

**Beyond the  
Project: The  
Quest for  
Sustainability  
in the  
Third World**

*Working Paper*

**DESFIL**

**Development Strategies for Fragile Lands**

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# **BEYOND THE PROJECT: THE QUEST FOR SUSTAINABILITY IN THE THIRD WORLD**

by

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When we speak of development, we should not forget that we are concerned, ultimately, with life, and not with economic parameters or production per se. . . . Why then are developers so often reluctant to acknowledge that emotional enjoyment and satisfaction are as important to human existence as calories and labor capacity? . . . Ideally, the daily experience of those engaged in development work should contribute to a growing understanding and sympathy for those they are purportedly helping. In reality, the opposite is often the case (Grayzel 1986: 162).

It was certainly my experience that development anthropology is a quantum leap beyond the demands of academic research in terms of theoretical complexity, methodological difficulty, physical hardship, and personal frustration. In addition, it tends to foster philosophic questions and doubts not encountered in academic research, ranging from the value of development to the nature and future of the human race as well as raising questions about one's own personal worth and sanity (Sacherer 1986: 247).

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**INTRODUCTION: KNOWLEDGE AND PRACTICE**

There is a growing consensus that one of the challenges facing development administration theorists and practitioners is to find a way to close the large gap between current practice and what is known about effective development management (Rondinelli 1987, 146). Some of the reasons for this discrepancy are structural, others are philosophical. Within the field of international development, prestige accrues to those who make development policy rather than to those who actually make development come about -- the practitioners and technicians (Montgomery 1979, 56):

As encountered in current literature on public policy, implementation refers to the task of carrying out policies and programs made elsewhere. Policy studies are the "big sciences"; for reasons that are not altogether self-evident, implementation is often thought of as a subordinate function, lacking in social consequence or intellectual distinction.

There are several possible explanations for this discrimination. The first is simply intellectual arrogance. Those who make policy or help others make it often regard themselves as an elite, entitled to look down their noses at those who implement development projects and programs, whom they regard as the uninformed, the second-rate, "mere" technicians. A second explanation is that those who actually work at development may be working far from the centers of power, information, and learning, while those who make policy are right at the center (Grayzel 1986, 163-164).

This dichotomy is often reinforced by the prevailing incentive system. The reward for good field performance, for example -- however it may be defined -- is often a promotion that entails greater responsibility and authority. Almost invariably, this involves a move toward the locus of power within the agency or ministry concerned and thus a physical move toward a regional or national capital (Morss, Crawford, and Owens 1985, 70).

A third explanation is that in general few incentives are offered for effective implementation of development. In the U.S. Agency for International Development (AID), the incentive structure is still focused on "pushing money" -- that is, on achieving the overall disbursement targets for particular development programs. Rewards come primarily from getting funds committed and projects approved and into the implementation stage. Those within AID responsible for administering implementation are usually lower-level staff who often have neither the authority nor the experience to do the job effectively (Morss and Morss 1982, 84-85).

Referring to this basic division of labor that now pervades the whole development effort, Dorner (1983, 297) has made the following sage observation:

There is the world of physical work and action; there is the world of ideas -- the intellectual enterprise; and there is the world of public decision-making -- the public policy enterprise. They are not isolated activities; they are closely linked and interdependent . . . a recognition of the role and importance of these different functions -- as well as their limitations -- should be sufficient ground for approaching this complex task of development with a sense of humility.

But the more important and more interesting explanations are philosophical and teleological. Drawing on C. P. Snow's work on the two cultures -- one of literary intellectuals, the other of scientists -- Chambers (1983) identifies two main camps in the field of Third World development. The first is that of the political economists, most of them social scientists and academics, who explain rural poverty, environmental degradation, and inequitable economic growth primarily as manifestations of social relations and structural factors. The second group includes the technocrats and the natural scientists, who regard such problems as arising out of physical and biological factors. Concerned with change and getting things done, they firmly believe there are practical solutions to complex problems, often by means of a "technical fix" (Honadle and VanSant 1985, 101).

But a more profound difference lies in the contrasting answers to the question: knowledge for what? In 1939, Robert S. Lynd wrote a short book with precisely this title, *Knowledge for What?* in which he encouraged his fellow academics to think about the way their work, directed at what he believed to be the proper questions,

might contribute to major structural reforms in the political economy of the US (Friedmann 1987, 145). But for many academics, particularly those in my own discipline of anthropology, the pursuit of knowledge -- at least until relatively recently -- has been an end in itself (Kimball 1978).

This is in marked contrast to the belief, exemplified by the U.S. land-grant universities, that the respectful examination of the problems of ordinary people can lead to worthwhile scientific advancements, while at the same time addressing relevant contemporary problems (McDowell and Wilcock 1986, 54). More explicitly, this land-grant charter holds that (Taylor 1981, 37):

thought and action are indivorceable, that the place of the academy is in the world not beyond it, that it is part of the business of the university to demonstrate the connection of knowledge, art, and practice.

This belief owes much to the pragmatism of John Dewey, whose writings have influenced the social learning and process approaches to development heavily. For Dewey, writing in the 1920s and 1930s, empirical science was the medium through which social progress would be achieved. All valid knowledge comes from experience, by which he meant the interaction between human subjects and their physical environment. Through experience, people come not only to understand the world but also to transform it (Dewey 1950, 89):

The plans which are formed, the principles which man projects as guides of reconstructive action, are not dogmas. They are hypotheses to be worked out in practice, and to be rejected, corrected, and expanded as they fail or succeed in giving our present experience the guidance it requires.

These differences, of course, are not unique either to Third World development or to the twentieth century, for that matter. Aristotle distinguished three areas of possible activity for man as a rational animal (Ostwald 1962, xv-xvii):

- **Theoretical Science.** This is the highest form of knowledge, for it involves the use of reason at its purest. The objective is to study truth for its own sake and to understand the workings of reality without wishing to change the objects of study.

