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Housing, Health and Well-Being: An International Perspective

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At present around 1,000 million people live in grossly inadequate hous-
ing, and 100 million have no shelter whatsoever. Adverse trends in
housing status and environmental conditions threaten the health and
well-being of additional millions of people world-wide. The relationships
between housing and health are reviewed, with an emphasis on the house
structure, sanitation, pollution, and overcrowding. Possible approaches
to improved housing and municipal planning are examined, and the key
requirements include new policies of municipal and national govern-
ments, intersectoral coordination, the mobilization and "enabling" of
communities, and strengthened environmental health services.

Housing is not only a major defence against ill health, but also it should support the state of "positive health" implied by the WHO definition: a state of "optimal physical, mental and social well-being".

More than half of the world's people do not enjoy a level of health that allows them to lead a productive and satisfying life, or that comes anywhere near a state of health as defined above. Statistics on the world health situation describe the frequency and burden of premature death, chronic sickness and disability, but sometimes the sheer volume of numbers diverts our attention from the fact we are talking about infant deaths, children

who do not grow because of recurrent infections, mothers who are so malnourished that they cannot care for their children, and a cycle of ill-health leading to unemployment, which leads to greater poverty and more ill-health (Eckholm, 1977).

In contrast to a worsening situation in developing countries, diseases related to basic deficiencies in infrastructure, such as a lack of clean water and basic housing, or to malnutrition, are much less common, and life-expectancy is much improved in the developed countries. However there are a host of diseases and disorders, of infectious, allergic, genetic, or psycho-social aetiology, in which environmental conditions and especially housing, play and important role.

What can national and international health agencies do about this? Is the answer to be found within the health services, to provide more and better doctors and health workers, more hospitals, cheaper and better medicines and laboratory tests? Is it to be found in education, to teach people how to change their behaviors to avoid contracting illnesses? With WHO support, many countries are making major efforts to provide better health services and better education for health.

But the impact of health services is limited, as is the impact of health education when people lack the facilities to enable salutary behavior. In the developed world, the major improvements in the standard of health over the last century, when decades were added to the human life-span, when infant mortality was reduced 10-fold, and many forms of chronic debilitating illness such as tuberculosis were controlled, came with improved housing and a healthier environment. Most public health workers accept the proposition that unless dwelling conditions and the housing environment are improved, then the proclaimed goal of "Health for All" cannot be reached. The paradox for Ministries of Health in all countries is that one of the most effective approaches to improving health, which is to improve housing and living conditions, is not under their administration or within their mandate. The drift of this argument is plain: they must raise the health awareness of housing authorities and planners, of builders, of those enmeshed in economic development and of those responsible for the physical and social environment (Hardoy and Satterthwaite, 1987).

The health and social welfare aspects of housing involve far more than the dwelling structure and its immediate surroundings. Shelter is a critical factor in the ecology of human health and must be considered in relation to that ecology. The roads that run through settlements, existing and new industries in relation to residences, access to educational and health facilities, markets, employment and income opportunities, space for recreation and privacy, gardens, transport — apart from topography, climate and geology — all bear on health protection and promotion. In that shelter is a basic human need that must figure in any adequate development policy, health is one function to be maximized by the larger social system.

The problem of shelter in urban areas dramatizes the need for housing authorities and planners to adopt a comprehensive approach to their work. Although most of the housing factors that influence health that are discussed below are equally important in rural settlements, urban examples are emphasized due not only to the greater availability of data on urban housing, but to the increasing urgency of urban needs.

Rapid population growth in urban centres throughout the world is creating an urban revolution. The urban population of the industrialized countries doubled between 1950 and 1985, and it quadrupled in the developing countries. Cities in developing countries, which already have enormous squatter settlement populations, will have to accommodate a further 750 million people by the year 2000 (UNCHS, 1988a).

Their urban growth has preceded the establishment of a solid, diversified economic base to support the provision of housing, infrastructure and employment. Major deficiencies exist in housing quantity and quality, the security of the occupants' tenure, the infrastructure (including roads, piped water, sanitation, site drainage, and electricity), and basic services (including collection of household wastes, primary health care, education and emergency services). Several case-studies vividly illustrate these points (Adegbola, 1987; Oya-Sawyer et al. 1987).

