Preface

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We are at the threshold of a new era of international understanding and action for improved habitat and human settlements. Settlements will be viewed increasingly as ecosystems composed of natural and man-made elements that interact in complex ways within the dynamics of their population and environmental dimensions. This book represents a major step forward in this recognition, with emphasis on the harmonious balance between settlements patterns and systems and the natural environment. The discussion of specific technologies and approaches is designed to be helpful toward these objectives, and indicative of the wide range of research, development, and implementation remaining on the agenda for actions of the international community in this field.

I have had a profound respect for the importance of well-conceived human settlements technology research and development ever since my service 20 years ago as director of CINVA, the Inter-American Housing Center, in Bogotá, Colombia. There, with the help of a dedicated team, but with only very modest direct cost, it proved possible to improve substantially several existing building technologies, especially those having to do with earth and adobe, the world's most commonly used

★The views expressed are those of the author, and do not represent official positions.

(environmentally sound) building materials. One example was the CINVA-RAM machine, a hand-operated stabilized earth block-maker which was originally designed to fit within the criteria of a \$50 cost limitation and easy portability on muleback or other transport through roadless territory. This machine, whose direct development cost and prototype manufacture was less than \$8,000, has now built hundreds of thousands of low-cost dwellings and schools around the world, and is manufactured locally, from Ghana to Indonesia. Though it is by no means a universal answer to production of shelter, the CINVA-RAM has served as symbol for self-help and mutual-help construction and community organization efforts in many countries.

Much of the material in this book, well assembled by Gwen Bell, flows from meetings on community technology and eco-development, which were initially convoked by the Preparatory Planning Group (PPG) for the HABITAT Conference, under the auspices of the UN Environment Program (UNEP). (The conceptual basis for the meetings was prepared largely by Alvaro Ortega, and summarized in *HABITAT 76*, a report to the Executive Director of UNEP by the PPG in December 1973.) The presentations at these meetings were followed up at the Southeast Asia Regional Workshop on Environmental and Population Dimensions of Human Settlements, jointly sponsored in March 1975 by the UN Fund for Population Activities (UNFPA), UNEP, and the Development Academy of the Philippines. The Indonesian national Symposium on Human Settlements, held in Jakarta in July 1975, assisted by the UNDP and by UNEP, helped to give more emphasis to strategies for human settlements at the national government level. A fundamental objective throughout these meetings was to identify and describe selected innovative solutions for improving the quality of life in human settlements, especially in such basic fields as shelter, food, transportation, waste recycling, and wiser use of natural resources.

Finally, UNEP itself convoked in Nairobi in October 1975 an international advisory group meeting on human settlements technology, which produced a conceptual framework and guide-

lines for an action program in this field, to be followed up by meetings at regional levels in the developing countries, and by the organization and implementation of pilot, demonstration, and training projects. Such projects will be carried out in special collaboration with local groups of professionals, producer and consumer representatives, and key decision-makers.

The basic conclusion of the UNEP advisory-group meeting was that a concentrated consortium-type effort for the promotion and extension of an environmentally sound human settlements technology program at this time would yield great dividends. The group suggested that the assistance of international agencies, regional organizations, and foundations for such a concentrated effort be invited, so that a coordinated and complementary approach could be developed. This book should serve as a benchmark and clarion call for the establishment of a major new program of this type, perhaps comparable to the highly-successful consortium currently operational in the field of agricultural research.

It is clear that we have come full circle from the situation of more than 30 years ago when the United Nations was being organized. At the UN Conference on International Organization, held in San Francisco in May 1945, the Greek delegation pointed out in a special memorandum that "the whole world will be faced simultaneously with unprecedented housing needs, demanding the production of technical works to an extent several times as great as in the postwar period," and proposed a number of specific areas for technical development with UN collaboration. In December 1945 the Australian delegation recommended to the Preparatory Commission of the UN the establishment of an international center for the exchange of information on the technical, social, and economic aspects of housing and town and country planning.

