

Children, Environment and Sustainable Development
Primary Environmental Care (PEC) Discussion Papers
No. 1 February 1995

Community Based Sustainable Human Development

A Proposal for Going to Scale with Self-Reliant Social Development

“Sustainable human development is development that not only generates economic growth but distributes its benefits equitably; that regenerates the environment rather than destroying it; that empowers people rather than marginalizing them. It gives priority to the poor, enlarging their choices and opportunities, and provides for their participation in decisions affecting them. It is development that is pro-poor, pro-nature, pro-jobs, pro-democracy, pro-women and pro-children.”

Written for UNICEF by Daniel Taylor-Ide and Carl E. Taylor
(Future Generations and Johns Hopkins University, USA)

Dedicated to the Memory of

James P. Grant

1922-1995

UNICEF/94-0093/Giacomo Pirozzi

***“We must preserve our planet in order to nurture our children;
equally, we must nurture our children if we are to preserve our planet.”***

**(Speech given by Executive Director of UNICEF, James P. Grant,
at the United Nations Conference on Environment and Development, 1992)**

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February 1994

This paper has been commissioned by the Environment Section, Programmes Division, UNICEF, as a discussion paper on “Children, Environment and Sustainable Development.” Discussion papers are working documents and present new ideas, innovative approaches, case studies, bibliographies and research results, prepared either by UNICEF staff or consultants or others supported by UNICEF. They help to facilitate exchange of information, ideas and perspectives among field offices and to stimulate broad discussions.

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Layout and Design by Touch Communications, New York, USA
HTML conversion by [Future Generations](#)

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CONTENTS

FOREWORD

EXECUTIVE SUMMARY

CONVERGENCE OF ORIENTATION IN INTERNATIONAL AGENCIES

THREE BASIC PRINCIPLES OF SUSTAINABLE HUMAN DEVELOPMENT

LEVELS OF PROGRAMME EVOLUTION IN GOING TO SCALE

The First Stage: SCALE (Selecting Communities As Learning Examples)

The Second Stage: SCALE Squared (Self-help Center for Action Learning and Experimentation)

The Third Stage: SCALE Cubed (Sustainable Collaboration for Adaptive Learning and Extension)

SEED: A Methodology for Increasing Community Awareness and Capacity

SUCCESSFUL EXAMPLES OF SUSTAINABLE HUMAN DEVELOPMENT

Examples Of Expansion Across Geographical Regions

Examples Of Expansion Across Development Sectors

PRECONDITIONS FOR SUSTAINABLE HUMAN DEVELOPMENT

CRITICAL COMPONENTS IN BUILDING CAPACITY FOR ACTION

FIVE STAGES OF ACTION

Stage One: Data Gathering

Stage Two: Collaborative Analysis

Stage Three: Inclusive Decision Making

Stage Four: Action

Stage Five: Monitoring & Evaluation

SIX STRATEGIC PRINCIPLES FOR ACTION LEARNING

Leadership

Community Ownership of Process

Surveillance for Equity and Reaching the Unreached

Promoting Sustainability

Community Capacity Building for Integrated Social Services

Partnerships

CONCLUSION

A Sustainable Human Development Audit

BIBLIOGRAPHY

FOREWORD

This monograph comes at an important stage in the evolution of programmes within UNICEF. Progress reported around the world on the achievement of goals emanating from the World Summit for Children in 1990 sets the stage for transition to new challenges. (html ed: 1990 World Summit info from [Global ChildNet](#) available [here](#).)

As the World Bank's [World Development Report](#) for 1993 stated, there has been more improvement in child survival in the past forty years than in all previous human history. A major part of that improvement has resulted from the specific interventions promoted by what [UNICEF](#) has referred to as the Child Survival and Development Revolution (CSDR). Most of the Mid-Decade Goals are on target for achievement in a majority of developing countries. As the 1995 [State of the World's Children](#) report outlines, these well- focussed efforts are now saving the lives of millions of children who would otherwise be dying every year.

A major concern is sustainability of these achievements. The international input that has stimulated and partly funded the efforts of the past decade and half is being greatly affected by economic adjustments. It is especially important during the current transition period that the 20/20 concept be accepted as an operational guideline to ensure that basic social services receive at least 20 per cent of both national and international funding for development.

Social mobilization has been an outstanding feature of recent successes in CSDR. In an evaluation by a special [Pan American Health Organization](#) commission of the impact on primary health care of Polio Eradication in the Americas, there was strong consensus that the single most important contribution of the Expanded Programme for Immunization (EPI) to health care generally was demonstration of the power of social mobilization.

Social mobilization should start with national leaders but its sustainability depends on continuing

community participation. Demand for services must be stimulated and maintained at community level. Science based interventions should be simplified so as to be applied in the home either by family members or by easy access to peripheral health workers. The most important responsibility of health and other services is to promote the capacity of families and communities to solve their own problems with self reliance.

This monograph brings together many years of experience in UNICEF and other agencies in promoting components of Sustainable Human Development. Area Based Programmes have tended to be successful in local areas but there have been problems of their not readily “going to scale.” There are, however, examples of successful extension. In this volume, Drs. Daniel Taylor-Ide and Carl Taylor have made a worthy effort in drawing important lessons from such examples and proposed a set of measures that could guide future efforts. Their proposal, **SCALE**, includes three phases: (1) identifying a successful local project for social development; (2) transforming it into a community-based Action Learning Centre; and (3) a systematic process of facilitating community-to-community extension. Self Evaluation with Essential Data (SEED) is recommended as an essential part of the methodology. The process places special emphases on: equity, a long standing UNICEF goal of reaching the unreached; adaptation and innovation under diverse local conditions; and capacity building through collaboration between communities, government officials and experts.

The thought provoking ideas presented here deserve wider hearing. I am delighted that the monograph is being brought out as the first in the Discussion Paper Series on Primary Environmental Care (PEC). The purpose of the Series is to generate ideas to help integrate PEC, following the 1993 Executive Board decision, in UNICEF-assisted country programmes. UNICEF field offices and concerned partners will, I hope, give due consideration to the concepts described here concerning effective community participation and sustainable resource management in the context of child survival and development programmes.

I am also confident that the monograph will contribute important insights to the ongoing discourse on sustainable human development. The process was initiated at world summits and conferences on Children, Environment, and Population and is being pursued further at the forthcoming [World Summit on Social Development in Copenhagen in March 1995](#) and the [Fourth World Conference on Women in Beijing in September 1995](#), and the [Second World Conference on Human Settlements \(Habitat II\) in 1996](#). As we approach the new millennium, the continuing challenge for governments and the public at large, in collaboration with donors and UN agencies (including UNICEF), is to promote and bring to fruition the long term process of sustainable human development.

I want to thank Drs. Daniel Taylor-Ide and Carl Taylor for the important ideas that they have synthesized here in concise and practical ways. In the spirit of a continuing dialogue, we welcome comments and suggestions, and request that they be sent to Deepak Bajracharya, Senior Adviser, Environment.

James P. Grant
Executive Director, UNICEF

[\[next\]](#) [\[contents\]](#) [\[home\]](#)

[\[next\]](#) [\[previous\]](#) [\[contents\]](#) [\[home\]](#)

I. EXECUTIVE SUMMARY

As the 20th Century draws to a close and a new millennium approaches, there is a natural response to analyze what has worked in the past in order to focus future action. Furthermore, people are increasingly demanding an improved quality of life — they and we are aware that human welfare has improved more in the past fifty years than in all previous human history. However, our past actions have jeopardized many planetary systems and exploited a number of Earth's natural resources, so simply doing more of the same is no longer viable.

The challenges of social development are large and complex but attainable. This document draws on world experience to propose for consideration an apparent replicable approach for sustainable human development that brings together the three primary environmental care objectives of ecosystem management, meeting basic needs, and community empowerment so that:

Communities develop the capacity to solve their own problems by applying appropriate science-based interventions that are simplified and adapted for local use; and

Systematic extension is promoted by an evolving extension process in which communities learn from each other.

Various world summits and conferences, including those on Children, Environment, Population, Social Development and Women, outline what appears to be a growing consensus that sustainable human development depends mainly on what people in their families and their communities do for themselves. But beyond the good intentions and consensus in words, the steps for concrete actions are unclear.

However, experience shows that under any political or economic system, successful and sustainable human development is possible — and that there seems to be a common sequence such projects follow as they move from pilot phase into large scale implementation. Furthermore, many such projects are community led and promote social and economic welfare while also protecting the environment.

However, going to scale with methods developed in these community specific projects has been difficult to replicate and the methodology and principles that led to the successes have not been sufficiently documented. Part of the problem has been that international development has concentrated on stimulating economic growth. Global efforts at economic progress must now be balanced by direct measures to promote self-reliance in community based social development. Particular attention is needed for protecting the most vulnerable segments of the community, especially children, mothers, and the most vulnerable environments, where biodiversity and bioresilience are first threatened.

Each country and community must meet their social development and environmental utilization imperatives with approaches based on their particular cultural heritage and ecological situation. This monograph analyzes what may be a common sequence by which particular pilot and demonstration projects grew to become larger and successful regionally and summarizes the features that made these very different initiatives work. It then suggests a process by which governments can work with communities and experts to support the development of community capacity to achieve self-reliant,

sustainable human development. This process is described under the acronym SCALE, the meaning of which changes depending upon the evolutionary stage a project is at.

Community self-knowledge and awareness seems to be a consistent requirement in this process. Communities need to learn how to conduct self-evaluation of local needs, options and resources. A pragmatic methodology called Self Evaluation with Essential Data (SEED) is suggested here. Using a variety of methods all groups, including the poor and marginalized, should work together in joint data collection, analysis, inclusive priority setting and continuing action. Children have a particularly useful role in this process — they can provide critical resources while fostering their future access in the community.

Experience also shows that sustainable human development is achieved within a culture of partnerships. When the ultimate objective is financially and environmentally sustainable community centered development, then collaboration among governmental and nongovernmental agencies and experts provides the base for partnerships needed. The answer is not top-down or bottom-up approaches — but rather both as they complement each other's strengths, bringing together different functions and activities. Community members often need guidance from public and private officials who frequently control resources and regulations. To this partnership a third group, experts, can introduce techniques and information so communities can effectively, equitably and sustainably use their own resources and receive training in new skills required.

Sustainable human development is pro-poor, pro-nature, pro-jobs, pro-democracy, pro-women, and pro-children.

“Sustainable human development implies first, meeting the needs of the present without compromising the ability of future generations to meet their own needs.

Second, children are more vulnerable than any other population group to environmental degradation, because their bodies and minds are still young and growing.

Third, it is the young who most readily show the energy and vision to find solutions to the future. The Brundtland Commission noted that it was the young, those who have most to lose, who were the harshest critics of the planet's present management.

Fourth, children form a large part of the population, almost half in many developing countries. The totality of their well-being is what we want, and for this an integrated, human approach to environment can thus bring fresh light to many environmental issues.”

Richard Jolly (Deputy Executive Director, UNICEF)
Statement to the Third Session UNCED Preparatory Committee, 1991

II. CONVERGENCE OF ORIENTATION IN INTERNATIONAL AGENCIES

A remarkable convergence has become evident in the past few years in a series of reports and conferences of the major international agencies. Two themes are central to this new recognition: (a) development activities must be sustainable, both financially and environmentally; and (b) development programmes must be integrated, responding multi-sectorally to the diverse needs that communities and individuals experience.