Environmental problems pose health hazards to both wealthy and low-income settlements in urban areas in most countries. They include air pollution from motor vehicles and industrial

emissions, water pollution, insufficient water supplies, inadequate solid waste management leading to the proliferation of disease vectors (particularly insects and rodents), contaminated food, and noise. However in any country the health impacts are felt most severely in low income settlements, where capacities to deal with the problems are the most deficient. In the following sections this paper discusses housing and health relationships, trends in housing and the housing environment, and finally it considers approaches and requirements for improved housing and health.

The Low-Income Housing Settlement:
Elements of the Living Environment
Which Impact on Health

Many WHO documents have established the relationships between various aspects of housing and the health status of the inhabitants (Martin, 1977; WHO, 1987). Some key relationships are summarized briefly here.

The House as a Structure and Shelter

Makeshift dwellings do not guard against extremes of heat and cold; they lack insulation against noise and intrusion of dust, rain, insects and rodents. Risks of accidental fires, burns and scalds are high with small, cramped dwellings made of temporary materials with open fires or unprotected stoves. Cracks in the walls of mud or wooden houses provide breeding sites for bedbugs, and for triatomine bugs which are responsible for transmission of Chagas' disease. Shrinkage cracks in earthen floors provide breeding grounds for argasid tick vectors of rickettsial relapsing fevers. Mosquito vectors of malaria, filariasis and encephalitis rest on the cool mud surfaces inside earthen constructed dwellings, and cockroaches and flea larvae flourish in the shaded crevices of earthen floors and walls. Good ventilation and indoor lighting (natural and artificial) is not only important to maintain health and safety, but also for efficient productive activity and for human social and intellectual development.

Drinking Water Supply and Quality

Unsafe water is a primary medium for the transmission of diseases, the most important being typhoid, cholera, hepatitis, polio, dysentery, amoebiasis and intestinal protozoa.

Excreta and Sewage Disposal

Human excreta is a dangerous substance for people to touch, for diseases transmitted by contact with human faeces are major causes of death in developing countries. Lack of provision for safe disposal of excreta and solid wastes leads to intestinal tract diseases, when faecal matter containing pathogenic organisms contaminates food, water or the fingers and is subsequently ingested by people. Hazards are intensified when poor drainage leaves stagnant water near the dwelling. Pathogens include various bacteria and viruses, and intestinal parasites such as hookworm, ascaris, whipworm, pinworm, and strongyloides.

Solid Waste Disposal

Ideally, solid wastes should not contain any faecal matter, but in practice this has been found difficult to prevent, and leads to additional hazards in the handling and disposal of wastes. Health hazards of solid wastes include air pollution from burning; clogging of drainage channels leading to the breeding of culex mosquitoes, the vector of filariasis; and as a medium for breeding flies and rats. Rats may be a reservoir of pathogenic organisms for plague, typhus and leptospirosis. Waste dumps near dwellings (usually squatter settlements) place these occupants at special risk.

Land

Housing sites and adjacent open space that are contaminated with faecal matter, chemicals and other wastes pose major health threats, especially to children using the land for play and recreation. Many squatter settlements have developed on land subject to flooding or landslides. Poor site drainage results in waterlogged soil which is the ideal medium for the transmission of parasitic diseases such as hookworm. Pools of standing water may become contaminated and convey enteric disease or serve

as ideal breeding loci for mosquitos, pests and vectors, contributing to the spread of filariasis, malaria, encephalitis and other diseases. Location of settlements near industries may expose residents to high levels of pollutants and make them vulnerable to industrial disasters.

Vectors and Hosts of Disease

Insect and animal carriers of diseases are serious health hazards, where climate and inadequate provision for the disposal of solid wastes and waste water ensure the propagation of vectors. Dengue hemorrhagic fever and filariasis spread by mosquitos are increasing in many urban areas, and onchocerciasis, schistosomiasis and malaria which are normally associated with rural areas are increasingly problems in urban centers.