- **Productive Science.** Here, reason is put to the service of man's most immediate needs, in this instance the production of a given product. The producer's task ends as soon as the product is made. He is not concerned with the uses to which it may be put.
- **Practical Science.** This deals with the use of reason for the organization of life itself, through the practical sciences -- ethics and politics. In these practical sciences, man is a moral agent and the very activity of living a good life, as defined by Aristotle, is in itself the end.

What is lacking, of course, is the knowledge, experience, and understanding of those most actively involved in implementation, the technicians, and those most directly affected by development interventions, the people living in areas of the Third World. There is a pervasive bias in favor of outside, "expert" knowledge (Chambers 1983, 76):

From rich-country professionals and urban-based professionals in third world countries right down to the lowliest extension workers it is a common assumption that the modern scientific knowledge of the center is sophisticated, advanced and valid and, conversely, that whatever rural people may know will be unsystematic, imprecise, superficial and often plain wrong. Development then entails disseminating this modern, scientific, and sophisticated knowledge to inform and uplift the rural masses. Knowledge flows in one direction only -- downwards -- from those who are strong, educated and enlightened, towards those who are weak, ignorant and in darkness.

This is not to argue, of course, that locals are always right and that development projects should subscribe to what Honadle and VanSant (1985, 101) have called the myth of the noble peasant. Since rural people know how to do it, the answer is to get out of their way and let them get on with their jobs. Rather, the various sources of knowledge are complementary in their strengths and weaknesses.

This is particularly important in the effort to promote sustainable development. Whose sustainable development is being promoted? According to Redclift (1987, 10):

The developed countries have an interest, it is claimed, in drawing attention to resource scarcities, since they imperil their economic development. They have much less interest in a fundamental restructuring of the international economy which might relieve many of the resource pressures experienced by societies in the South. Hence the very enthusiasm for environmental issues in countries like the United States sometimes creates intense suspicion in the South.

This view is reinforced by the fact that the expression "sustainable development" originated in the developed world -- through the work of the International Institute for the Environment and Development (IIED) and the discussions of the Brundtland Commission (1985). According to Chambers (1986), the poor are largely concerned with their immediate livelihoods, and it is the "enlightened rich" who give priority to sustainability. From his point of view a mental leap is required along the lines of "sustainable livelihood thinking" which will enable causal connections to be made between development and livelihoods and between the environment and livelihoods.

## KEY TERMS

### Projects and Programs

I have intentionally titled my paper *Beyond the Project: The Quest for Sustainability in the Third World* fully aware that certain terms, such as "project," "integrated," and "sustainable development," have very different meanings and can arouse very different emotions, depending on the way they are defined. For "development project," I shall follow Hirschman's clear, simple definition of 20 years ago (1967, 1):

The development project is a special kind of investment. The term connotes purposefulness, some minimum size, a specific location, the introduction of something qualitatively new, and the expectation that a sequence of further development moves will be set in motion.

Two serious criticisms have been leveled against the project approach. First, projects are criticized for failing to live up to expectations, falling far short of what they promised. A wide variety of problems has plagued implementation, ranging from inaccurate assessments of local conditions and absorptive capacity to virtual neglect of important social, cultural, and political factors (Morss and Gow 1985). But such problems are in no way unique to projects; they are encountered in many types of development activity in the Third World. Furthermore, some of these problems are unpredictable, no matter how well or comprehensively the projects are planned (Rondinelli 1983, 320).

A case in point is provided by information overkill. Information has become confused with knowledge: More information is assumed to yield more knowledge which, in turn, should lead to more effective development. But such is not necessarily the case. Some project managers spend much of their time on crisis management, deriving great enjoyment from it. To the extent that they are stimulated by crises, any attempt to reduce the frequency of their occurrence -- by providing timely relevant information, for example -- may be greeted with disdain (Gow and Morss 1985).

But according to Simon (1976), decision makers can never be completely rational in the sense of having all the necessary information about a situation and the alternatives available to them. In practice, there are always limitations of time, resources, and intelligence, which lead to "bounded rationality," whereby a manager will consider only the most likely alternatives and determine which one is at least satisfactory. The prime test of such "satisficing" is that of common sense (Simon 1976).

The second criticism of the project approach, which concerns the issue of sustainability, is more general. By definition, a project is finite and time-bounded. The short time frame brings about temporary infusions of resources, but few benefit flows that continue long after the project funds have been used up. One reason given for this lack of continuity is the problem of recurrent costs -- the inability or unwillingness of the host country government to continue supporting the project at adequate levels of funding once assistance from donors has ceased (Honadle and Rosengard 1983). But this problem is not specific to projects; it is endemic to many donor-supported development interventions.

A second reason for the lack of continuity is the lack of attention to institution building. Independent management units, nominally attached to some ministry, but with their own budgets and personnel seconded from other ministries, are often established to administer projects. This practice neatly bypasses existing structures and institutions, and in the short term it brings quick results. It gives donors more control of their assistance and makes it easier to circumvent rigid bureaucracies and political conflict (Paget 1983, 128). In the long term, no institutionalization of the process takes place, with the result that the rural

landscape of the Third World is often littered with the ghosts of development projects gone by (Honadle, Gow, and Silverman 1983).

In a more optimistic vein, however, this limited time frame can be advantageous, as Honadle and Rosengard (1983, 303) have observed:

It assists the focusing of resources on priority problems, it allows flexibility when the chosen approach loses its promise, it breaks a problem into manageable segments, and it helps to clarify the trade-offs among different potential actions. Certainly, these are desirable characteristics.

And it is these desirable characteristics that should be built upon if sustainability is to be taken seriously.

One way in which this can be done is through a program, broadly defined as the continuing activities of institutions. According to White (1987, 7), four factors have contributed to the growing interest of donors in supporting programs. First, such support implies that host countries will have more of an investment in contributing to and sustaining such programs. Second, programs are more likely to have multiplier effects. Third, a program helps to ensure that donors will work more closely with host country personnel rather than single-mindedly pursuing their own agendas (Sewell and Contee 1985, 114). Finally, this directs attention to the existing institutions in a country, rather than to separate, independent management units of the type discussed above.