UNICEF's *State of the World's Children Report 1994 (SOWCR94)* articulated the synergistic interactions of poverty, population and environment as collectively producing a downward spiral of negative change which seems to "have already accumulated to the point at which some degree of disaster is inevitable". The SOWCR94 goes on to say "the hope must be that the Cold War has ended in time for the world to refocus itself, switching its concern and capacities to the task of averting a catastrophe brought on by the neglect and accumulation of these problems during the long years of military and ideological preoccupation."

The World Bank in its *1994 World Development Report* looked beyond economics and recognized that effective development includes health in a manner it had earlier used to target the importance of education, especially of women. The report gave special emphasis to equity and the need to make universally available a minimum package of short-term acute and long-term preventive health and family planning services. UNDP's *1992, 1993 & 1994 Human Development Reports* have focused on human development indicators as the true goal of international assistance. They have stressed particularly the absolute need of reaching the unreached and promoting equity.

A series of world conferences and summits involving heads of state have provided milestones for the evolution of this conceptualization. An important early stage was in the WHO/UNICEF Alma Ata Conference on Primary Health Care in 1978 which emphasized: (a) peripheralization of health services, (b) community participation, and (c) intersectoral cooperation. Progress has been good on the first item but not on the latter two. The World Summit on Children sharpened the focus on the Child Survival and Development Revolution. The 1994 World Conference on Population and Development and the upcoming 1995 Fourth World Conference on Women both emphasize the unifying role of women and the need for integrated services that improve living conditions. Bilateral assistance programmes are also recognizing such linkages and reordering their priorities to stress sustainability and self-reliance.

These collective international fora all examined various parts of the larger social development need and have articulated parts of the broad vision under which world consensus is now converging. The proposed Declaration and Action Plans of the United Nations World Summit on Social Development (March 1995) formalize the goals of this growing international consensus by focusing on the three themes of poverty reduction, promoting employment and social integration to build a civil society. Perhaps even more importantly, these documents of the Summit stress the balance between what governments can do and what people can do for themselves. Drawing upon a recognition of what has worked in sustainable human development, this document charts a course of actions that may realize this convergence in international vision.

III. THREE BASIC PRINCIPLES OF SUSTAINABLE HUMAN DEVELOPMENT

Principle One

Sustainable human development evolves from a self-reliant understanding of local needs and resources. Each community should be empowered to use simple methods to gather its own data about local problems in order to agree on priorities. Depending on local conditions, they should be aware of changing population numbers and distribution, patterns of natural resource utilization, dynamics of the local ecosystem, economic potentials, market forces, and social development variables such as education, health and the status of women.

- The rationale for a community led process comes from: (a) the fact that a community has an internal, intuitive sense they can use to cross-check whether data for decision-making are accurate; (b) the community can make the most direct use of relevant data; (c) costs are minimal when the community gathers its own information; and (d) research level precision is not needed for practical community decisions.
- When outside research groups collect data concerning social relationships, ecosystem variables, education, health, population and the local economy, the results reflect professional taxonomies rather than community logic. Communities perceive their development as an integrated, interactive whole not limited to sectoral disciplines.

Principle Two

Action must grow from a combination of a bottom-up and top-down programming. For this to happen in the most informed manner, decision-making needs to be based on a three-way inclusive dialogue involving:

- **The whole community** — including the disenfranchised as well as those with power or position. Thus women, youth, the poor, ethnic minorities, all need to be allowed a voice in the dialogue because they typically have the greatest problems and this strengthens internal capacity so that their labor can be utilized in implementation.
- **Government & Agency Officials** — including those who represent all agencies, whether governmental or nongovernmental, that help the community care for itself. In addition to involving appointed and elected officials there should be those who are leaders in religion, culture, entertainment or business.
- **Experts** — People with information or useful skills, including academic and research workers, media representatives, and outside friends of the community. Experts, as outsiders, have an additional role; they can be impartial watchdogs for equity, to warn of intrusions by the powerful. They can apply publicity or restriction of resources when exploitation is not remedied spontaneously.

Principle Three

Sustainability is possible only when action grows from community participation and self-reliance. Similar words have been used in the past but they have tended to mask or become an excuse for

community manipulation. What is different now is that financial stringencies resulting from recessionary economic adjustment policies have required severe cuts in government funding for social services. (Health services, for example, have been cut by 30 to 50 percent in many African countries.) Behind the euphemistic facade of terms such as democratization and privatization, agencies and governments, driven by the realities of constricting central resources, have dumped responsibility back onto communities to finance their own health and other services. Economic adjustment policies will be accepted and effectively financed only if the slogans of community participation and self-reliance are given substance with realistic political and operational support.

“From the point of view of millions of the poorest families on earth, the principal environmental concerns consist of the ever present threat of diseases that are easily preventable; the dreadful conditions of malnutrition, often related to the decline in household food security, inadequacies of agricultural practices and loss of fertility in their fields; and the lack of such fundamental livelihood requirements as clean water and adequate sanitation.... In their desperate struggle for survival, they are currently left with little choice but to use whatever resources are within reach, ignoring — often knowingly — the impact on the environment. Development activities must therefore be pursued to enable the local population to manage their resources more creatively. Their participation and empowerment are necessary preconditions in the search for sustainable solutions.”

Deepak Bajracharya, 1994

Primary Environmental Care for Sustainable Livelihood

[\[next\]](#) [\[previous\]](#) [\[contents\]](#) [\[home\]](#)

IV. LEVELS OF PROGRAMME EVOLUTION IN GOING TO SCALE

Economic and social development have been systematically analyzed using many descriptive models to explain the complex interactions. None have described adequately, however, a sequential process which seems to be common among those projects that have moved from small successful demonstrations to a larger process of extension. In fact, the complaint is often heard, “What use is another demonstration project? ... It can never go to scale.” This monograph describes such an extension process derived from observations of worldwide experience. A common expansion process includes three sequential phases or levels for which we have used the acronym SCALE that has a different meaning for each of the three levels of extension. Our observation suggests that these phases of evolution are found in virtually all projects that have become successful, large scale development initiatives. Particular components will vary from application-to-application, some may not be present at all, or relationships may develop in differing sequences. In proposing the following sequence we assert that expansion from a demonstration to large scale replication appears to be most effective when it does so through an intermediate phase. However, as will be articulated later when the going to scale sequence is illustrated by selected cases, this intermediate phase is highly variable and does not follow a prescriptive format.

The First Stage: SCALE

(Selecting Communities As Learning Examples)

Most countries have at least one, if not many, successful community development project(s). The first task is to select one such project to become a training and experimentation site. The selected site may have been started as a primary health project, or a small loans credit program for women, or a community forestry project, or some other worthy activity. It may have been started by a governmental agency, NGO, university or spontaneously by the communities. Although successful in at least one activity, the selected project should be ready not only to expand into integrated services, but also to become a demonstration service for extension to other communities. The selected communities must be ready to take on the mandate of sustainable human development that is to be: pro-poor, pro-nature, pro-jobs, pro-democracy, pro-women and pro-children.

The selection must stress characteristics that can be readily replicated in other communities in that region. Demonstration communities should not have unique resources to which adjacent communities cannot also have access. Equally important, the selected communities must be prepared to go to the extra effort and expense of transforming themselves into training and demonstration centers for their region. A key challenge in the SCALE process is to support empowerment of communities and eliminate the feeling of dependency which emerges when development is considered a government obligation.

In the selecting of communities, there must be a willingness by the community selected to become a partner. People must realize that sustainable development is a process in which they must invest and one in which they join together with neighboring communities. To establish a new sense of their own potential capacity and ownership it will be helpful for community members and officials to travel to other projects to see concrete examples of how community dynamics can work. This will tend to reduce the natural feeling that old values, identities and practices are being threatened and that there is a new role for them in helping other communities.

Figure 1

SCALE

Selecting Communities as Learning Examples

Action Process:

- **Selecting an Effective Project**
- **Community Mobilizes for Action**
- **Government Policies & Resources**
- **Access to International Expertise**

The Second Stage: SCALE Squared

(Self-help Center for Action Learning and Experimentation)

An appropriate community based project should be transformed into a Self-help Center for Action Learning & Experimentation (SCALE Squared). All communities in the region or political unit surrounding the original SCALE communities should be encouraged to become part of the training and field experimentation process and participate in improving their own future. Those that do not wish to join immediately can wait, watch and join the process when they are ready.

Major changes should be implemented quickly in SCALE communities as they transform themselves from just providing services to becoming a continuing base for field training and experimentation. Each SCALE community will become part of a local “development school” to which other communities and officials come to learn. It should show visible and relevant developmental benefits that are convincing.

Why should a selected community participate in a SCALE Squared process since they must collectively choose to take on difficult problems and make considerable commitments of time and energy? To stimulate participation, it is evident that prestige and official recognition may be used to provide rewards for taking on extra burdens. However, it is important that significant monetary rewards should not inappropriately elevate the community or its leaders. If communities develop so they are no longer representative of the region, there should be arrangements to select a new SCALE Squared with more typical conditions.

A parallel question is why should neighboring communities come to learn at SCALE communities? To encourage extension, communities can be given modest financial incentives to undertake innovative activities. They need resources for start-up costs and to reduce the need for risk-taking. To stimulate participation, it is helpful to have modest “block grants” that each community can allocate as it decides on locally determined priorities.

Figure 2

SCALE Squared

Self-help Center for Action Learning and Experimentation

Guiding Principles:

- **Focus on Children and Mothers**
- **Ecosystem Protection**
- **Population Trends**
- **Sustainable Livelihood**

The Third Stage: SCALE Cubed

(Sustainable Collaboration for Adaptive Learning and Extension)

The third phase of the scale process is SCALE Cubed (Sustainable Collaboration for Adaptive Learning & Extension). Systematic extension can radiate through surrounding communities as they learn to use techniques learned in SCALE training. Interventions and new systems should be easy to replicate and allow for self-generating, sustainable community adaptation. For this on-going process, communities should understand how to analyze their own problems, make collaborative decisions, modify activities for greater efficacy and efficiency, and then evaluate the process and repeat the cycle in subsequent decisions. Each of these processes is discussed in more depth later in this monograph — and they work synergistically to achieve the three objectives of primary environmental care: sustainable management of the environment; meeting of basic livelihood needs; and empowering communities to self-directed development.

Experiential education helps in learning the skills and ideas for this environmental protection and human development. Empowerment depends on a critical mass of motivated adaptation and extension as communities strengthen their local leadership by training and travelling to see other projects, improving financing mechanisms, and reforming community structures to adapt to changes in the ecosystem and cultural conditions. Many community members across a broad socio-economic spectrum should be involved in this learning by doing ... this action learning.

The most important skill in going to scale is not learning new technologies or receiving modern schooling, but rather for communities, officials, and experts to learn how to work together. This may be more difficult for some communities than others. Many communities are stagnating partly because their culture and/or politics evolved to exclude certain members and perpetuate earlier patterns of discrimination or hostility. Communities need support to overcome long standing prejudices and ethnic rivalry. Communities need to learn the competencies of group process rather than order giving and control. Officials and power holding institutions, organizations and cultural groups need recognition and rewards when they let go of power that has previously been their traditional right.

Figure 3

SCALE^{Cubed}

Sustainable Collaboration for Adaptive Learning and Extension

Requirements For Each SCALE Community

Organize its own data gathering and research capacity by using a regionally designed methodology for community use. This method should be simple enough for community members to use and administer, but also one whose accuracy can be confirmed by parallel outside verification. One such process has been given the label Self-Evaluation through Essential Data (SEED) and is discussed below.