Overcrowding

Small, poorly ventilated dwellings increase exposures to communicable diseases spread by aerosol droplets — for instance influenza, tuberculosis, meningitis and upper respiratory infections, all of which are associated with overcrowded housing. In addition, the frequency of all diseases transmitted through direct inter-human contact increases dramatically with population density.

Air

Air pollution from fires and stoves in the house has a serious impact on the health of hundreds of millions of people in developing countries. Women and children are most affected, and it is likely that high indoor air pollution levels in homes exacerbate respiratory illness in children — one of the chief causes of child mortality in developing countries. Biomass materials are often the only source of fuel for half the world's population, and their use is responsible for a large proportion of chronic respiratory disorders. Insufficient indoor space and poor smoke exhausting, coupled with inefficient burning practices, exacerbate the situation.

Food Safety and Nutrition

Apart from nutritional considerations, food can serve as the medium for the intake of toxic chemicals and micro-biological

agents; infections resulting from the latter agents are the most common food-borne diseases. Low income groups' housing often has inadequate or no provision for food storage to protect against spoilage and contamination. Inadequate water supplies and washing facilities make the hygienic cleaning and storing of utensils for cooking and food preparation very difficult. Urban migration may contribute to an increased incidence of child malnutrition, through a decline in breast-feeding, reduced child-care associated with the loss of the extended family, and high environmental contamination by infectious organisms.

The Home as a Workplace

Needs for family income leads to increasing the amount of indoor space dedicated to revenue-generating activities such as shops, workshops and rooms for rent. Using the home as a workplace can mean increased health risk from chemicals or accidents including fires and poisonings.

Mental Illness and Social Deviance

Higher rates of mental problems and social deviance occur in adults and children living in urban areas. The causes are complex, but recognized adverse factors and psychological stressors in low-income settlements include overcrowding, lack of privacy, lack of space and facilities for recreation and children's play, large family size, poverty, unemployment and lack of secure residential tenure. In many countries people are experiencing rapid changes in the type of housing, e.g., from rural village to urban squatter settlement, or from traditional housing to an apartment in a high-rise building — changes from the accustomed spatial layout of villages and communities, and such public areas as courtyards, play areas, and markets. It is clear that a proportion of people experiencing migration adapt poorly, i.e., they experience difficulties in **acculturation**, the process of adapting to the economic, cultural, social, political, economic and psychological changes the migrant experiences. Acculturation experience is associated with virtually the whole range of mental health problems, including depression, anxiety, confusion, paranoid states, addictions and a variety of behavioral dysfunctions (Berry and Kim, 1988). It will be critical —

assuming the socio-economic and other causal forces of urbaniz-
ation continue — to identify the factors that influence accultura-
tion, and particularly, the types of support that can help people
to adapt successfully.

Transportation

Most low-income settlements are located at some distance
from the central district, without adequate public transport.
Access to employment, markets and services may be restricted,
leading to a reduction in income and depressed nutritional
status. Health problems may be exacerbated by poor physical
access to health services.

Industrialization

Health problems of toxic substances and hazardous wastes.
The wastes of industries of developing countries often contami-
nate lakes or streams that serve as supplies of washing, drinking
and cooking water. Periods of heavy effluent discharge from
agricultural processing industries are likely to be seasonal, and
especially hazardous when they correspond to low water level
periods. The most common problems associated with industrial
facilities are air and water pollution, the creation of solid wastes,
noise, modification of traditional land use, and problems associ-
ated with the settlement of workers and their families.

Security against Theft and Assault

This is a major concern worldwide, particularly in urban
areas, in both developing and developed countries. Metal bars
and grilles installed on windows and doorways may be haz-
ardous, by preventing a quick exit in the event of fire. Improved
security measures are needed, both in the physical design of
houses and buildings, and in community programmes (such as
"neighborhood watch" programmes) to alleviate this problem.

Noise

Noise in residential areas is difficult to link to readily mea-
sured health deficits (such as the nerve deafness caused by
prolonged exposures to high noise levels in industrial settings).