### **An Integrated Approach**

The use of the word "integrated" in conventional development circles has been taboo for some time, principally because of its close association with integrated rural development (IRD), the dominant paradigm in rural development the 1970s. Under IRD, a project area was defined by its physical environment, such as the limits of a watershed, by the degree of homogeneity of its productive systems, by its administrative or political boundaries, or by some combination of these. This definition was characterized by its emphasis on the interrelatedness and complementarity of the various project components -- social, economic, and infrastructural (Painter 1987, 319).

But IRD fell into disrepute because it failed to deliver what it had promised. Several reasons have been given, such as the technical-fix syndrome referred to earlier, a lack of coordination among collaborating institutions (Brinkerhoff 1981), and the inherent conservative bias of such an approach (de Janvry 1981, 224-254).

But what is missing from these strictures is, first, an admission of the complexity of the problems faced and the strategy proposed and, second, any realization of the time factor involved or acceptance that development -- integrated, regional, sustainable, or whatever -- is a continuous process that evolves in the course of several decades. No one now really questions the need for a multifaceted approach that will integrate several important components -- concurrently or sequentially -- involving several disciplines from both the social and the natural sciences.

A recent review of the experience of AID with IRD makes a clear distinction between integrated rural development as a strategy and the ways in which the strategy is implemented (Kumar 1987). One alternative is to implement a large, comprehensive, multisectorial project that proves difficult to manage and encounters insurmountable coordination problems. The second alternative is to design single-activity projects that are independently managed and require minimal coordination. Nevertheless, they are planned as components of an overall rural development strategy that are intended to be basic ingredients of a continuing program. In a recent review of World Bank experience in Latin America, a similar conclusion is reached, recommending an umbrella program covering a large number of smaller, independent projects as a better approach (Lacroix 1985, 47).

### **Sustainable Development**

These are the current buzz words within the development community, and although there is no consensus regarding their meaning, most practitioners dutifully pay lip service. The keynote speaker at a recent World Bank symposium on sustainable agriculture neatly sidestepped the issue (Hopper 1987, 5):

The temptation is to begin with a definition of "sustainability." To ask: What is it? Frankly, I don't think I can define it without unduly constraining the free flow of my thought. In other words, I don't know what it is. As it is something that is "sustained," it obviously has a time dimension.

Nevertheless, there is a rich and stimulating body of literature on the topic. Douglass (1984) identifies three schools of thought. The first regards sustainability as food sufficiency: agriculture, guided by conventional cost-benefit analysis, is primarily an instrument for feeding the world. Sustaining the natural resource base is secondary. If the introduction of new technology intensifies erosion of the soil, the price in lost fertility and loss of soil may be compensated for by increased yields. This is strictly a short-term view, however.

A second school regards agricultural sustainability as primarily an ecological question. An agricultural system that depletes, pollutes, or disrupts the ecological balance of natural resource systems needlessly cannot be sustained and should be replaced by one that is adapted to the long-term biophysical constraints. A critical measure of agricultural sustainability is the capacity of renewable agricultural resources, such as arable lands, pastures, and forests, for sustained yield. Instead of taking population as a given, this school tends to espouse policies that limit population to levels that can be sustained by a finite physical environment.

Closely related to this stewardship school is agroecology, which, like sustainability, has come to mean many things. According to Hecht (1987), the word loosely incorporates ideas about an environmentally and socially sensitive approach to agriculture, which is focused not only on production, but also on the ecological sustainability of the production system. It has roots in the agricultural sciences, in the environmental movement, in ecology, and in the ecological analysis of indigenous farming systems.

The effects of agricultural development on the capacity of the ecosystem to achieve high levels of renewal have been discussed by Conway, who refers to what he calls the four properties of ecosystems -- productivity, stability, sustainability, and equitability (1985, 35):

Productivity is the yield or net income per unit of resource. Stability is the degree to which productivity is constant in the face of small disturbances caused by the normal fluctuations of climate and other environmental variables. . . . Sustainability is the ability of a system to maintain productivity in spite of a major disturbance, such as is caused by intensive stress or a large perturbation. . . . for example the effect of soil salinity or indebtedness . . . a rare drought or flood or a new pest. . . . Lack of sustainability may be indicated by declining productivity but, equally, collapse may come suddenly and without warning. Finally, equitability expresses how evenly the products of an agroecosystem are distributed among its human beneficiaries.

The final school of thought, identified by Douglass as the alternative agriculturalists, resembles the ecologists in their desire to husband the permanent carrying capacity of renewable agricultural resources, but they differ in their emphasis on sustainable human communities. Not only must human beings establish stewardship of the earth, they must also establish this sense in their relations with each other, particularly as it affects justice and participation.

In its extreme form, this has come to be known as deep ecology, which, according to its adherents, represents a search for a sustaining metaphysics of the environment (Redclift 1987, 43). Deep ecology rejects the anthropocentric view that humankind lies at the center of all that is worth while and that other creatures are valuable only so long as they serve us (Nations 1988, 79):

In a nutshell, its basic tenet is that all living things have a right to exist -- that human beings have no right to bring other creatures to extinction or to play God by deciding which species serve us and should therefore be allowed to live. . . . Deep ecology says . . . that all living things have an inherent value -- animals, plants, bacteria, viruses -- and that animals are no more important than plants and that mammals are no more valuable than insects.

From my point of view, development includes a long-term concern for the future, and the principal objective of development initiatives should be to generate self-sustaining improvements in human capability and well-being. But closely allied are the following development objectives, which give sustainability a more human, potentially more durable future (Bryant and White 1982, 15-17; Esman and Uphoff 1984, 27-28; Morss, Gow, and Nordlinger 1985):

- **Capacity.** This has both micro and macro aspects, which involve changes in the individual, the community, and the nation -- to include the capacity to develop political and social institutions that will be responsible for production and allocation of resources.
- **Equity.** On the one hand, long-term economic development is stimulated by increasing the human resources of a country and by equalizing the ability to consume. On the other, to ensure greater equality in access and benefits is of value in itself.
- **Empowerment.** If powerlessness is to be addressed directly, then the poor must have some political leverage in order to correct grossly unfair decisions regarding the allocation of development resources and distribution of the ensuing benefits.