The SCALE community should actively experiment to develop an expanding package of practical interventions that are straightforward to implement and that provide cost-effective sustainable development in the local context. Such interventions may include various priority activities such as primary health care and family planning, a community literacy program, grassland or forestry management, a system of basic food security, urban agriculture, non-exploitive income generation, water and sanitation project, etc. It is best to start with generally desired development interventions that will produce results rapidly and will help to convince skeptical communities and families. Abundant experience is available to guide the adaptation of practical methods of experimentation. For specific sectors there are appropriate specific methods such as Health Systems Research ([Taylor 1984](#)) or Essential National Health Research ([Evans 1990](#)).

A SCALE Squared project should start by training people from the surrounding area and local officials. These people need to learn: a) how to gather and analyze data in their own situations using simplified yet appropriately accurate methodologies; b) how to learn new patterns of working together; c) how to allocate resources according to priorities and for sustainable progress; and d) how to develop and implement their community's evolving package of interventions.

UNICEF/DO193-1726/Lenogne

SEED: A Methodology for Increasing Community Awareness and Capacity

Among the various rapid data gathering and research tools, we have found that Self-Evaluation with Essential Data (SEED) is a measurement tool that can be used either as part of the SCALE process or independently. SEED shares many features with Rapid Assessment Procedures (RAP) and Participatory Rural Appraisal (PRA), ([Scrimshaw 1992](#)) and evolved out of those earlier methods. ([Taylor-Ide and Taylor, 1995](#)) It brings together several unique features. First, it is comprehensive in examining social factors, economic dimensions, and ecosystem variables. Second, it is rapid and does not require extensive field work, a continuing information system or lengthy data analysis. Third, it is low-cost since it can be administered by the community. After the method is modified to meet the needs of a particular region, it should not require outside experts.

The key to SEED is the concept of *essential data sets* or gathering only the minimal information needed for decision-making. In PRA this principle is called “optimal ignorance” and associated with it is “appropriate imprecision” or using methods that are useful for practical operational judgements rather than sophisticated detail. We have found that virtually always there are simple indicators that can be readily measured to reliably produce useful results. Indicators are necessary in any case be-

cause the interacting variables are so numerous and complex that all data sources could not be followed even in sophisticated research. The challenge is to choose a few appropriate and sufficiently accurate indicators that represent a group of associated variables.

For example, communities can follow their own demographic trends. Traditional research would try to define a population profile with sex/age distribution and marital, economic, educational status, etc. The people in a community tend to know such information intuitively but what is more useful for a SCALE survey are data that show changes in population status using readily calculated indicators such as number of births in a year and couples on family planning over time. For some items, data on individuals may not be needed and aggregate household data may be sufficient for many purposes. For community use, systematic, science based testing needs to ascertain the variables that are most useful and the indicators that most accurately measure these. Once these have been determined for a particular regional situation, the methods can be widely used by various local groups.

This determination should simplify the process of gathering information rather than doing what often happens in research, where procedures are made much more complex for only a few percentage points increase in precision. For instance, to help local groups make a community diagnosis of the frequency of a given problem, experts should emphasize constant simplification and not follow their usual tendency for concentrating only on precision. The following are four examples of such appropriate simplification of otherwise complex variables.

- With three simple indicators collected by high school students visiting every home annually, it is possible for a community to follow improvements in health status. A complex reporting system of multiple diseases is not necessary. The annual survey can collect information on all deaths using a simple set of symptoms and terminology so as to define the five main causes of death. Nutritional status of all children under age three, as gained by using a simple tape to measure mid-arm circumference, tells much about child health. And third, a simple tabulation of infant mortality looks at the most vulnerable health point in the community.
- In most developing countries childhood pneumonia is among the top three causes of death. In babies, however, pneumonia is hard to distinguish from other common respiratory infections. Medical practitioners generally use diagnostic methods developed for adults such as percussion and listening with a stethoscope, but these are not accurate in babies. For more precise diagnosis, blood tests, X-rays and lung punctures are required but these tend to be hospital procedures not available in poor communities. New algorithms based simply on respiratory rate now greatly simplify the process. An infant under 2 months with difficult breathing and more than 60 respirations per minute has a high probability of pneumonia; with babies 2-11 months the threshold respiratory rate is over 50/min; and with children 1-3 years, over 40/min. Using this simple technique, village health workers can distinguish this important cause of death from other respiratory infections, start antibiotic treatment based on a sound diagnosis and save the lives of about half of the babies with pneumonia.
- As forests are cut for fodder, fuel and timber, nature provides a variety of simple yet sensitive indicators of the severity of change that do not require a census of forest trees. In the Himalayas birds are a rather precise indicator. In Nepal, if pheasants are present, the habitat is undisturbed. If spiny babblers are observed degradation of the habitat has started (especially under 2,000 meters). If the common myna, sparrows or house crows are found, then the forests are in serious trouble.
- Sometimes a simple technological tool can help to measure a useful indicator. The status of water quality and quantity is vital for sustainable human development. Knowing about water

born microbial contamination is important in preventing waterborne infections. This used to require competent laboratory support but good measurements can now be made with a simple, one-piece coliform culture package combined with an even simpler, cost-free incubator: the kit is taped to the human armpit for 24 hours.

Another simple method is to turn over rocks in local streams and observe the larvae and insects that are found. Field work by a local biologist can readily identify species that indicate freedom from pollution.

Rapid, low-cost, holistic community assessment of important variables relating to environment, population change, and locally relevant social variables require joint action. Expertise from appropriate scientific disciplines is needed to identify two or three key indicators for each variable so as to construct an essential data set that is valid for the varied conditions in that region. Selection of valid indicators should be done in the field jointly by scientists familiar with the area along with local people to share understanding and decide what measurements would be both reliable and within the capability of village people and resources. As experts and local people agree on the essential data sets for a region, it will be necessary to use field trials to adapt data gathering methods to local conditions. The community should be involved in suggesting and critiquing alternate approaches and deciding who should collect what kinds of data. Figure 4 is a listing of essential data sets that have been used in field trials of the SEED methodology in Himalayan valleys ([Taylor- Ide and Taylor, 1995](#)). In most instances, such a complete list of variables will not need to be assessed. Among such a broad list each community will have a smaller cluster of variables that are particularly relevant to its situation, and for these the appropriate indicators will need to be determined. Examples are given above of what sort of simple yet sensitive indicators are possible and may be determined for a given region with expert assistance.

Figure 4

SEED Variables for Which Indicators Were Developed in Nepali Villages

Population

Population Numbers & Age Distribution
Trade & Tourism

Mortality & Fertility
Transport & Communication

Family Planning Use
Industry

Migration
Government & Foreign Aid

Economic

Health Status
Administrative & Political Structures

Education Status
Technologies Being Used

Housing Status
Animal Husbandry Practices

Equity Status
Forest Uses (Wood Use & Medicinal Plants)

Historical Self-perception
Consumption & Wealth

Expectations for the Future

Environment

External Adaptive Process

Soil
Health Services

Water
Formal Education Services

Energy Potential
Administrative Infrastructure

Plant Communities
Financial Institutions

Domestic Animal Communities
Food Security Supports

Wild Animal Communities
Outside Business Industry

Energy Potential
Institutions Promoting Change

Energy Use

Once the results from a SEED survey are available, experts should “triangulate” the findings to verify their accuracy by using more rigorous scientific survey methodology. Developing the SEED process requires expert support but the field surveys themselves are best done by local people. SEED surveys are an excellent way of involving young people. As a class exercise, students can use the survey to understand relationships between people and their environment. They can learn facts about local life, history and culture by gathering data in their own community. Such a beyond- the-classroom process will enrich academic content by bringing together subjects such as: physical sciences, biology, social sciences, history and mathematics. These topics that are often related to global or national issues but seldom to local communities. Involving youth is an effective way of including and creating awareness of the needs of ethnic minorities, the poor, female students, and social groups who are often discriminated against in order to promote equity.

Direct instruction and supervision in doing household surveys is essential to ensure consistency, but students are conditioned to following procedures set by their teachers. The formal structure and learning atmosphere of the school makes it easy for outside experts to participate. Community people should also be trained to do simple analyses that will be readily understood by village decision makers. Other groups in the community can also be involved, such as a women’s or men’s organizations, government workers, or specially trained data collectors.

When members of the community collect and analyze the data, people are less likely to ignore or dismiss the findings than when they are simply given information gathered by government agencies or outside experts. The survey process should be repeated each year and the information stored to guide change in the community. The immediate benefit is to provide facts for current decision making. However, annual surveys also become a way of monitoring trends to observe how long term change affects the sustainability of the environment and resource base as well as the quality of local action. In addition to being rapid and low-cost, SEED has five distinct advantages:

- **First**, in a streamlined and highly selective form, it enables communities to find out what is happening to their own community.
- **Second**, it is intersectoral because problems are seen from the perspective of the people.
- **Third**, it allows comparisons from one local situation to another with the advantage of considerable mutual learning in a region where conditions are rather similar.
- **Fourth**, it permits comparisons against global standards.
- **Fifth**, SEED enables comparisons to be made over time so that communities can monitor changes in the people, the environment and developmental programs.

[\[next\]](#) [\[previous\]](#) [\[contents\]](#) [\[home\]](#)

V. SUCCESSFUL EXAMPLES OF SUSTAINABLE HUMAN

DEVELOPMENT

Historical Background

Successful grassroots projects around the world (for example many of UNICEF's area-based development programs) provide concrete demonstrations of sustainable human development that have worked under a variety of economic and political systems. However, it has been difficult to "go to scale" from these many effective, local demonstration projects and cover regional populations or whole ecosystems. Some projects have made this transition. By examining those that have been successful, it is possible to define principles for how people in any part of the world can move from initial success to general implementation. (A more complete presentation of such a case based analysis of social development is found in a companion publication to this document — see [Taylor et al., Partnerships for Social Development](#), 1995.)

In this section, selected examples demonstrate that it is possible to "go to scale" from pilot projects. Most of the examples presented here started out as sectoral programs but one of the earliest was multi-sectoral from its inception. In the Ting Hsien Experiment in China in the 1930s, Jimmy Yen developed a fourfold program of rural reconstruction that included literacy, community organization, livelihood, and health and family planning. A particularly notable achievement was the first demonstration of modern primary health care, conceptualized and organized by Drs. John B. Grant and C.C. Chien ([Seipp 1963](#)). This demonstration led directly to the Chinese Barefoot Doctor program which, from the 1950s to the 1970s, provided uniquely equitable services for almost a quarter of the world's population.

In the 1930s and into the 1950s in India a series of demonstration programs for village transformation were developed by idealistic reformers such as Gandhiji and Tagore. Innovation continued through many scattered projects, some still functioning today that are offering services with equity and sustainability. A rapid evolution of thinking about sustainable development in the Indian Subcontinent occurred during India's great experiment with community development during the 1950s. Under Nehru there were high expectations as a major national effort organized the whole country into community development blocks. However, the national structure became highly bureaucratized and rigidly top-down with a resulting loss of momentum. The most tangible benefit was that the village development workers provided an organizational framework that facilitated the Green Revolution.

Ting Hsien was able to go successfully to scale, and the Indian community development blocks were not. The Chinese expanded through community partnerships. The barefoot doctors system evolved in a highly decentralized, community specific process in which they reported to their village communal systems, got paid out of the communal workpoints, and the communities had a mechanism for supervising and keeping accountability. In the Indian context, expansion was attempted through a top-down process of central government expansion. The block development workers reported to a government supervisory and pay structure, not to the communities they served. The Indian experience violated every one of the three basic principles mentioned earlier.