However, surveys of inhabitants of apartment blocks reveal that noise from neighbors is a major cause of annoyance and reduction in the quality of life.

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Trends in Housing
and the Housing Environment:
Increasing Threats
to Health

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A review of trends in various indicators of environmental conditions with adverse health impacts shows an alarming deterioration in living conditions especially in urban areas and developing countries:

Housing Quantity and Quality

Information generated during the International Year of Shelter for the Homeless (IYSH — 1987) indicated that more than 1,000 million people live in grossly inadequate shelter and that 100 million have no shelter whatsoever. Further, it was concluded that the housing situation in the developing countries is worse now than it was ten years ago (UNCHS, 1987).

The majority of the urban populations in developing countries are poor and their needs for services and facilities exceed the capacity of governments to provide them (Hardoy and Satterthwaite, 1986). This has given rise to an expanding informal sector of housing, income generation and community services, provided by the people themselves. The informal sector of urban areas in developing countries is growing at a much faster rate than is the formal sector of government (UNCHS, 1988b).

The Housing Environment

Pollution. The Global Environmental Monitoring System (GEMS) implemented by WHO and the UN Environment Programme (UNEP) has collected data on environmental quality in urban areas during the past ten years. The results indicate the relative severity and trends in environmental pollution affecting human health (WHO/UNEP, 1987).

Urban air quality is far from satisfactory. Almost half the cities included in GEMS sampling exceed the short-term guide-

line established by WHO for health protection, and about another 20% fall in the range termed "marginal air quality". In two categories together, some 60–70% of the cities need increased air pollution control. More than 1,000 million people are estimated to be living in urban areas where the particulate pollution exceeds the WHO recommended limits, and over 600 million people live where the average sulphur dioxide pollution exceeds WHO recommended guidelines. Air quality is improving in some industrial countries, but in other regions the trends are worsening. For example, in Asian cities with moderate climates, sulphur dioxide concentrations are increasing in the order of 10% annually.

Pollution of water by sewage and chemicals, according to GEMS data, show adverse trends similar to those for air quality. It is known from national statistics that much of the municipal sewage in the developing countries receives little or no treatment. Undoubtedly, contaminated waters are a contributing factor to the high morbidity and mortality rates of infants, due to diarrheas and other diseases resulting from gastrointestinal infections. The quantity of water available per capita in urban areas is decreasing rapidly on a global basis because of population increases. For example, in Asia the per capita availability of water will be almost halved by the year 2000. Water quality is deteriorating due to the reduction in the per capita availability of water during the dry seasons in many African countries. Clearly, sewage, industrial waste water and drinking water supplies will have to be extensively treated and disinfected in order to avoid major adverse health consequences.

Drinking water supply and sanitation. Through the efforts of member states and involved international agencies cooperating in the International Drinking Water and Sanitation Decade (IDWSSD, 1980–1989), more that 225 million urban residents (excluding figures from China) were provided with drinking water supply and 250 million with sanitation facilities since 1980. Regrettably, this impressive and substantial accomplishment has been offset by the growth of urban populations during the decade. The percentages of urban populations covered by water supply has changed very little over the period from the beginning of the decade in 1980 up until the most current assessment

in 1988. This lack of progress in extending the percentage of coverage has ominous implications for health improvements. While there has been an encouraging 10% rise in the proportion of the urban population with access to **sanitary excreta disposal**, the 1988 assessment indicates that 215 million people remain without access.

Vector borne disease. Over the past several years vector-borne diseases in urban areas in developing regions are not only showing increased incidence, but have become endemic (Bang adn Shah, 1988). They include malaria, dengue fever/dengue hemorrhagic fever (DF/DHF), Japanese encephalitis, bancroftian filariasis, leishmaniasis and Chagas' disease. This increase in vector borne diseases is related to ecological changes occurring in the biological, physical, social and economic environment in urban areas. Several examples of the urban vector borne disease situation are listed below:

In the South East Asia Region 400 million urban dwellers are estimated to be at risk of bancroftian filariasis and over 46 million to be infected with parasites; and in three countries of the region endemic urban DF can be estimated at 20 million cases, in addition to 100,000 DHF cases that occur annually.