But however sustainable development is defined, two interrelated issues, energy and population, must be examined. According to Redclift (1987, 22):

First, we need to consider to what extent we use energy efficiently within agriculture at the present time, since the development of more sustainable options may depend critically upon making better use of the resources we already command. Second, we need to consider population, together with ecological sustainability and energy efficiency, since the prospect of a decline in fertility in most parts of the South provides an incentive for more sustainable agricultural practices.

Historically, economic development has been linked to a progressive increase in the consumption of energy, which is nowhere more apparent than in agricultural development and intensification. Agricultural intensification refers to the use of new technologies of a biological, chemical, or mechanical nature, or some combination of these, that will increase yields per unit of plant or animal production (Wilcock and Ndoreyaho 1986, 39). The conversion of energy has been the principal means through which, first, food production has kept ahead of population growth and, second, the number of people working in agriculture has been reduced. Fossil fuels have been used to drive agricultural machinery, produce agrochemical inputs, and transform agricultural production through more intensive food processing and marketing. The uses to which energy is put in the process of agricultural development is only one of several elements of sustainability (Redclift 1987, 22-29).

The second critical issue that must be faced is population and the effect of rapid population growth on the natural resource base. World population approached 4 billion in 1975 and is expected to double by 2025. What matters most for sustainability is not so much the net increase in population at the global level as the rate of change in population in the most critical regions. Population growth rates tend to be highest, for example, where basic needs are not met, particularly in Africa, where food production per capita has declined 10 percent since 1970 (Redclift 1987, 30). The argument has been offered in respect to Africa that such growth is acceptable because the continent is actually underpopulated, with a relatively low population density of 18.2 people per square kilometer in 1985. But according to Harrison (1987, 243), this is a gross oversimplification:

The fact is that more than half of Africa is uninhabitable. If we deduct the 13.3 million square kilometers of desert or arid land, and the 2.1 million square kilometers of impenetrable forest, we are left with an area of 14.2 million square kilometers. On this area, Africa's 1985 density was 39 people per square kilometer - more than Ireland, Jordan or Ecuador. By 2025, even assuming all the forest were cleared, Africa's population density on her non-arid area will be level with that of present-day Europe.

Neither sustainability nor development is static; both are dynamic. Whereas nouns suggest substance and continuity, verbs suggest action and process and more faithfully reflect the realities of the Third World (White 1987, 95). Sustainability is no exception and should be considered within this changing situation. The question that must always be borne in mind is the following (Redclift 1987, 33):

Is it possible to undertake environmental planning and management in a way that does minimum damage to ecological processes without putting a brake on human aspirations for economic and social improvement?

## **PRIMARY CONSTRAINTS TO SUSTAINABLE DEVELOPMENT**

The primary constraints that inhibit the achievement of sustainable development can be grouped into the following five categories:

- Political, economic, and financial factors;
- Environmental and natural resource factors;
- Technological factors;
- Institutional factors; and
- Organizational factors.

### **Political, Economic, and Financial Factors**

Development projects are neither designed nor implemented in a vacuum; they are an integral part of the broader setting. Development assistance, with its resultant programs and projects, is quintessentially political, since it deals not only with the allocation of scarce resources among competing groups, but also with the achievement of specific goals, of which development is but one.

In the case of AID, Rondinelli (1987, 13-14) has said:

The political and technical priorities of the agency are influenced by Congress, the White House, the governments to which aid is provided, the State Department's interpretation of U.S. foreign policy, and to some degree by the fact that economic and military assistance are often closely linked.

Seen in this light, development assistance becomes an important tool of American foreign policy, though generally speaking it is secondary to the political imperatives of that policy. As a result, the effects of development assistance may be less important than the simple fact that it is provided at all.

At the national level, the pursuit of broad political objectives can easily override efforts to strengthen sustainable development. Typically, government priorities include achievement of self-sufficiency in the production of certain critical

goods such as food, agricultural inputs, and certain consumer items, maintenance of low food prices in urban areas, and winning of the support of certain important groups within the country.

Many Third World countries face serious economic problems. Resource constraints, coupled with fluctuating terms of trade, have led to balance-of-payment and debt-rescheduling problems, which in turn are often exacerbated by policies that maintain officially overvalued exchange rates. The resultant macroeconomic policies can affect projects and the achievement of sustainable development in many ways: Domestic price ceilings and import quotas may decrease incentives to produce; restrictive monetary policies may limit small farmers' access to credit; and tight budgetary restrictions -- as discussed earlier -- may reduce the government's ability to assume critical recurrent costs (VanSant and Crawford 1985).

There is growing evidence, particularly in Central and Latin America, that government policies in such areas as credit, land titling, and marketing work against systems for production of sustained yields and force farmers to orient production toward short-term gain. There are few incentives to encourage sustainable land use (Collins and Painter 1986). In general, economic policies that discriminate against agriculture tend to cause land to be undervalued. If it is undervalued, there is less incentive to be a good steward, husband the land, and control erosion of the soil by making investments that would protect it and increase its productivity (Schuh 1987).

Recent research on deforestation has indicated that the real cause is poverty, itself a consequence of skewed land distribution and low agricultural productivity (World Resources Institute 1985). In Central and Latin America, large farmers tend to own land in the valleys, which is less prone to erosion, have ready access to government-supplied development resources, and enjoy alternative sources of employment and income. In contrast, small farmers on the hillsides usually have few of these options and must continue to exploit marginal resource bases (Hansen and Erbaugh 1987, 84). When these resources have been exhausted, small farmers may migrate to the agricultural frontier in the tropical lowlands, where the process will be repeated.

## **Environmental Factors: Inappropriate Land Use**

"Land-use capability" is defined as the most intensive use that a piece of land is able to sustain on a continuing basis without suffering degradation (Zadroga and Tschinkel 1987, 8) This capability can then be compared with actual land use to determine whether a particular piece of land is being degraded through overuse or could be used more intensively.