Internationally recognized examples of successful programmes to stimulate self reliant development are the work of the Grameen Bank. These programmes have shown unusual capacity for practical learning through incremental identification and correction of a succession of practical problems. Their activities moved in twenty years from postwar relief to broad based development in community centers, functional education, agriculture, fisheries, cooperatives, health and family planning, credit

programs for women, etc. As the scope of activities expanded, so did geographical coverage to nationwide programmes today. Most activities depend on providing practical training, mainly of village women, by committed professionals in a people-centered approach targeted to the poorest families. Participatory research uses peasant panels to identify problems and develop solutions, including how to deal with corruption among officials. Numerous other examples exist around the world of successful large scale development, some of which will be presented later in this monograph.

In reviewing global experience, Korten (1987) summarized lessons from the 1970s in programs which successfully extended community based sectoral services to large populations. His analysis led to a sharply defined distinction between “blueprint” approaches and a “learning process” for systematic expansion from successful local projects. In the blueprint approach, professionals provided data from studies and used pilot projects to plan cost-effective program implementation. Administrators then took over for a next phase of implementation of the blueprint following detailed specifications and schedules from the original demonstration. A third group evaluated whether planned changes occurred, usually with a project cycle of three to five years. This approach, which is standard for construction projects, is totally inappropriate for community based development where objectives are multiple and negotiable, where outcomes are unbounded by time, where community organization and ecosystems are always adapting, and where costs are unpredictable partly because of self-financing. In the “learning process” approach there is deliberate embracing of error in order to learn, flexible planning with the people, and progressive search for new knowledge linked to action. Three stages were defined: learning to be effective, learning to be efficient, and learning to expand, with the last being especially problematical in standard top-down, foreign aid projects.

Using a different conceptual approach, Myers (1992) reviewed world experience relating to extending developmental projects to scale and concluded that successful projects can expand but do so by following one of three approaches. The *expansion* mode proceeds by taking one model which works at one site and extending that through appropriate adjustment to the desired scale and coverage. The *explosion* mode skips the step of starting with a tested model but begins on a large scale with a design made into an action priority by strong political leadership and, where technical requirements are needed, designs and skills provided by experts. To accommodate differences of locale or people, adjustments may eventually evolve over time in specific applications. The *association* mode grows piecemeal — sometimes there is a plan and sometimes growth simply happens. What characterizes association mode projects is that they evolve in their own contexts (rather than being driven by central planning or leadership) and once evolved they then relate to each other by association in networks to address larger systemic needs.

Drawing on principles from Korten and Myers, as well as others who have studied the process of implementing large scale development, our review has sought to identify whether there are common principles in successful extension. Such a process is proposed for consideration in this document under the acronym SCALE, that was described in the previous section. The efficacy of this approach is illustrated by the following examples from around the world. The first group provides three illustrations of developmental projects that went to scale within a particular developmental sector and achieved global or national coverage. The second group of six examples provides cases of development projects that began with one sectoral intervention and expanded to additional sectors. It is interesting that those among the nine cases that more closely followed the SCALE sequence seem to be more successful in their expansion.

Examples of Expansion Across Geographical Regions

The Child Survival and Development Revolution

A dramatic example of global expansion is the UNICEF led Child Survival and Development Revolution that has had great worldwide impact in less than a decade. It grew according to the explosion mode described by Myers. In 1984 a UNICEF meeting drew on contemporary international health field research proving that selected low cost, high efficacy interventions were ready for mass implementation. The GOBI acronym became the framework for the Child Survival Revolution — **G**rowth monitoring, **O**ral rehydration, **B**reast feeding, and **I**mmunization. Later FFF was added — Female literacy, Family planning, and Food security.

Global commitments were made by most countries and reinforced by world leaders at the Children's Summit in 1990. Millions of dollars were generated in international funding and this stimulated many times more in national resources, both financial and in personnel time. Many countries shaped the priorities of their health ministries to target these child survival goals for children. WHO/UNICEF estimates that more than two million children are now surviving each year because of these programs. ([SOWCR95](#))

Childhood immunization has achieved the most dramatic success among the GOBI priorities. Six childhood diseases were targeted: measles, poliomyelitis, tetanus, diphtheria, whooping cough and tuberculosis. The global goal of the Expanded Programme for Immunization (EPI) was to achieve 80% coverage of children in all countries by 1990 and WHO/UNICEF monitoring through cluster sampling surveys suggests that a remarkable number of countries achieved that goal. The challenge now is sustainability in maintaining coverage. EPI tried to work through existing health services and has successfully reinforced the three basic principles of the 1978 Alma Ata World Health Conference: peripheralization of health services; community participation; and intersectoral cooperation. EPI showed that health services can reach remote and needy areas and make progress toward equity in distribution and social mobilization. This has had positive impact on both the credibility and sense of accomplishment among health personnel. The focusing of national and international attention on limited, measurable objectives produced in many countries a unique appreciation and strengthening of the role of health in social development.

Other GOBI and primary health care interventions require more family and community participation than making a few visits to a health post. They require changes in daily behavior and child care practices that introduce greater challenges for sustainability. Significant successes have, however, been achieved with Oral Rehydration Therapy (ORT) — and more recently with Acute Respiratory Infections (ARI). With worldwide progress in reducing diarrheal deaths using ORT, childhood pneumonia has become the number one cause of death among children around the world. The potential of reducing ARI mortality by counting rapid breathing and treating with broad spectrum antibiotics demonstrates that the Child Survival and Development Revolution offers opportunities to add new interventions to the initial GOBI vision and can be flexible in adapting interventions, such as micronutrients, to changing situations as part of an expanded emphasis on integrated care for the sick child.

Breast feeding and growth monitoring both depend almost entirely upon changing perceptions and behaviors of mothers and other family caretakers. A successful part of promoting breast feeding has been the “baby friendly” hospital initiative that has in some places greatly helped extension of maternal and child health in urban areas. In countries with good coverage of primary health care facilities, such as China, the inclusion of hospitals as a focus for primary health care has been useful. More than

1,000 Chinese hospitals are now certified as “baby friendly” because they promote breast feeding and not infant formula.

Growth monitoring demonstrates the need for flexibility in global extension, a trait that has often not characterized programmes following the explosion model of going to scale. Growth monitoring did not fulfill its earlier promise of producing spontaneous stimulation of growth promotion by families and tended to become ritualistic with personnel filling out growth charts but not promoting changes in child feeding practices. To address the worldwide need for synergistic actions to prevent protein-energy and micronutrient malnutrition as well as common infections, a new approach is being evolved. This is demonstrated in the Triple A process of the Iringa project that identifies needs through regular surveillance (Assessment), helps families understand causation (Analysis), and introduces community based control measures in the home (Action). One positive aspect of these holistic approaches is that they can be integrated with another priority that should be added to child survival: to improve reproductive health and family planning services.

As the SCALE process would advise, the Child Survival and Development Revolution has been successful in its expansion because, while following the goals of GOBI and FFF, it did not adhere to a standard model. Each country evolved its specific services, essentially a community specific, Scale Squared model, and over time most countries further adjusted this model toward greater local specificity. This adaptation was more successful in some instances than in others. Key variables determining success being, once again, the already mentioned three basic principles of sustainable human development, how careful countries were to base adaptation on the data they were receiving, the degree to which partnerships were created; and the attention to sustainability.

The China Model Counties Experience

A second example of how projects can grow to cover large populations is China’s experience in primary health care. As mentioned earlier, in the 1930s the Ting Hsien experiment was the first to develop a practical conceptualization of primary health care. The approach evolved into the Chinese Barefoot Doctor program which grew to reach almost a quarter of the world’s population. In Myers terminology, this rapid expansion was an example of the expansion model where a specific demonstration became the vision for mass replication.

An evaluation in 1979 ([Hinman, Parker, et al 1982](#)) showed the extraordinary success of China’s health services. Teams from China and the U.S. were exchanged over a one year project and conducted an in-depth analysis of health conditions in Shanghai County outside of Shanghai City, and in Washington County, Maryland. Both counties were presumed to represent what could be achieved in providing good quality care under the two health systems. The results showed that basic health statistics were essentially equivalent. There were only a few percentage points of difference in mortality rates and expectation of life. Current health status was similar with cancer, heart disease and stroke being dominant in both countries. The one great difference was in cost. Careful aggregation of all private and public health care expenditures produced figures that allowed comparison.

In Shanghai County total costs for health care were the equivalent of US\$14 per capita per year. In Washington County, Maryland, costs were about \$1,400 per capita per year. The 100 times greater expenditure was producing essentially equivalent health status in the two counties. Obviously, this was partly related to great difference in all costs of living. However, a major difference was also that barefoot doctors were the persons providing care in China while in the U.S. it was highly trained specialists. Health professionals in the U.S. discounted these comparisons. They contended that

patient satisfaction would be greater with the more skilled professionals, but people in China seemed very satisfied with the immediate availability of care at their neighborhood health posts and the opportunity for referral to more skilled professionals when needed. In addition to the simple health care provided by minimally trained, part time barefoot doctors, an important factor in the remarkable improvement in health status was that the people's life-style in China encouraged healthy behavioral practices.

Subsequent China experience provides an illustration of the reality that major transitions are needed to accommodate to changing situations. With Deng Xiao Ping's economic reforms, starting about 1980, a total restructuring of China's economy dissolved the communal systems and returned responsibility to families. The workpoint system that had funded the barefoot doctors disappeared abruptly and China's rural health services collapsed. Over two million barefoot doctors realized that in order to support their own families they would have to become full time farmers. To encourage their return to local service, the health system gave them the more respectable title of Village Doctors, made intensive short courses available to upgrade their skills, and required them to pass accreditation exams. About half returned to health work, usually almost full time. However, what had been one of the world's most equitable health systems shifted abruptly to being based largely on fee-for-service private practice with the poor having increasing trouble getting access to care.

The Ministry of Health, with UNICEF support, tried to retrieve the benefits of the earlier system by promoting maternal and child care programmes with decentralized county services using community or private financing. The earlier programme that had been built by following the expansion mode from Ting Hsien now had to go back and create a new model. From 1980 to 1983 ten counties worked with regional medical and public health schools, the government, as well as UNICEF, to evolve county specific models. In 8 of the 10 counties appropriate adaptations were made. Services rapidly extended to all villages and great improvements occurred. But in the other two counties the focus was on building a maternal and child health hospital and little overall health improvement occurred. Lessons learned were then used to streamline and expand the program to 35 counties in all of China's provinces with considerable influence on services in neighboring counties. Two years later, the programme was expanded to 95 counties and after another two years it was expanded again to 300 of the poorest counties in China. In 15 years this new adaptation of the old programme grew to cover over 200 million people directly and many millions more by association.

The expansion in China from 10 to 300 counties demonstrates clearly the SCALE process — especially that the role of the Scale Squared community changes as expansion moves to larger numbers. In the first phase, each of the 10 counties was highly experimental. There was a lot of professional involvement of experts. Each county was trying to find the balance of services that would work — and could be funded with local revenue sources. Once basic models were developed, and expansion began, these counties became training centers as the 10 counties went to 35, but considerable experimentation was still occurring by each county as this expansion was occurring. As extension went to 95 and then 300 counties, the degree of locally specific adaptation decreased. The key need then became training.

The Green Revolution

A third and very well known example demonstrates how development programmes can go to scale. This is the expansion of the concepts behind modern agriculture that led to The Green Revolution. In developed countries, and especially in the U.S., beginning in the late 1800s a new pattern of agriculture evolved that was based in science and technology. By 1950 it could be demonstrated through

controlled experiments that phenomenal expansions in food production were possible if agriculture practice brought together the advances of: a) new genetic strains of grain, b) chemical enrichment of soil to meet specific nutrient needs, c) accelerating plant growth through irrigation, d) use of chemical pesticides, and e) introduction of mechanized farming. In most cases, expansion to larger scale farming was promoted with bigger fields and farms. Change was coordinated around the specific needs and capacities of each locale. Vast areas previously not used for food production were brought under cultivation.