In Latin America, 100 million people live in endemic Chagas' disease areas, and 18 million people are infected. Chagas' disease was previously considered to be a disease exclusively found in rural areas, but is now being found more and more in urban areas. The principal causes are the migration of infected individuals from rural to urban areas, and the transmission which occurs as the result of vector adaption to poor quality housing in slums. In addition, some transmission occurs as the result of transfusion of infected blood.

Leishmaniasis is of growing concern in urban areas in the countries of Central and South America, North and Eastern Africa, South West Asia and Southern Europe. Over 200 million people are at risk in endemic areas, and 18 million are estimated to be infected (from all forms of the disease). In the course of urban land development projects, man has entered into the transmission cycle, whereas formerly transmission was the result of a zoonotic cycle.

Monitoring of Impacts on Health

There is a dearth of systematic epidemiologic studies, information collection and assessment, and monitoring of environmental conditions and related health indices pertinent to the living environment of human settlements. National health statistics are spotty, and those available to WHO are not specific to various types of urban settlements and/or housing, and provide very little useful material for epidemiologic analysis in respect of specific communities with various housing characteristics and living conditions.

There is an urgent need to develop systems to generate and distribute valid epidemiological information about the health effects of housing and environmental conditions on a global basis. The results of specific studies indicate that conditions of slums and squatter settlements (i.e., poverty, malnutrition, gross insanitation and overcrowding) have a severe impact on health.

Availability of Health Services

Towns and cities generally have more trained personnel and better communications than do rural areas. However widespread deficiencies exist in the availability of urban primary health care services, and in many parts of the world the slum and squatter areas have been left more or less completely to the nongovernmental health providers (Tabibzadeh, Rossi-Espagnet, & Maxwell, 1988). These transient population groups often have had negative experiences with government agencies, and there are often difficulties in mobilizing collaborative efforts with community organizations and local government agencies.

Approaches to Improved
Housing and Health

Improved Public Policy and Planning

In the 1960s and 70s, public low-cost housing programmes with government involvement in construction were popular. The concept involved the demolition of existing slums and squatter settlements, and relocation of the dwellers into government-built housing. However, the unit costs of the houses were

too high for the populations they were intended to serve. Such subsidies had the effect of limiting the numbers who could be helped. From the mid-1970s, the dual approach of squatter settlement upgrading and sites-and-services programmes became more frequent. These approaches were based on more positive attitudes towards the poor (UNCHS, 1988b). Squatters demonstrated that they possessed the skills, motivation, and sometimes the resources to provide basic shelter for themselves. They were able to provide themselves with building materials, and use self-help and mutual aid in building houses and community facilities.

The upgrading projects commonly involved provision for water supply, sanitation, electricity, surface drainage, and streets and footpaths, and sometimes tenure was granted to households. Sites-and-services efforts consisted of the opening up of new land and its subdivision into serviced residential plots. Provisions for legal tenure proved very important to persuading dwellers to invest their savings, time and labor in house and community improvements.

Both the upgrading and sites-and-services approaches have proved more successful than the earlier government provision of housing, although the success of the sites-and-services approach has been limited to some extent by the difficulties of obtaining sufficient cheap land located near to employment opportunities. Difficulties associated with cost-recovery (for materials and services provided) has limited the ability to "scale up" slum upgrading projects.

Both the upgrading and sites-and-services approaches depend on "informal sector" activity for actual house construction. The small-scale undertakings that fall under this definition are not registered by the authorities, do not keep accounts, and employ mostly casual labor. New enterprises enjoy easy entry into the market, without formal qualifications or permits, and without formal training or substantial capital. In the case of housing, the informal sector includes not only those who build the houses and provide the services, but also illegal subdividers, small cooperatives, and community associations.

Statistics provided by the United Nations Centre for Human Settlements (UNCHS) show that the contribution to housing

stock by the informal sector is significant: for example, in the Philippines 86% of the housing stock increase was produced by the informal sector, in Brazil 82%, in Venezuela 77%, in Colombia 64%, and in Chile 44% (UNCHS, 1988b).