A recent report on natural resources and economic development in Central America concluded that in agriculture (Leonard 1987, 170-171):

- Approximately 50 percent of the farms use land inefficiently or maintain large amounts of land in permanent fallow;
- For most crops, productivity is low, with food crops producing as little as one third of the yields in the United States;
- As much as two thirds of the flat, fertile lands in the Pacific coastal strip of Central America is used for extensive cattle pasture rather than for crop production;
- Cattle ranching, using far more land than necessary, is highly inefficient, in part because most of the pasture in the region is left in its natural state rather than being upgraded and managed; and
- Rates of reforestation are low, amounting to about 7 percent of the amount of timber cut annually throughout the region.

A similar pattern is found in certain parts of Africa, particularly in the arid and semiarid regions. The fragility of the natural resource base, together with the accompanying inappropriate use of the land, is manifested in what some observers regard as increasing desertification, an African version of Hardin's "tragedy of the commons." Like the word deforestation, desertification has a strong emotional and visual appeal (Gow 1987, 7). The word itself is riddled with misconceptions, and few facts concerning either the extent or the seriousness of desertification are available. It is sometimes seen as a cause of poor agricultural development and declining yields, rather than as a symptom of agricultural neglect and mismanagement (Timberlake 1985, 60).

As Freeman has observed (1986, 9), this inappropriate use of the land is manifested in increasing erosion and loss of fertility, caused by:

- Extension of cultivation into marginally productive lands susceptible to erosion; and
- Increasing frequency of cropping of fields that in the past were left fallow to restore fertility.

These processes are, in turn, driven by population growth and, to a lesser extent, by the addition of commercial crops to the cultivation of traditional food crops. The recent droughts have exacerbated these trends. Most of Africa's growth in agricultural production has been through increases in the area cultivated rather than through increases in productivity per se. Cropland expanded from 113 million hectares to 142 million during the period 1966-1985, coinciding with the worst drought of the century. Most of this expansion was in the arid and semiarid regions of the continent (Freeman 1986, 9).

#### **Technological Factors**

Research and testing in an effort to improve agricultural technologies have been focused on flat areas, superficially similar to those found in the temperate zones. The technologies developed for these areas are rarely relevant to either the environmental conditions or the social conditions found in the steep hillsides, humid tropics, and arid and semiarid regions of the Third World (Bremer et al. 1984). Worse, their use may cause decreases in production and promote rapid deterioration of the productive resource base (Hansen and Erbaugh 1987).

Mention was made earlier of the technocrats and the technical-fix school of thought -- those who believe that many of the more complex developmental problems in the Third World and elsewhere do, in fact, have technical solutions. From this point of view, failure to achieve sustainable development in Africa is the result of uncontrolled population growth, which, combined with uncontrolled exploitation of natural resources, becomes a vicious circle. The more people there are, the more they destroy the long-term potential of the natural resource base and the poorer both they and their descendants become.

Those who see African pastoralists as the direct perpetrators of environmental degradation have proposed a variety of development initiatives -- ranging from alteration of the environment to changes in the land-tenure system -- none of which has met with much success. Attempts to alter the environment have included provision of water points, clearing of brush for control of the tsetse fly, control of grass-burning practices, reduction of stock, and introduction of block systems of grazing. Land-tenure changes have included various forms of sedentarization, particularly the introduction of ranching, which virtually eliminates the mobility of the pastoralists, their most effective defense in an unpredictable environment, since the land-tenure system is based on fee-simple title held by individuals or groups (Gow 1987, 17-19).

But the situation is changing. In specific instances, suitable technologies are available as a basis for action (Hanrahan 1988; Harrison 1987; Tull, Sands, and Altieri 1987). In addition, indigenous methods offer a wealth of technical approaches with potentially broader applicability (Brokensha, Warren, and Werner 1980; Chambers 1983).

### **Institutional Factors**

When development projects emphasize production at the expense of institution building, the result is an inability to sustain these production gains throughout the long run. Roads are built but not maintained; new technologies are implanted but not supported; people are trained in new techniques but are unable to apply them within their organizations when there are no incentives to change. Coordination among institutions is often nonexistent, each jealously defending its own bureaucratic turf, often at the expense of a proposed integrated approach that would involve, in theory at least, the participation of various institutions (Honadle, Walker, and Silverman 1985).

At the local level, project technicians are often poorly trained, poorly motivated, poorly supervised, and poorly served by logistical supply systems (Esman and Montgomery 1980). Agricultural extension services are often run by the government according to a standard set of procedures, rules, and precedents, causing

inflexibility and slow response to field needs. Prospects and incentives, particularly for those working in the field, are bad. Pleasing immediate superiors is often more important than doing good field work. The civil servant, like the small farmer, pursues a risk-aversion strategy (Gow and VanSant 1985, 111).

In an alternative view of development the sustainability imperative is accepted and the institutional dimension is placed in the forefront. From this vantage point, the focus is on institutional learning and capacity building, rather than on the attainment of temporary goals. A central tenet of this school is that the capacity to mobilize resources and achieve objectives must be embodied in institutions, if development is to be self-sustaining. Only when projects contribute to a capacity-building process can they be considered truly developmental (Honadle 1982).

In AID's strategic plan, *Blueprint for Development* (AID 1985, 17), capacity building and institutional development are seen as a key to the promotion of sustainable economic growth and social progress in the Third World:

Training to help build an indigenous analytical capacity to conceive, plan, and implement development strategies and programs is a very important component of institution building. The principal objective of these efforts is to develop human resources and use them effectively in sustainable institutions.

#### **Local Organizational Factors: Participation and Empowerment**

There is a growing consensus that local organizations have an important function in the achievement of sustainable development. The participation rhetoric of the 1970s has been replaced by the more realistic agenda of local empowerment. There are several good reasons such organizations should be supported, since, according to Cernea (1987), Esman and Uphoff (1984), and Honadle and VanSant (1985), they can:

- Adapt development activities to local conditions;
- Mobilize local resources;
- Coordinate and spread the benefits of outside assistance;

- Manage the natural resource base rationally through education and training and by enforcing rules, incentives, and penalties;
- Empower local people by exercising influence over local administrators and asserting claims on local administrators, development bureaucrats, and politicians; and
- Sustain project benefits.