It was obvious that since climate, soils, culture, food preferences, food preparation, and economic resources differed greatly around the world, the mix of services provided by international assistance must be regionally specific. International centers for collaborative agricultural research were established in various regions of the world in a planned global extension of the new methods and a global network was created among these centers. Each center specialized in particular categories of foods or agricultural processes. Local agricultural colleges adapted new products and methods to specific conditions and trained personnel.

The Green Revolution is a classic demonstration of the SCALE process. Around the world a collection of macro-level Scale Squared centers were created. These were both the free standing agricultural research centers mentioned above and also research oriented agricultural colleges. At these sites the major scientific experimentation occurred. At these sites the high level fieldworker training also occurred, educating large cadres of agricultural workers. With the basic methodology tested and the personnel trained, expansion was then possible at the village level.

As the SCALE process suggests, communities had to be engaged, and the first of these in each region was that region's Scale Squared community. Changing agricultural behavior was not something government could impose on its people — large government led agricultural revolutions show dramatic failure rates around the world. Individual communities and farmers were solicited. At first in each community the new methodology was an experiment. As the basic mix of services was refined so that it showed dramatic success, the extension process moved to an emphasis on training farmers. The process spread rapidly to virtually every rural community of the world in less than two decades.

When the Green Revolution started in the mid-1950s, many countries around the world were facing severe food shortages. Famines were projected for the large populations of the Indian subcontinent, Southeast Asia, Sub-Saharan Africa and Mexico. However, as a result of the new approach, world food production expanded many times over 1950 levels. Through the 1960s and 1970s nutrition improved greatly and famines virtually disappeared from the planet. Solving hunger problems continues, however, to be a continuing dilemma with the need to balance population growth and inequitable distribution. Increasingly, a broader perspective is evident that looks beyond simple food production and considers complex and difficult environmental and social equity questions that relate to food production, consumption, and economic wealth.

Examples of Expansion Across Development Sectors

Health As The Entry Point — Jamkhed Project, India

The Jamkhed project in Maharashtra, India ([Arole 1995](#)), is an outstanding demonstration of how systematic expansion was possible from effective village health care into a program of integrated services for family planning, agriculture, forestry, water supply, and income generation. The project, initiated by a nongovernmental organization, started in a few villages and has expanded progressively

to cover an area with 250,000 population and continuing to expand in a growing educational program to other areas. When the work began, the area was so poor that one-third of the villagers left during the drought season to work in subsistence construction jobs elsewhere. Now, as a direct result of project activities the area has to import labor. Most of this development has been stimulated by low caste, poor village women, mother's clubs and young farmer's clubs. Infant mortality was lowered from 176/1000 live births to 18/1000 and birth rates fell from 40/1000 to 19/1000. Seventy percent of the couples now regularly use family planning. Literacy more than doubled, with improvement especially among women. A small loans program is in place. Community forestry has planted millions of trees and the ecosystem is becoming revitalized and less drought prone. The project has become a training center to extend self-help capacity using village workers as trainers. ([Arole 1995](#))

Jamkhed clearly shows the progression from Scale One, when the community was first selected by the nongovernmental organization, to a regional level Scale Squared community after it had evolved an effective package of developmental services and began to train surrounding communities, to now a global Scale Squared center to which people come from around the world. The communities now visible in many places throughout Maharashtra, India, that are on their own implementing the Jamkhed lessons, similarly show themselves to be at the Scale Cubed communities. They are taking the ideas and adapting them to their own circumstances.

Urban Basic Services As The Entry Point — Curitiba, Brazil

Third World urban conglomerations are mushrooming in size and number. By the year 2010, it is projected that more than 20 cities in the world will have in excess of 10 million people, compared to 9 such cities today. Fifty cities will have over 5 million people, compared with 23 such cities today. Increasing numbers of children in these cities will be growing up in a cultural chaos without the family supports for cultural norms that were once based on traditional agrarian and family wisdom. These exploding cities are prone also to environmental chaos with uncontrolled pollution, strains on basic infrastructure and civil strife.

Curitiba, Brazil, is one of a growing number of demonstrations of how self-reliant improvements can be made, branching out from urban welfare services into agriculture, recycling, and other essential and more sustainable urban methodologies. Twenty years ago Curitiba's population was 500,000. Today it is 1.6 million. During that time, the city planted 1.5 million trees, *reduced* automobile use, recycled enough paper to save 1,200 trees per day, created a simple technology that enables buses to run as quickly and efficiently as subways, and expanded the area of its city parks one hundred fold. Most of these programs are self-financed by local neighborhood associations that receive a small percentage of the money the projects generate in return for providing services.

Curitiba is reaching the formerly unreachable. For example, the City's waste recycling program employs 100 disenfranchised people, recent immigrants, transients, or homeless people. At schools and stores needy residents can exchange a bag of garbage they collect for a bag of surplus food the city has bought from nearby farms. An organized programme promotes (and safeguards) the hiring of street children by local shops and industries, this is a youth jobs programme coordinated by retirees. Most importantly, 40% of the City's budget is invested in children and social programmes. ([Barney 1993](#))

The active expansion of Curitiba has been primarily within Curitiba, although recently there have been some interesting extensions into other Brazilian cities. What is most remarkable about the Curitiba expansion is how innovation has grown to transform that urban environment. Success in one area, for example in transportation, bred success in other areas, for example meaningful employment to the

homeless. A level of scale was achieved across sectors rather than geographically, although changing a city of 1.6 million is significant. The experimentation and adaptation process characteristic of Scale Squared communities when it happened in one area was transferable and spread horizontally. This would not have happened if the development method was something “owned” by a group of teachers who were passing along golden truths. Rather, the mindset was one owned by a community of people who, once empowered in one area, were able to pass it along into other areas.

Primary Education As The Entry Point — Peru

Curriculum change is a powerful entry point for reaching parents throughout a community as well as a method to change the attitudes and practices of the next generation. An example from Peru illustrates how the hands-on, experiential based learning of student gardening proved to be a takeoff point from which community involvement moved rapidly beyond the initial environmental and nutritional objectives of gardening.

In the Peruvian Andes, a decade of initiatives had experimented with improving the relevance of schooling. Beginning with efforts in reforestation, soil erosion and crop protection, the programme moved from community action to the household level through school gardening and seemed to pick up momentum. In particular, parents were encouraged to complement school gardening projects with kitchen garden plots at home to which children brought young plants from school. Most remarkable is the dialogue these new plants and alternative gardening techniques stimulated with parents. Beyond simply establishing gardens to introduce new plants into the diet — which was the direct program objective — unplanned objectives evolved as parents began to participate in earlier soil erosion and reforestation projects. Dialogue with children expanded parental education for them to learn while they were sharing traditional wisdom with their children. ([Hart 1994](#))

Expansion in the Andean instance, among the cases presented here, illustrates the value of persistence. A decade of attempts at improving the relevance of schooling had met with only incremental success. However creating an action link between school and home engaged the community and expanded what had been solely a curriculum improvement program. The recognition in the SCALE process that developmental education is action based appears to be critical. Certainly school based learning has a useful place, however this Andean example demonstrates vividly that even the schools may be more effective in achieving educational relevance when they use experiential based instruction techniques.

Conservation As The Entry Point — Mount Everest, China

North of Mt. Everest four counties in the Tibet Autonomous Region of China have organized a new type of nature conservation. In March 1989, a unique environmental preserve was set up where there are no professional wardens and the management is by local county governments with a variety of special administrative supports. Funds usually spent on salaries of professional wardens are assigned for allocation by the local people. Conservation is integrated into activities such as health services, schools, transportation, forestry, wildlife protection, agriculture and grassland management. Ecological preservation was integrated into development rather than being separated as happens when the land is taken away from local people and environmental protection is carried out by individuals other than the local people.

The Denmark-size region of the Qomolangma Nature Preserve includes an ecosystem that ranges from the highest point on earth, to high altitude deserts on the Tibetan Plateau, to wet subtropical

jungles in Himalayan valleys. However, common to all is a Master Plan that sets overall targets, creates management zones, and provides mechanisms for cooperation among communities, regional agencies, national services, and international technical and financial expertise. A question used by officials and citizens in decision making may have broad relevance in guiding other programmes as they integrate development and conservation. When discussing a road, a school, a forest, they ask the Qomolangma (Mt. Everest) question: “What will be the consequences after 10 and 100 years of what we choose today?” (“The Qomolangma Nature Preserve,” in [Taylor, et al, 1995](#))

Among the various cases presented here, the Qomolangma Nature Preserve is the only one that from early on in its planning was set up to be an experimental and training site for broader extension. This nature preserve is designed to function as a Scale Squared center for nature preservation and sustainable development throughout Tibet. The Tibet Autonomous Region already has protected 28% of Tibet, which is the highest percentage of protected area of any region except Greenland. With more than 40% of Tibet expected to be set aside, there is a recognized need to have both models of sustainable human development proven as well as places where others can be trained.

Income Generation As The Entry Point — Nepal

In the past it may have been possible for families to earn their living from one activity, for example farming, shop keeping or livestock. Now, however, increasing numbers of families find it necessary to develop multiple complementary sources of income. An illustration from Nepal shows how UNICEF supported an ancient cottage industry, initially to help expand domestic income for women but this became an entry point into women’s welfare, reforestation, and off-farm employment. As the project expanded, it stimulated a potable water and public latrine initiative, school and health centre improvement, veterinary services, flood control and soil conservation, as well as a micro-hydroelectric installation.

In 1981 UNICEF and the Small Farmers Development Programme in Nepal started a three-year training and grant program to organize rural lokta (a bush whose bark makes traditional Nepali paper) production and manufacture. A marketing system was created in the capital city while harvesting and production were in an impoverished region in western Nepal. Harvesters and paper makers were trained using modifications in traditional techniques that were three times more efficient.

As the families involved in production, transport and marketing increased from 282 families in 1982 to over 1,400 families 10 years later, it became clear that these initiatives could expand even further. Improving the livelihood of families also improved conservation of natural resources — protecting wood sources (for fodder and fuel) and expanding access to water — activities that greatly benefited the welfare of women and children by saving time and energy. The project is expected to go nationwide, retaining the focus of working from the entry point of supporting traditional crafts, expanding into income generation and integrated activities around the multi-faceted theme of women, water, wood and wealth. ([Bajracharya 1994](#))

This Nepal example is an illustration of the SCALE process in unintentional action. A demonstration project was first created in one community. When the question came regarding how to replicate this, it was recognized that expansion must be accompanied by experimental adaptation and that the training should be experiential. This way the services would always be locale specific and the practical minded villagers would be able to learn by doing. As a result, the expansion was dramatic and expansion is expected to continue so long as a market can be found to sell their products.

Lessons Learned Regarding Expansion Of Projects

The above successful case studies demonstrate that large scale extension of human development and environmental care share common elements. An additional compilation of case reports presents some of the above situations in greater depth and also presents additional cases of successful sustainable human development. These practical experiences provide many lessons that are developed later in this document. However, the following three items are mentioned in summary since they appear to be key and are often resisted.

- **First**, central in all the examples, communities and people participated in development planning and action. The problems worked on were of high priority to local groups and grassroots demand ensured their participation. It is a truism that people support projects that meet their real and perceived needs.
- **Second**, an outstanding feature common to all was that the poor and disenfranchised benefited. In the above examples, assistance to the disadvantaged was not always planned; however, it appears that without fundamental reduction in the separation between those with privilege and those without, then progress for the society as a whole will not result.