In 1946 the US government suggested the establishment of an office or unit dealing specifically with international problems of housing and reconstruction, and in December that year also, the French delegation proposed the summoning of an inter-

national conference on housing and town planning—*plus ça change . . .**

It is not my purpose here to trace the developments concerning international assistance for human settlements over these past 30 years. This history is available in documentation of the UN Center for Housing, Building and Planning, established in 1965 which was the successor to the earlier Housing and Town and Country Planning and the Housing, Building and Planning Branch in the Bureau of Social Affairs of the Department of Economic and Social Affairs of the UN Secretariat in New York. Suffice it to say that this assistance had low priority at both national and intergovernmental levels. It was inadequate in both scope and concept, though much good work was done to establish the foundations for broadened international understanding and action, such as emerged at the UN Conference on the Human Environment, held in Stockholm in June 1972, where the "Planning, Organization and Management of Human Settlements" received major attention.

The recommendations of the Stockholm Conference resulted, of course, in the establishment of the UN Environment Program, whose 58-member Governing Council has consistently demonstrated its deep concern and involvement with the environmental dimensions of human settlements. The Stockholm recommendations, as followed up by the Governing

*These suggestions should also be viewed in the context of much earlier international work in this general field. The International Labor Organization had adopted resolutions on the subject dating from 1921/1922, and published a number of basic documents on housing and housing policy through the 1930s. The League of Nations, under its Health Committee, had established a Housing Commission in 1936. By 1946 UNESCO had proposed an international center or clearinghouse on home and community planning. And by December 1946 a special report on a program of international cooperation in housing and urbanism, pointing out the problem and the opportunity and the elements of a first program, was prepared by a consultant, Jacob Crane, and presented to the Honorable Trygve Lie, then Secretary-General of the United Nations.

Council and by the UN General Assembly, have also resulted in three significant actions.

1. Establishment of the UN Habitat and Human Settlements Foundation, which became operational in 1975.
2. Support for HABITAT: the UN Conference on Human Settlements, held in Vancouver in 1976.
3. Development of a Human Settlements Program in UNEP itself.

The three interrelated decisions of UNEP, supported by the complementary efforts of other international agencies and the sympathetic response for action at the national and the extra-national levels now present an unusual opportunity for the development of a global strategy to improve the environmental quality of human settlements on the massive scale required.

Community technology or human settlements technology in its broad sense, forms a keystone of the trilogy required for such a global strategy, linked with both financial and organizational or institutional approaches.

Here we might note the comments of Richard E. Leakey, distinguished anthropologist of the National Museum of Kenya in Nairobi, in HABITAT 76.

Technology should be seen as a critical extension of man's behaviour and this is important from the evolutionary perspective. Two million years ago, we can see evidence for man's technologically patterned activities—returning to a home base, using tools, sharing the work load within a given social unit. The development of man and his place in the ecosystems relates directly to the level of technological skills, and any imbalance will have significant effects on the success of the social unit concerned.

In the present day, we can observe that, for community technology generally, there exists a vast amount of research,

ongoing projects and problem-solving capabilities in all regions of the world. However, because of lack of communication and coordination, programs are often duplicated and approaches fragmented. There has been a resulting incapacity to translate much existing knowledge into programs at national and regional levels. This is especially unfortunate now that the world has become aware of the need for new strategies for energy production, distribution, and utilization at the human settlements level, and other major considerations within the context of the new international economic order. Certainly the motto "do more with less" has also become a major focusing point for all community technology development, especially with regard to use of nonrenewable natural resources within the "inner" and "outer" limits of consideration of humanity's minimum needs, including shelter requirements, and the support constraints of the biosphere.

The UNEP Advisory Group on Human Settlements Technology took note of the challenge that over the next 30 years the governments of developing countries in particular will face the task of providing jobs, food, housing, physical facilities, and social services for another 2,800 million inhabitants (or more than the population of the entire world in 1950), in both urban and rural areas.* Any effort to deal with this situation must obviously involve multidisciplinary approaches if environmentally sound communities are to result. Moreover, the objectives must be specific and well-categorized.