In a recent study of 25 agricultural and rural development projects funded by the World Bank, it was found that 12 of the 25 appeared to have achieved long-term sustainability. A significant contribution came from local organizations characterized by participation in project decision making, a high degree of autonomy and self-reliance, accountability of their leaders, and continuing identification of project activities with local needs (Cernea 1987).

Of increasing interest and importance are the private voluntary organizations (PVOs), which undertake a variety of activities, ranging from relief work to economic development, usually at the local level. Various arguments are presented to justify this bypassing of regular institutions. Among the more important are the following (Hyden 1983, 120-121; Tandler 1982, 1-10):

- PVOs are much closer than government to the poor;
- PVO staff members are usually committed persons, highly motivated, and altruistic in their behavior;
- PVOs operate economically, in part as a function of their smallness but also as a result of much greater cost-consciousness and financial discipline;
- PVOs are flexible, innovative, and experimental -- a quality that arises from their small size and the decentralized nature of their decision-making procedures; and
- PVOs are independent and thus have the opportunity to develop demands for public services and resources, thereby facilitating the work of individual government institutions in rural areas.

Korten (1986) has argued persuasively that PVO assistance efforts have undergone important changes through the years as their members have grown in sophistication and professionalism. Taking the family as an analogy, he identifies three generations of PVO development strategies: relief and welfare, small-scale local

development, and development of sustainable systems. The last-named strategy is to examine the basic issues related to sustainability, impact, and recurrent costs. Sustaining the benefits of PVO-supported activities is believed to depend on the ability to link local public and private organizations into a supportive national development system.

Generally speaking, local organizations have not lived up to expectations, showing themselves to be vulnerable to active resistance to their formation from various sources; falling under the control of powerful outsiders; succumbing to factionalism and internal politics; showing lack of expertise in the necessary political, organizational, and technical skills; and being prey to corruption and betrayal by organizational leaders (Esman and Uphoff 1984, 181-202). Active resistance, according to Thomas, is often centered on empowerment (1985, 24-25):

The generation of power by communities and citizens' groups is frightening to political and administrative leaders. The idea of "empowering" communities, regardless of the intentions or the anticipated development consequences, is received with skepticism or fear. Many national governments are struggling to achieve and maintain political control amidst conditions of general social unrest. In the face of such conditions, political leaders are unlikely to welcome empowerment strategies.

#### WHAT IS TO BE DONE: AN INTEGRATED APPROACH?

In planning for sustainable development, two questions must be addressed. First, what is to be sustained -- benefits, equity, institutions, empowerment, local organizations, the natural resource base, the present level of economic growth? The answer depends on the definition of sustainable development. A broad, encompassing definition is provided by Repetto (1986, 15):

a development strategy that manages all assets, natural resources, and human resources, as well as financial and physical assets, for increasing long-term wealth and well-being. Sustainable development, as a goal, rejects policies and practices that support current living standards by depleting the productive base, including natural resources, and that leave future generations with poorer prospects and greater risks than our own.

The second question is: How is sustainable development to be achieved? In this section I shall attempt to provide an answer by discussing an interrelated group of factors that can, I believe, strongly affect the outcome. These are:

- Political support and commitment;
- Technological base and natural resource endowment; and
- Development management strategies.

### **Political Support and Commitment**

If sustainable development is to have any chance of success, there must ultimately be a commitment on the part of both the donor community and the national governments. This calls for more than dialogue that leads to significant changes in policy. Resources must be made available to implement these changes, which will not be made without a certain degree of commitment from politicians, civil servants, and those responsible for implementing the changes on the ground.

This entails not only commitment to provision of the necessary resources, both human and financial, but also to policies that will support sustainable development. Third World countries have resource endowments that tend to be more natural resource-intensive than those of developed countries, where knowledge is used to produce new technology -- often dependent on increased use of energy -- which develops substitutes for resources that become increasingly scarce as development proceeds (Schuh 1987). Thus commitment to policies, such as increased attention to land-use planning, to soil conservation, to reforestation, and to equity issues, that address environmental problems can significantly affect sustainable development.

The concept of commitment is not one that is widely discussed within the development community. This is so for two reasons. First, analyzing commitment is conceptually difficult and necessarily subjective. There is no accepted means of measuring it or building it, and testing its intensity requires a certain level of political sophistication and understanding (Heaver and Israel 1986). It is well known that the principal actors in rural development programs, whether institutional or individual, try to achieve different and sometimes contradictory ends. When their

agendas differ, success and sustainability rarely receive priority attention (Morss and Honadle 1985). Nevertheless, commitment to the goals of sustainable development should be a common element of these differing agendas.

A second reason is that commitment is not often associated with national ministries, academic institutions, consulting companies, or other entities involved in development. Strong commitment to goals, particularly to their ethical content, is more often associated with PVOs, as mentioned earlier, and is often cited as one of their comparative advantages (Tendler 1982). Research indicates that a number of humanitarian and church-affiliated PVOs have invested considerable effort in instilling a commitment to development goals in their affiliates in the Third World (White 1986).

There is increasing evidence that such institutional commitment is unlikely to materialize unless there is strong individual leadership at the program or project level. A recent evaluation of six agricultural and rural development projects in Africa concluded that such leadership is a necessary condition for successful project management and that other factors cannot compensate for weak leadership (Honadle 1986). According to Leonard (1986, 65-67), the most important requirement of a good leader is a strong, personal commitment to the goals of the program. This commitment can have two sources, professional education and personal values, inspired by the leader's early family experiences and supported by his or her contemporary environment. In addition to this commitment, effective leaders should have flexibility, extra resources, bargaining skills, political sensitivity, the ability to anticipate problems, the capacity to inspire others, and the ability to recruit good staff.