A common third element was the development of a process of dialogue and effective communication among three groups — community members, officials and experts — as they searched for appropriate solutions. Programs that were most successful did not get polarized between top-down or bottom up approaches but developed collaboration that made use of the particular capabilities and interests of multiple mutually supportive groups.

”Children have the greatest stake in the preservation of the environment and its judicious management for sustainable development as their survival and development depends on it. The child survival goals proposed for the 1990s in this Plan of Action seek to improve the environment... with their relatively low use of capital resources and high reliance on social mobilization, community participation and appropriate technology...”

World Summit for Children, Plan of Action, 1990

UNICEF/5690/Mainichi/Shinichi Asabe

[\[next\]](#) [\[previous\]](#) [\[contents\]](#) [\[home\]](#)

VI. PRECONDITIONS FOR SUSTAINABLE HUMAN DEVELOPMENT

A pragmatic process is urgently needed in all parts of the world for achieving sustainable human development that is effective, affordable and transferable. Communities need to become self reliant in adapting to accelerating change. Such a positive developmental process is needed to compensate for desperation and short time horizons as people think only of immediate benefits for their families while jeopardizing the larger foundation on which development is built, the environment, the welfare of other families, the civic integrity of communities, and the debts that must be assumed by future generations.

If present trends continue, there is growing concern about how a sustainable human future can be achieved. Simplistic top-down approaches of trying to impose development on people have not worked as promised; benefits have lacked sustainability and produced unforeseen longer term negative impact. Foreign aid fatigue is leading to an increasing tendency of international agencies and governments to dump responsibility back on communities. This trend is being justified by using the facade of slogans such as decentralization, privatization and democratization. Although this trend adds major burdens on communities, a positive aspect is that it recognizes the value and potential of effective local participation as essential for sustainable human development.

Because of the disappointing performance of many development programs, frustrated groups of people around the world perceive that they have diminishing control over their lives and personal choices. They call for relief from what seem to be both traditional and new forms of exploitation. Given the worldwide information revolution, people everywhere know that a better life is possible and they are increasingly impatient with discriminatory systems that were accommodated earlier prior to the prospects of a better life being frequently conveyed to them by the media.

The potential for change differs greatly — both among the world's people and among the ecosystems in which they live. Universal developmental solutions are unlikely in our planet marked by differences. Each community needs to develop its own capacity for local action and to learn how to better utilize its own natural and human resources. Yet, while recognizing differences, it is increasingly clear that all peoples share a common vision of social development that includes equity, elimination of the worst aspects of poverty, employment, social justice, and the basic services for human welfare such as health, education, shelter, and food.

This common vision is cast in differing patterns as the geography of natural resources, proximity to others, climate, cultures, and historical traditions define the locale specific conditions that differentiate peoples. Some communities are growing from population increase or migration; some are declining from migration or painful tragedies. Some are improving economically; others are getting poorer. Most communities watch in frustration as their environments deteriorate and they are finally forced into action when confronted by emergencies caused by prolonged degradation of natural resources, accumulated wastes, decreasing water or eroded soil.

Such negative change affects the cohesion and capacity of a community to solve problems. It can also

foster insecurity, strife and pessimism. When negative changes in local ecology occur and resources diminish, there is usually increased exploitation of the poor and those who are marginalized. The rich get richer and more greedy while the poor get poorer and more hopeless.

Growing human pressures are usually taken out on the earth. When people become desperate, the earth has typically been more ruthlessly exploited. The resulting ecological stress removes options for the most vulnerable of people and species and, of course, on the places with fragile ecosystems, such as mountains and deserts. As degradation progresses, all environments are jeopardized — as are all people. However, women and children always suffer most tragically as damage to one part of the bio-social system radiates to all parts. Traditionally they are a community's segments who are most often left behind on the deteriorating land or who are given what is left over after the older men have taken.

To balance such negative change, communities must successfully develop locally specific strategies for protecting their environments. UNICEF is promoting an approach called "Primary Environmental Care". This approach is based on the integration of three holistic perspectives: sustainable management of the environment; meeting livelihood and health needs; and empowering communities for self-directed development. ([Borrini 1991](#)) Environment, livelihood and empowerment have often been separated. However, numerous examples demonstrate that when integrated, communities can exert dramatic control over environmental change ([Pretty and Gujjit 1992](#)). The world has never had greater capacity to apply knowledge or hard won expertise to local initiatives to promote positive change.

However, rapid scientific innovation and abrupt leaps in technological sophistication have often made application of new knowledge too complex for local use — a computer is useful, but a computer sophisticated beyond a user's skill levels drives that person to frustration. Science driven development has often moved responsibility from families and communities and created dependency instead of self-reliance by introducing technology that users cannot comprehend. Development is most sustainable when technology is sufficiently simple so that communities are able to apply relevant science based knowledge to solve their problems and build from their levels of expertise.

Communities in vulnerable environments — such as urban slums, mountains, deserts, estuaries and tropical forests — especially need locale specific and appropriate help. According to the 1992 *Human Development Report*, 80 percent of the poor in Latin America, 60 percent in Asia, and 50 percent in Africa live on marginal lands characterized by low productivity and high susceptibility to environmental degradation ([UNDP 1992](#)). 850 million people are at risk from desertification, mostly in Africa. In mountain areas 500 million live in jeopardy from deforestation and soil erosion; and in tropical forests 200 million people have a hazardous future because of over exploitation of forest resources. In the world's cities more than one billion people are without garbage disposal or waste water drainage and breathe air choked with suspended particulate matter and chemicals. Children who live in societies where there is a high risk of dying also have other risks. For example, between 1980 and 1990, 43 countries with "very high under five mortality" showed rapid population growth, low economic growth per capita, and decreasing food production.

The challenge is one of the most complex humans have ever confronted. The interacting forces are so extensive and the numbers involved are so great that it is difficult to appreciate that the ramifications of these problems and the people affected will increase at an accelerating rate. If unchecked, a self-reinforcing vortex of poverty, population change, and environment degradation already spiraling toward potential disaster may gather even greater destructive force. The UNICEF *State of the World's Children Report 1994* ([SOWCR94](#)) termed this vortex "the PPE spiral" and outlined the

immediate necessity for applying control measures. (See Figure 5.) The representation of the PPE spiral presented here is a modification of that in SOWCR94 in that it includes a line showing the impact of degenerating environments on populations. Throughout human history populations have abandoned cities or lands when water supplies dried up and environments were exhausted. Modern tragedies chronicle people leaving Sahelian agriculture because of desertification; Newfoundland fisherfolk leaving old towns as fishing grounds are depleted, and Nepali farmers abandoning hill terraces as soil erodes.

Figure 5

Source: [SOWCR94](#)

Among this spiral of interacting forces, population growth has particular potential to insidiously erode the future of children's lives in unrecognized ways. Projections are that world population will double with five billion people being added in the lifetime of a child born today. For the world to accommodate these numbers, adjustments will be needed through the three parallel processes of migration, urbanization and aging. The reshuffling of population distributions will place enormous ecological strains on planetary and social systems.

The key societal mechanism that has accommodated such change in the past, the family, will be forced to change in ways it is now unprepared for. Families will move increasingly and as a result children will lose the sense of place that has characterized the concept of home and the support traditionally provided by extended families. In urban homes children will grow up more alone. In rural areas, family relationships may fracture and compete as they seek new land.

Population change occurs not just because more babies are born. In the year 2050, it is projected, there will still be about 150 million babies born per year, as there are now. The next doubling of world population will come primarily from aging of people. In 2050, when our world population has doubled to reach 10 billion, the younger generations will be supporting four times as many older people as today.

A long standing polarization of opinion among political leaders and development experts has interfered with constructive action on all three PPE dimensions. Proponents have argued about top-down leadership versus bottom-up initiatives rather than recognize the need for both. At first the debate had political overtones manifested in ideological rhetoric about whether people were better off under a centrally planned, socialist economy or with capitalistic, market-driven systems. More recently, the debate has been phrased as a choice between government controls to promote equity and large scale efficiency compared with decentralized, grassroots, locally specific, community-based and privately owned enterprise that usually favor the rich with little trickle down to the poor.

Such polarization, implying that one approach is exclusively correct, has produced unfortunate diversion of energy and resources. Both top-down and bottom-up approaches are useful and must be balanced. In fact, both are needed but for different functions and synergistic action. To break the negative cycle and reach the unreached, a community based approach that promotes independent, self-initiated action by the people themselves seems to be the affordable and effective response. The

approach is termed Primary Environmental Care and involves:

- the sustainable management of environmental resources;
- the adequate meeting of basic livelihood and health needs for all in the community; and
- the empowerment of community members for their self-directed development.

[\[next\]](#) [\[previous\]](#) [\[contents\]](#) [\[home\]](#)

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VII. CRITICAL COMPONENTS IN BUILDING CAPACITY FOR ACTION

A sustainable development process that incorporates the principles of primary environment care can be looked at from a variety of perspectives. A previous section examined the stages that such projects typically follow in going to scale. The previous section outlined a variety of preconditions. This section presents the components that need attention at each stage of action, or at each of the three stages of SCALE.

Identifying Four Types of Community Resources

Natural resources are of primary concern for sustainability. In dialogue with the community, it is important to distinguish between two types; renewable and nonrenewable. Approximate assessment of the balance can lead to the more difficult problem of estimating their price. Pricing for both social and economic development should be based on replacement costs rather than extraction costs that are usually much less. A community that sells its resources below replacement cost is by definition getting poorer from such sales; it is giving away the proportions of its assets that are below replacement cost. Ingenuity is urgently needed for improved methods and materials that can substitute for resources now being depleted at below replacement cost.

Agencies are a second resource. Some may not be currently active or immediately obvious but could potentially be involved in community development. For instance, a government agency that does not have a local office or resident representative may have a mandate that it has not yet fulfilled. Community demand can identify a productive role for such agencies. Nongovernmental agencies may include cultural, religious, educational and charitable bodies that may be willing to expand and assume new responsibilities. Commercial enterprises are the most numerous and diverse agencies in most communities. They include businesses (manufacturing and mercantile) and those associated with services. The commercial sector has potential for bringing both financial and employment benefits to communities but this is almost always underestimated in development planning oriented to government action.

The third resource is information. Every community has resident knowledge, both traditional and scientific. Much of this is not used systematically even though it is informally the basis for the community's everyday decisions. Public information resources are more easily identified and include books, all forms of media (print, radio, television), plus communication channels such as phone and postal services. A source of information outside the community that could be

readily used is the subtly powerful influence of former community members who have moved away. Much untapped information could be available through direct contacts with government, private agencies, schools and research enterprises.

Incentives are a fourth resource that can stimulate better utilization of all community resources. Discriminating use of seed grants, policy adjustments, access to information or credit, technical assistance and special training, can be important catalysts for change. Such positive inducements carry an implied statement of trust. SCALE dialogue can identify potential incentives and leverage catalytic support from government and development agencies for more cost-effective use of resources.

Identifying People

Three-way collaboration between community members, officials and experts can be more specifically programmed as follows:

- While it is essential to build on traditional leadership, it is also necessary to have representation of those who have not had a voice in the past. These are the people who most need development services and they will know how their needs can be met most efficiently. Their participation in decision making will mobilize action instead of the usual resistance from those who have learned that change usually means more exploitation.

In the choice of community representatives, groups who have the greatest needs should always be represented. Established village leaders will tend automatically to take control and exclude such groups but other participants in the dialogue must insist on including them. A major responsibility of experts and officials is to make sure that those in greatest need are not left out, especially women, youth, the poor, and ethnic and religious minorities.

Although some of these groups have received increased attention internationally, youth and women have usually been excluded from meaningful dialogue. Working on environmental conservation issues and social services is a significant opportunity for these groups. Young people, as a virtually no-cost labor source for environmental action, can influence the future of the community they will inherit. They can also develop practical problem solving skills since these activities are superb training for future leadership responsibilities.

