, social, and cultural development; and to achieve an effective limitation of conventional weapons that will make it possible to devote the largest amount of resources to the economic and social development of the member states.

MEMBER STATES: Antigua and Barbuda, Argentina, The Bahamas (*Commonwealth of*), Barbados, Belize, Bolivia, Brazil, Canada, Chile, Colombia, Costa Rica, Cuba, Dominica (*Commonwealth of*), Dominican Republic, Ecuador, El Salvador, Grenada, Guatemala, Guyana, Haiti, Honduras, Jamaica, Mexico, Nicaragua, Panama, Paraguay, Peru, Saint Kitts and Nevis, Saint Lucia, Saint Vincent and the Grenadines, Suriname, Trinidad and Tobago, United States, Uruguay and Venezuela.

Consejo Interamericano para el Desarrollo
Integral Inter-American Council for Integral Development

ISBN 0-8270-4019-9