Certain problems of settlements are common worldwide; others are unique. Some general global categories can be defined, but specific priorities must be made regionally or even subregionally; while at the global level, workable program areas should be identified in preparation for action.

Existing knowledge and research should be fully utilized while also stressing new and promising innovative approaches. The dynamic character of change often quickly renders obsolete

*Report of the UNEP Advisory Group Meeting on Human Settlements Technology, Kenyatta Conference Center, Nairobi, 6 to 8 October 1975.

existing knowledge, but it should be better disseminated, and applied while it is still relevant.

The UNEP Group agreed that the main objectives of a determined new effort for development and improvement of human settlements technology should be to

- (a) Identify a global network of leading institutions in the field of human settlements technology, which will be organized on an ecosystem and regional basis.
- (b) Establish the necessary mechanisms for coordinating and promoting the activities of these institutions, (research, information, implementation of projects).
- (c) Collect, disseminate and make all data in the field readily available.
- (d) Promote the use of environmentally sound technologies which, due to their very nature, will help countries and communities become self-reliant.

The above objectives should be seen also as tools to make it increasingly possible for nations to plan their destiny, as visualized under the emerging concept of a new international economic order. A human settlements approach is a key conceptual instrument for this process, and indeed it has been said that national planning through strategies for settlements is a means of humanizing and socializing the whole development process.

The human settlements approach sees man—in totality—in work, in play, at home, and in relationship with nature and the environment. Its objective is to ensure the spread of development efforts—the quality of life—to the people. The major components are to promote productivity, through spatial considerations, and public service delivery systems, for human welfare. A key issue in many countries is that of space, and therefore land—with the population dynamics and environmental dimensions—becomes the integrating factor in planning. For while population and urbanization rates increase, land does not, nor does the biosphere of this *only one earth*. Rational

management of this resource—and providing land for people and their activities—is both the problem, and the means by which solutions can be found.

The approaches to planning for human settlements have both national and international implications. On the national side, more positive planning and action for human settlements can accelerate the development process with greater social equity and also serve as a means of stimulating participation of the people and greater civic and environmental responsibility. It can mobilize new resources—the people's energies—as well as fostering savings and opening channels of investment within broader human settlement concepts.

On the international scene, the community and human settlements approach within national framework plans offers a means of focusing and integrating technical and financial assistance.

On all fronts, we have the profound obligation to manage wisely our existing environmental resources—land, space, water, air, energy—and to constantly innovate and to recycle so as to do more with less, if our communities are to be truly livable. This will require immense efforts to foster innovating technology and to implant new systems and techniques for human settlements development, including industrial and food production and other systems to maintain the balance of man in harmony with his environment.

My conviction is that each country has a great deal to contribute. Each has tremendous problems but there are also tremendous resources of people, land, space, water, air and energy. The right synergetic combinations will produce significant achievements for human welfare; but for this to happen, the use of the appropriate community technologies will be all-important. The private sector must contribute extensively to this process. There must be more general agreement on objectives and the rules of the game so that all can participate and contribute more productively and efficiently for the improvement of human settlements within national framework plans and concepts.

In conclusion, with a 30-year not-too-successful *history* of international involvement and assistance for human settlements improvement, and a 30-year *perspective and challenge* of providing environmentally sound human settlements for a doubled population of earthlings, it is clear that we are in a swift midstream of potential triumph or disaster. We now know the directions, but it will take all our determination and skills at national, regional, and local levels to achieve the planning and mobilization of resources and practical utilization and implementation of the broad spectrum of community technologies now available for human settlements development on an ecosystem basis.

This may involve the need for substantial reorganization of many of our traditional institutions for communication, training and education, if they are to remain relevant and adapt to the new concepts and realities. This book points the way to the future in this field; the time has now come for careful organization, programing and implementation.