- Officials at all levels should be involved in but not control the SCALE process. High level advocacy can create a positive context for local development and accelerated action. Intermediate level officials determine the practical implementation of changes in policy and use of resources. With appropriate decentralization, lower level officials should receive delegated authority and can maneuver to find local solutions. Getting effective participation of officials in local collaboration need not be limited to waiting to see whom fate assigns. Often a community or Self-help Center can help review candidates for a post or generate pro-active petitions if they have a reason to know one candidate is better qualified than another. When government officials are subjected to such expressions of community concern, they will be stimulated to more responsible performance.

Working with officials is, of course, a two-way process. If the community helps officials meet their obligations then officials will more likely support community action. Trust is key both between official levels as well as mutual trust that grows out of including officials in local processes.

- The assistance of experts is essential in order for communities to learn about science based causal analysis and potential interventions. Poor communities always seem to have the least access to knowledge because of their own limitations in education. However, they should be

given the best possible summation of world expertise to encourage them to take the risks that any type of social change involves. Experts come in many types, costs and qualifications. They may be found in government, academia, private enterprises, and international disciplines and agencies. Decisions about the appropriate types, fit and interests require clarity on the part of the community. Two general classifications of experts may be useful.

First, since communities rarely have such capacity spontaneously, assistance may be needed in planning within the broad context and strategy of sustainable regional development. Much is now known about the skills needed for this kind of advisory role which nurtures inter-disciplinary action and working in teams. The necessary skills and personal characteristics include patience, realistic awareness of and trust in the capacities of others, technical skills in how to access and use information, specific experience in training, and expertise in planning and management. The best experts will expect little credit for themselves and make those who do the work feel that they can meet all challenges.

The second group of experts are those with focussed ability in a particular subject. These experts should be selected because they know how to simplify rather than make solutions more complicated. In-depth understanding of the subject matter should allow them to distill from complex knowledge the essence of what is needed. It is helpful if these experts spend time in field work to understand what needs to be selected and adapted from their technical expertise. Selecting such experts should probably wait until community dialogue has clarified priorities and specific criteria can be defined for an appropriate match with local needs. It is tempting to involve such technical experts too soon but they should not be expected to decide the relative importance of issues about which the community is confused.

Identifying On-Going Training

Progress implementing sustainable human development requires a comprehensive learning process. Community members, officials, and experts all need to be trained and then continually re-trained. Three types of activities can be identified and targeted for specific training.

- The first type of training is experiential or action learning building on activities that are real, a process that enables people to get new concepts and skills into their heads and hands. In a Self-help Center for Action Learning & Experimentation representatives of all involved groups (communities, officials, experts) need to see examples in which development initiatives for conditions similar to their own are working. Simply telling people about a process is not as convincing as seeing it in action, letting them ask questions and arranging actual participation in a functioning model. Trainees can then modify and design implementation processes for their own communities.

When the SCALE process begins in a region, there should be visits to whatever community development projects are available to demonstrate action learning. The project may be doing only one thing — such as health, agriculture, community forestry or income generation — but the quality to be looked for is whether the community is working in a responsive and ecosystem protective manner. Such a project can still provide an experiential hands-on introduction to the community empowerment process that will provide appropriate orientation.

- The second type of training is to learn specific technical skills. Training modules should evolve using modern competency based methods of education. For instance, as high school students learn techniques for conducting a SEED survey, they can be further stimulated by specific training in the problems identified with practical modules involving field projects for local

biology, health problems and planting trees. They need to see that change is possible and that specific interventions make sense within the context of general needs.

Other community members will also need skills and knowledge to implement interventions for priority action strategies. Workshops for officials can help them to understand and support special policies such as self-financing. Professionals responsible for diverse services can be brought together to improve intersectoral cooperation among government agencies that were not previously cooperating. For experts, special training is also needed to help them understand how to select valid essential data variables and indicators for a region and how to work in teams with other technical experts in learning to see problems from the perspective of the people. They can then participate in training field workers to do appropriate surveys, analyses and interpretation of findings.

- All participants need to learn how to work together in collaborating teams. The three-way relationships required by SCALE will be unfamiliar to all parties whose prior communications were most likely designed to show their own authority and to control dialogue rather than to cooperate. An especially important stage is the dialogue when SEED findings are presented and community priorities decided. At the start of such meetings, and before major decisions are attempted, there should be discussion of how skills in collaboration can be promoted. Most fundamental is that each group learn to treat others with respect and not try to reestablish old patterns of domination. Once an appropriate decision-making process is established, a modest unrestricted sum of money can be made available to communities as an incentive for them to practice working together. Each training programme will, of course, differ according to cultural and educational background and prior experience. Consistently, however, it has been found that eventually some of the best trainers will be community workers who can speak from experience. The most practical and efficient training will be to assign people to live and work with community level field workers for a period of time.

Specifying Accountability

Promoting societal and environmental change is unpredictable — especially in the decentralized processes of primary environmental care. The SCALE process will help communities adjust to the uncertainties and unpredictable interactions between environment, population, sustainable development and quality of life. As part of the process, protocols need to be negotiated in which responsibility is allocated by mutual agreement to community members, officials or experts. The following four areas need special attention.

- The most needy segments of a population should not be excluded from decisions as they offer three practical contributions. First, each sub-group has its own perception of needs, inherited wisdom and experience to bring to community understanding. Second, community members who have previously been neglected will probably be among the most enthusiastic and energetic workers because they have most to gain from change. Third, and most important, is that without equity it will be impossible to address total population needs which tend to be concentrated among the marginalized and poor.
- Quality control is especially essential when introducing new procedures and interventions. Good quality performance will generate a sense of trust. When numbers from SEED surveys are accepted as accurate, community members and officials will be more likely to use them in decision making. If financial accounts are precise and transparent, then everyone will trust the individuals who lead action. If reports convey accurately what was said and done, rather than camouflage inadequacies, then confidence will increase. Data quality can be increased when outside reviews “triangulate” or cross-check information

based on objective reference points. SEED or any research that uses what the Participatory Rural Appraisal techniques term “optimal ignorance” to achieve simplified results should be spot checked by experts. Finances need outside accountant review. Reports and files should be available for discussion and rarely be confidential. Creating such validation may seem to add extra work, but transparency in these steps will, in the long run, save energy and help keep a focus on common objectives.

- Sustainability is a term that has become, in much development and conservation literature, a free-floating beatitude. There is no single solution or pattern that directly limits or creates sustainability. However, the approach presented in this document of communities promoting development by monitoring progress simultaneously in social, economic and ecosystem variables and then re-targeting and re-focussing action should promote sustainability. A practical issue that now dominates sustainability discussions is self-financing. Attention should be paid to making sure that realistic and continuing commitments for outside project financing are also made. Development is increasingly characterized by tight budgets that require more discipline than earlier and more generous development funding. While justifying reduced budgets behind face- saving labels, such as privatization and democratization, donors are dumping responsibility for support back on the people. New projects should be added only after considering what is likely to happen 10 and more years in the future with regard to their support.
- Allocation of responsibility — good ideas have often not been implemented because responsibility was never clearly assigned. Plans become reality based on the actions of people. The allocation of responsibility should follow regional and cultural practices since community development and conservation will occur only when individuals and social groups clearly understand their place in the process. At every stage, a conscious allocation of responsibility must be accepted by the people concerned and their expected performance should be specified. To establish individual accountability, a useful method is to negotiate contracts after each round of decision making to specify the responsibility of each participant. At each stage of SCALE, for example, a contract can be drawn up defining who does what in the obligations of community members, officials and experts along with expected completion times. This can also help provide a means of measuring achievement.

VIII. FIVE STAGES OF ACTION

Each of the three phases of the SCALE process, if it is going to achieve the objectives of primary environmental care, appears to do so most effectively by progressing through five stages of project development.

Stage One: Data Gathering

SEED is the data gathering mechanism for SCALE. It should be repeated each year to monitor change, and data should be collected and analyzed by the people themselves. For data gathering activities, as mentioned earlier, secondary school youth are almost universally available, especially effective, relatively easily supervised and low-cost. The benefits are that: a) surveys create a bridge between school and community; b) students have access to virtually all homes; c) compensation is not required; and most important, d) this experience influences the next generation of leaders.

Stage Two: Collaborative Analysis

SCALE places great stress on collaborative dialogue between communities, officials in governmental and nongovernmental agencies, and outside experts in order to select action priorities and appropriate development interventions. Following SEED surveys, data are discussed and interpreted in an analysis that extends from the larger needs of the community and ecosystem, to underlying forces for change, to specific local causal influences and options for solutions. This review leads to pragmatic assessment of resources to which the community can have access and entry points to bring about change. Specific and realistic goals and priorities need to be stated in terms that communities can understand and work toward. Vague generalizations such as “reaching the unreached” need to be made specific by defining who are the underserved and what constraints limit development.

Stage Three: Inclusive Decision Making

As causes of priority problems are discussed, alternative strategies for action will emerge. Those persons who are most affected and those who can contribute to action should have a chance to present their perspectives. Inclusive dialogue is critical for generating later hard work from people heretofore excluded. There will inevitably be disagreement and, rather than forcing compliance upon a minority, deliberate testing of alternative options may be a useful learning experience for all. As the database becomes stronger, continued sharing of pragmatic experience will make it possible for all groups to gain understanding, confidence and insight.

Stage Four: Action

Implementation of all five stages can be concurrent and action on particular issues need not wait. Whenever the community and officials are confident about a decision, appropriate activities should start. It may be desirable to start with projects where success is assured and public demand is high. As confidence and skills increase, action on more difficult problems can be started. Some actions should be periodic and cyclic (SEED, collaborative analysis, and inclusive decision making). Other actions (actual development work and monitoring) should be on-going.

Stage Five: Monitoring & Evaluation

No community should expect immediate success. SCALE is an incremental process where action is adjusted through successive revisions. These adjustments require repeated gathering of facts, dialogue, decision making, monitoring, evaluation, and recommitment. Monitoring by SEED leads to evaluation with collaborative analysis of data and also with anecdotal information as people relate their own stories. Each year contracts and targets can be revised. A cumulative process extending over several years will enhance community vision and cause capacity to grow.

IX. SIX STRATEGIC PRINCIPLES FOR ACTION LEADERSHIP

Leadership

Although SEED and SCALE are both community oriented processes, they require considerable support from high level and regional leadership. Many types of leadership are needed including political and religious leaders, private sector executives and stars from the media and sports. Involvement of political leaders, such as presidents and presidents' wives, can assist in providing credibility for local action. With support from high level leaders, cooperation from mid-level agencies will follow. Administrative channels will realize that they must make their systems work and the bureaucracies will support action rather than block it. Changes in policies and administrative structures will probably be needed to support community action and cross-sectoral collaboration. Personnel assignments and accounting practices may require adjustment and simplification. Credit arrangements and tax policies might have to be revised to accommodate self-financing. Some issues (such as pollution and environmental degradation) can be affected only through national laws and regulations enforced by economic and legal measures. Similarly, new policies may be needed to correct practices that leave women and children out of the development dialogue.

Even high level national advocacy may not be enough. The scope of required action may necessitate international collaboration since many problems are linked to global processes — be they environmental, economic, or sharing of information. In meeting these concerns, cross-national advocacy can stimulate relevant adjustments in international policies and practice.