How can institutional commitment be strengthened and extended? Several ways have been suggested, and the more promising include more dialogue, organizational changes, and planning workshops (Heaver and Israel 1986; Silverman 1986). Commitment rises in direct proportion to the degree of participation by the national government. As a means of building commitment, there is no substitute for dialogue in a process of joint identification of programs by donors and host governments, when this is seen as an exercise in which both sides listen, learn, and modify their approaches. While the truth of this statement is self-evident, it is observed more

often in the breach than in practice. As a consultant I have worked in various countries in which the donor had not discussed the proposed program with the host government in any detail (Gow et al. 1984).

A second way to influence commitment is through organizational changes in the institutions responsible for planning and implementing sustainable development activities. Assuming that top management is already committed, these changes might include the establishment of clear and attainable goals to improve evaluation of progress and individual performance, the introduction of a monitoring system to improve accountability and allow for flexibility and modification in the light of what has been learned; and the introduction of incentives, both material and nonmaterial, linking staff rewards to performance.

And a final way is through what has come to be called action-planning workshops which involve planners, implementors, and beneficiaries (Silverman, Kettering, and Schmidt 1986). When used iteratively throughout design and implementation, action planning can mobilize commitment and improve planning among a critical group of key actors. Identification and design documents, project initiation workshops, and review and planning workshops can ensure local ownership of development programs, create effective teams and organizations, and institutionalize management capabilities. In brief, action planning, used effectively, can create a certain esprit de corps.

### **Technology and the Natural Resource Base**

While the standard transfer of Western technology has been roundly criticized, much has been learned during the past decade concerning appropriate technology, particularly for farmers who are resource-poor -- those who live on the steep hillsides, in the tropical lowlands, and in the arid flatlands, where soils are shallow and poor. Before this technology can be generated, the following questions must be answered (Bremer et al. 1984):

- What is the state of the resource base and our knowledge of it?
- Do technologies exist for controlling erosion and loss of productivity that are profitable under prevailing economic conditions?

- Do technologies exist to increase the sustainable productivity and sustainable net income that can be achieved from the land resource base?
- Do research systems exist that can continue to develop the necessary information and technologies in ways that will ensure their value to resource-poor farmers?

The last question may be the most important. Without recognition of the reason research has failed to address these needs and of the special requirements of this research, it is not possible to establish priorities for action; it is possible that strengthening or redirecting research priorities and capabilities should be given priority.

One response has been the creation of the farmer-first-and-last (FFL) model, propounded by Chambers and Ghildyal (1985), using many of the ideas generated by Robert Rhoades (1986) in his work with the International Potato Center in Peru. This model combines -- in a practical way -- the knowledge of the outside expert with that of the local expert. In this instance the farmer.

The premise upon which this model rests is that successful interdisciplinary research must begin and end with the farmer, the farm household, and the community. The methodology begins with systematic attempts to understand the farm and the farming system. Those engaged in implementing it -- social scientists, biological scientists, and farmers -- may begin by choosing anything they think may work, but they should follow a logical sequence of activities: diagnosis, identification of solutions, testing and adaptation, and evaluation by the farmer.

Enough is known about technological interventions, using both Western and indigenous models, to improve the sustainability of present land-use systems significantly. Many of the possible technical interventions are site-specific and must be adapted to the prevailing environmental conditions. There is no standard technical package that can be extended willy-nilly -- just as there is no standard way to disseminate these interventions, since they must be adapted to prevailing social and political conditions.

The following technical interventions have already proved their worth on communal rangelands in Morocco (Gow et al. 1985):

- The building of benchettes and contour furrows;
- The reseeding of appropriate areas;
- The planting of shrubs;
- The introduction of water-catchment systems;
- The introduction of water-retention techniques; and
- The deferment and rotation of communal grazing lands.

While agroecology has produced many detailed technical recommendations (Altieri 1987; Harrison 1987; Tull, Sands, and Altieri 1987), it has also elaborated three emerging principles of general interest to those concerned with sustainable development (Dover and Talbot 1987, 50-52). First, there is no substitute for detailed knowledge of the specific environment to be developed or managed. Reference was made earlier to Conway's agroecosystem analysis, with its focus on four essential properties: productivity, stability, sustainability, and equitability. Equally important may be an understanding of the autonomy of one agroecosystem or its dependence on other agroecosystems. In many areas of the world, lowland agriculture often depends heavily on the washing of nutrients from higher altitudes for its fertility. Thus, one ecosystem may be able to maintain its productivity only as another degrades (Rambo 1985).

Another property of ecosystems that may be of considerable importance is energy efficiency, also discussed earlier, and the ability to substitute structure for energy in the maintenance of the ecosystem. Multistoried plant canopies, for example, can capture greater amounts of sunlight, which in turn can produce larger amounts of biomass that might otherwise need fertilizer. The addition of animals to the farming system means that more plant material is turned into usable food. Finally, increased diversity in the ecosystem may serve ecological, economic, and nutritional ends by increasing biomass productivity and spreading risk, by giving farmers more products to sell at different times of the year, and by improving diets by providing a wider array of vitamins and minerals.

The productive potential of the existing natural resource base can be better understood and appreciated through land-use planning, whereby potential and actual land use are made to correspond. There are many ways of classifying land; one that has proved to be effective is the Holdridge life-zone classification, widely used in Central and South America. The principle underlying the life zones is simple. They can be thought of as groups of ecological associations related through the effects of three climatic factors -- heat, precipitation, and moisture. The life zone comprises only the first-order category of environmental divisions. Subdivisions are necessary for more specific analysis and for inclusion of second-order environmental factors, such as soils, drainage, topography, strong winds, mists, and various patterns of rainfall distribution, in the classification system (Holdridge 1967, 31).