Community Ownership of Process

Social development is most sustainable when local communities understand and own the process; this is one of the three principles of primary environmental care. Most national and global initiatives, such as *Agenda 21* from the 1992 Rio Conference on Environment and Development, point toward stimulating community level activity that links the aggregate agenda of many development agencies. For this, community action is effective because people tend to take care of what belong to them but hesitate to assume wider responsibility. A fastidious house owner may keep the inside of the house clean, however the street outside may be filled with litter, and indeed, much of that may have been thrown out by the fastidious home owner. The challenge is how to generate a sense of ownership about communal concerns. Some cultures have, of course, successfully maintained traditional community cohesion. However, as contemporary social vectors are introduced, these traditional communal concerns have weakened and people have focused more on individual and family good, especially as part of increasing urbanization.

Stimulating community ownership is often made more difficult because of government actions, especially unfulfilled government promises. Officials, sometimes with good intentions but more often with a self-serving desire to win public favor or votes, tend to promise services that the government cannot deliver. Such promises range from free health care, to quality employment, to better roads, to an end to social strife. Such promises may *take away services* because when the community expects that government will provide a service, there is a tendency for local leaders to stop taking responsibility for work and funding.

Surveillance for Equity and Reaching the Unreached

Equity is a fundamental requirement for sustainable human development. It has been difficult to achieve because of long standing patterns of discrimination in local social structures. Outside experts can help ensure equity in their dialogue with communities. A basic principle of epidemiology that can be transferred to sustainable human development is that it is impossible to improve health in populations without identifying the people who are sick, or at greatest risk of becoming sick. Multiple high risk monitoring methods have been essential for successful prevention by concentrating disease control measures or nutrition interventions on those most at risk. Equity in community development similarly needs to find out who has the greatest needs and this may simplify coverage because problems tend to be clustered in particular social pockets.

A flexible capacity to focus on those in need is the quality that has been most often lost when successful local projects fail in going to scale. Failures occur because, in trying to get rapid extension, rigid bureaucratic approaches are used that tend to focus on the simple objective of reaching the greatest number of people, or in management terms, input is measured. Management theory postulates a basic conflict between efficiency and equity, but the dilemma is artificial and disappears when outcomes rather than inputs are measured. It is obviously more efficient to concentrate services on those who are easiest to reach or ready to accept new interventions but this will do little to improve conditions in the whole community if the neediest are left out. When communities are expected to show improvement in outcome statistics, the only way these standards can be met is by caring for those in greatest need.

Surveillance for equity is a practical management tool for achieving the moral imperative of equity ([Taylor 1992](#)). Surveillance uses effective monitoring to identify those in greatest need and then has an appropriate triggering mechanism to solve problems as they arise. Such surveillance can grow out of the SEED process.

Promoting Sustainability

Extensive experience worldwide shows that one of the key factors that makes programmes sustainable is that they should not become dependent on outside funding and control. Self-financing at the community level is increasingly recognized as essential for sustainable development. The rationale for self-financing involves much more than just economic frugality. Earlier waves of well intentioned government expansion of social services have had to be reduced because of awareness that governments will never be able to meet the inexhaustible demand for social services through tax revenue.

There is also realization that governments are often less efficient than locally controlled or private sectors in administering such services. When communities pay for services they tend to hold personnel to greater accountability.

Self-financing must be balanced against other strategic concepts mentioned in this section, most importantly, equity. Self-financing frequently creates financial barriers as leaders favor their friends and political dependents. To keep costs down local leaders then eliminate care for those who are less powerful politically or economically. In health care, for instance, money from local taxation often is spent on hospital facilities that mostly serve the rich while simple, low cost services for the poor are drastically limited.

A further barrier to local financing is the accounting problem. Many communities have trouble making their monetary systems work in a way that all members trust. Decentralized financing often opens

opportunities for corruption that results in cynicism among the people who pay. Appropriate training to improve the fiscal systems of local governments can help improve the transparency of local financing and more efficient services. Administrative arrangements for local financing should grow out of local culture and conditions. This is especially important because decisions concerning payment will be arranged according to the differences between actual costs and what the poor can pay. To solve such problems, a partnership may be necessary between communities and outside authorities in which coverage with services for the poor are ensured by some funding from regional or district level. Such partnerships between communities and officials should grow out of an extension of the process described under SCALE. With such information on needs, the signing of a contract allocating accountability among parties can specify costs and responsibilities.

Another dimension in promoting sustainability is to encourage more participation of women and youth. Repeated studies have shown that women are the best protectors of the environment and family welfare. Youth are also generally active in such programs as they have a vested stake in ensuring that present programs lead to sustainable progress. However, expecting communities spontaneously to open up new roles for women and children and find appropriate, non-exploitive tasks is unrealistic because if that were culturally easy it would have happened long ago. Social barriers compartmentalize participation by gender and age and need to be addressed with more than good intentions if the potential contributions of these groups are to be realized. Officials and experts should insist that women and youth share in community dialogue and have a voice along with community leaders.

A contemporary solution that has demonstrated success in moving toward this goal of expanded participation is the promotion of “user’s groups”, typically groups in which disenfranchised segments are brought together around an interest they share. User’s groups started for a particular project may be able to expand their interests to include associated issues, and then expand to include associated members. Success in bringing about one change can become a participatory springboard for new challenges.

Community Capacity Building for Integrated Social Services

A characteristic of sustainable human development initiatives is that the interventions cannot readily be implemented in short-term, top-down, vertical programs since environmental problems, as experienced by families, tend to require balancing of multiple causal forces and priorities. Economic development and environmental protection are not priorities that can be achieved through straightforward mass campaigns, such as was used for smallpox eradication. Sustainable human development can be considered the final catchment basket of development, where the tougher problems remain after easier programmes have made their contributions. More than single-purpose, top-down programmes, sustainable human development requires capacity building as the community takes on problems that were ignored during earlier development efforts.

Two lessons from the health sector are relevant to the broader issue of capacity building. From primary health care the lesson has been learned that when local units participate in decisions and take responsibility, they will usually find ways to maintain support and pay for services because it is they who are benefitting. Second is the issue of dependency. A chronic problem in health care has been the tendency of providers to see themselves as authorities and take over control rather than make the extra effort required to build self-reliance. Building sustainability often seems to become increasingly forgotten as services become more sophisticated. The most important health workers are mothers,

not doctors, and the most important health institutions are homes, not hospitals.

Capacity building at all levels — but especially at community level — is the characteristic that has consistently been most deficient in projects sponsored by outside agencies. From analyses of the world development experience, it needs to be reiterated that people need to be involved in their own development. Services should be set up so they can increasingly be taken over by the community. On the contrary, in most projects, communities become increasingly dependent on services. Health providers, for instance, measure success by whether the community shows compliance rather than self-reliance. This is wrong. Within a community, the people that have the greatest potential may need to have the most assistance in developing that capacity. The five stages mentioned earlier of data gathering, collaborative analysis, inclusive decision making, action, and evaluation are required to build community capacity.

Partnerships

The only way to achieve the scale of activities necessary both to develop quality of life and protect the environment is by building partnerships. Implementing sustainable human development is more than any organization can achieve alone. Partnerships will be needed among the various agencies of the U.N. system (UNDP, UNICEF, WHO, UNFPA, UNEP, World Bank, etc.) Partnerships are also needed with bilateral donors, with nongovernmental organizations, commercial enterprises, and academic and research communities.

More important than institutional partnerships, though, is the bringing together of the many sectors of official developmental services. *All government services should see sustainable human development as in their sectoral interest.* This may require significant investment in advocacy. Without teamwork, successes that may be achieved on a demonstration level will never go to scale. Outside agencies and experts may make a special contribution by bringing together disparate and previously non-cooperating agencies of government.

But donors and even government agencies are still outsiders to communities. The strategic principle of creating partnerships needs to be truly grounded in teamwork at the community level and should involve all social divisions, ethnic subgroups, religious affiliations and economic segments. Networks of community level partnerships are the foundation on which sustainable human development can be built.

X. CONCLUSION

An increasing sense of urgency around the world encourages efforts to find a process by which sustainable human development can be achieved on a magnitude that adequately engages the complex interacting forces of rising expectations, environmental degradation, global readjustments, economic growth in some areas and stagnation in others, and population change with its growing numbers and shifting distributions. Many development projects that seemed initially successful have not been sustainable. But the reasons for this lack of sustainability or inability to expand further to scale have varied widely in key dimensions, whether due to limited resources, inherent social inequity, financing being overwhelmed by greed or diverse other causes. To meet the great urgency of finding sustainable

solutions that can go to scale, the first need is for actions to be grounded in the unique realities of each community. Sustainable human development cannot be achieved using simplistic blueprint models for single interventions.

This document synthesizes experience from practical field studies to suggest for wider consideration an approach that reflects the way successful programmes have evolved. (Additional and more detailed discussions of these field experiences can be found in [Taylor et al, 1995](#).) This approach brings together three vital aspects of what is termed primary environmental care: sustainable management of the environment; meeting of basic livelihood and health needs, and the empowerment of communities for self-directed development. This approach is not presented as a formula for standardized technical procedures to be done always in the same way. Great flexibility is essential and locally specific solutions should develop from the beginning with the primary design and financing being controlled by local communities. This is different from having an outside group develop a project and then turn it over to the community. From the beginning, there is need for collaborative support from government and outside experts.

To stimulate integrated action on environment, population, and social and economic development, people need to learn about their ecosystem, economy and society. As they develop capacities to solve their own problems, they will become active in ever larger circles. Self-help Centers for Action Learning and Experimentation (SCALE) are designed to work out locally adapted solutions that will be community based and then expand. Regional, national and international actions and communication can facilitate the process as people learn how to find their own answers in this growing international network. Sustainability, hopefully, will come as they make their own behavioral changes that result in new community norms — and at the same time preserve what is best and most prized in their traditional cultures.

The process depends on practicality and specificity. Generalizations, although often true, do not provide detail that gets jobs done, especially difficult and complex jobs. The development of primary environmental care is reality focussed because through it people define and solve their own problems. There should be a tangible way to evaluate whether a particular activity or project is being successful in achieving practical objectives. One way of doing this is an action audit developed by Muriel Glasgow of the UNICEF Environment Section. By asking the following questions, projects can determine their relative success and where they need to focus action.

A Sustainable Human Development Audit

Empowerment

Is there a funding plan?

Are processes of empowerment in place? (Tools, manuals, and chosen operational frameworks)

Are monitoring indicators in place? Most particularly, is the community role specified?

Are gender dimensions addressed?

Are the needs of the youth being prepared for?

Has the needed training happened at the community level?

Meeting Basic Needs

Is there adequate self-financing for sustainability?

Are technologies appropriate?

Can synergy be built among basic needs (Food, fuel, water, shelter, health, etc.)?

Where are the gaps in service delivery (especially to the most at-risk)?

What are the linkages from the project area to urban or rural contact? How great are the urban/rural disparities?

What are the training needs?

What are the unmet resource needs? Are they really severe?

Optimizing Resources

How is local knowledge incorporated?

How are natural resources being protected (especially water, soil, & fuel)?

Are there dimensions that affect biodiversity or that reduce bioresilience?

What opportunities exist to implement renewable or recyclable technologies (especially wind, solar, biogas, micro-gardens, etc.)?

Are there special vulnerable ecological zones (mountains, forests, rivers, deserts, urban, wetlands)?

Special Opportunities

What are outside funding possibilities?

What has been done or can be done through advocacy to prepare the situation?

What linkages can be expanded (with ministries, with NGOs, community groups, academic groups, internationally)?

Can this project be made part of a local network of *Agenda 21* projects?

Allocation of Responsibility

Are contracts between partners needed and/or appropriate for this project?

Are necessary relations in place with government?

Is there a schedule specifying work and resources needed?

Has the community mind or situation changed and must steps be repeated?

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