### **Development Management Strategies: Learning and Politics**

Development management, as the term is used here, refers to activities designed to expand the capacity of governments and private organizations in the Third World to conceive, plan, and implement development programs and projects (Rondinelli 1987, 13). It generally involves three interrelated components -- policy making and analysis, organizational leadership, and internal administration -- including those tasks that fall under the general category of "bureaucratic hygiene" (Leonard 1986; Montgomery 1985). In theory, then, development management has two sides -- the human, which consists of leadership, judgment, experience, and creativity, and the technical which consists of management systems, regulations, and techniques through which routine tasks are carried out (Rondinelli 1987, 140). The institutional and organizational constraints discussed earlier fall within the domain of development management.

Development management is neither a science nor an art. It is, rather, a craft. Not surprisingly, there are various schools of thought concerning it, of which two are particularly relevant to the problems of sustainable development discussed in this paper -- the social learning approach and the political influence approach (White 1987). One of the more exciting aspects of recent work in Third World development has been the increasing acceptance that development is a process of change which is often unpredictable, that programs are designed and implemented on the basis of limited information, with the understanding that as new information is provided,

strategy and goals will be changed accordingly. This calls for an admission on the part of "experts" such as ourselves that we do not know everything and, furthermore, that we are prepared to learn from our mistakes. But most important, this school asserts that development involves personal transformations that can take place only if individuals themselves are intimately part of the process -- that is, if they shape it and are transformed by it (White 1987, 160).

Much of the credit for applying this approach to Third World development belongs to David Korten. Building on Dewey's pragmatic approach, discussed earlier, Korten (1984) studied three successful development programs in Asia. Each emerged out of a long-term learning process in which the local population and program personnel shared their knowledge and resources to create a fit between needs, actions, and the capacities of the assisting organizations. In each instance, the overall process could be accomplished in three stages, each with its own learning requirement: first, learning to be effective; second, learning to be efficient; and, finally, learning to expand.

Appealing as this approach is, it has two serious flaws: its rationalistic bias and the difficulty of discovering error (Friedmann 1987, 217-218). How much error are we prepared to acknowledge? People, and the institutions they may work for, are not, as a rule, eager to acknowledge error, because there may be too much at stake -- reputation, prestige, resources, credibility, and authority. But more important, admission of errors may imply that the values and commitment that led to them were misplaced. How much uncertainty are we prepared to live with? Thomas (1985, 25) claims that all of us -- university professors, development consultants, donor agency professionals, and Third World professionals -- are emotionally and intellectually compelled toward certainty, control, and anticipation.

The second flaw arises from the fact that it is not always clear when an error has been made or what the nature of the error is. Who identifies the error and who decides how it will be resolved?

Be that as it may, social learning theory suggests four practical reasons for involving the local population in management (White 1987, 160-162). First, given the imperfect information base on which much development planning and implementation

are based, it is necessary to obtain more information from local groups, a point stressed earlier. Second, involving people directly creates a momentum for changing government institutions and promoting learning. Third, the capacity of the community to contribute to development may thereby be increased. Fourth, and related, the very act of involvement changes communities and increases their capacity for effective action -- what Hirschman (1984) has called the Principle of Conservation and Mutation of Social Energy. In practice, this means that communities learn from previous efforts at collective action, even if the efforts were unsuccessful, and they conserve some of this social energy for later efforts, albeit in some very different form.

The principal problem with this approach is resistance by the "experts," who provide development services, since it implies a radical reordering of the conventional way of doing business, certainly at the level of larger projects and programs. Various writers have called for a "bureaucratic reorganization" whereby the staff would have to focus its attention on the local population, rather than just doing things for them (Korten and Uphoff 1981). But what are we really proposing: pouring new wine into old bottles or really starting anew with something more challenging and intoxicating? It is Chambers (1983, 188-189) who has thrown down the gauntlet and challenged the development community to embrace what he calls a new professionalism, embodying a willingness to listen and learn from the local population, to cross disciplinary boundaries, and to combine the best of the two cultures -- criticism and vision from the one, hard-nosed practical solutions from the other.

Equally exciting in the field of development management is the increasing importance -- and legitimacy -- being given to the political setting in which development occurs. While it is self-evident to say that development is a political process, analysis and practical recommendations often go little beyond this statement. In fact, politics is often accepted as a given, a constraint that development programs must accept and adapt to and, perhaps, ultimately blame when failure looms. The political influence approach treats politics with the respect it deserves. It describes the various groups and interests involved in the development process, assesses their influence, and prescribes ways to negotiate with them and mobilize their support (White 1987, 188).

Three strands within this evolving approach are relevant to the issue of sustainability (White 1987, 194-205). Briefly, they are:

- **Policy Research and Political Analysis.** Cohen, Grindle, and Thomas (1985, 1217) propose that managers analyze their political situation to determine the area within which they can bring about developmental changes and the constraints and opportunities within this space. According to Lindenberg and Crosby (1981, 25), in planning a political strategy, an effective manager needs to ask three questions: What do I want? Who has it? How can I get it?
- **Political Rationality.** Programs should be planned on the assumption that other parties will do what seems politically rational from their points of view. Many actions that are rational from an economic point of view may be politically irrational from the point of view of the other parties involved. Most important, political rationality can assist managers in choosing the best institutional arrangements for implementation (White 1987, 197).
- **Institutional Relations:** Any integrated approach to the achievement of sustainable development will involve several institutions and the usual problems -- particularly lack of coordination -- that this implies. One way to attack these problems is to trace out the network of those institutions that affect each other, directly or indirectly, focusing on the linkages rather than on the institutions themselves. Recent research indicates that cooperation depends on institutional values, recognition of interdependence, distribution of power, and shared situation -- the greater the extent of shared experiences, the greater the chances of cooperation (White 1987, 201-202). And readily available, tangible resources can greatly facilitate the process.

#### A FINAL WORD: CLOSING THE GAP

There is a body of knowledge that can help the Third World and the development community work toward sustainable development and to arrive at some common understanding of what we mean by sustainable development, of what the principal constraints are, and of ways in which they can be overcome. Equally important, in my opinion, are the political will and the personal commitment to act on this knowledge. If we wish to make a difference, to change things for the better, then we ourselves must be prepared to change in the process -- not necessarily to be transformed into full-fledged, sensitive, caring "new professionals" -- but certainly into practitioners with vision.

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