It is now generally accepted that large public housing schemes that involve the public authorities in direct construction cannot provide a significant impact in reducing housing deficits. Government policies intended to promote healthy housing may have the opposite effect, through adverse impacts on the operation of the private and informal sectors, for example:

(a) unrealistic standards for construction; building acts and regulations must take account of social and economic realities, and must allow for gradual improvements.

(b) The codes, standards and regulations of the infrastructure may also be unduly restrictive, and hinder the use of healthful, lowcost technology, e.g., they may prohibit ventilated pit or pour flush latrines.

(c) Land-use controls and regulations have proved of little benefit when they are used to justify clearing of houses built in contravention to the regulations. The provision of land tenure or long-term leaseholds has proved to be a viable economic alternative and provides an effective incentive for communities to invest their limited resources in improving their housing so it promotes safety, health and well-being.

(d) Controls on rents, land and building material prices, while well-intentioned, have the long-term effect of maintaining distortions in the markets that tend to increase the present housing shortages, and discourage the maintenance of current housing stock. Thus landlords respond to controls by reducing the quantity and quality of houses and land available for rent by reducing the construction of new houses, withholding existing houses from the market, and providing less maintenance on rented houses. Less direct effects on housing and health come from public policies on property rights, economic enterprise, industrialization, taxation, migration, environmental management, and family

planning/population. The priorities established for socio-economic development, and the pattern of incentives for investment, likewise affect housing outcomes and their health impacts.

How can government housing policies and planning be improved? Despite the efforts of governments, the poor have often done more for themselves than governments have been able to do for them. However the government role is important, and includes: (a) making public and private investments in basic infrastructure and services; (b) insisting that health objectives become an intrinsic component of national housing policies; (c) setting ground rules through policies that **enable** people to undertake locally determined, self-organized and self-managed settlement programmes, based on individual and collective private initiatives; enabling policies are a basic theme of the UN Global Strategy for Shelter to the Year 2000 (UNCHS, 1988a), and of WHO's "Health Principles of Housing" (see Appendix I); (d) providing for housing programmes to be integrated into rural and urban development programmes.

At the level of the city or district, policies must support a healthy spatial layout of housing areas in relation to industrial plants, commercial districts and waste disposal areas. Traditional master plans with their zoning regulations, have sometimes not been able to prevent the siting of new settlements near hazardous industries. Instead, planning must provide for acquiring alternative land in more suitable areas and for encouraging people to use it, through governmental provision of basic infrastructure and the adoption of enabling policies.

Limited public and private resources dictate that mounting needs be met by more comprehensive and rational development planning action. Consensus among affected parties on goals, priorities, and approaching is a perquisite for coherent development that can mobilize the diverse elements of a city, to provide direction for problem analysis, policy and strategy formulation, planning, development actions, and management. Ecologically-based concepts are needed to undergird methodologies for solving the complexities of man's environmental relationships, and to frame guiding ideas that address a city's political, social and

economic realities, so that sectoral leaders and planners can "speak the same language" and exchange information that has the same meaning to all.

The vision of comprehensive and integrated approaches to housing and urban development has often been expressed, but the message has been poorly spread or understood, since the ideas are seldom applied in practice. Governmental sponsors and donor agencies are often required to show quantifiable results in the short term, and tend to favor projects that can be carried out by specialized units within sectoral organizations. Coherent action requires not only the linking of many sectors and autonomous organizations, but also a means to overcome jurisdictional fragmentation. Often the government of the central city has no authority over other towns in the conurbation, and rival local governments may pursue uncoordinated and contradictory policies. Major responsibilities may be assigned to different levels of government (e.g. **national** economic development and **local** land use planning), and local planning is rarely coordinated with regional and national planning (Schaefer, 1981). The result is inequities, wasted resources, and poor control of development actions, the situation compounded by poor staffing, information, and technology. In many cities, the only operational tool to address overall needs is an annual budget process, which is often inefficient, limited to the governmental sector, and more often aimed at keeping the leaking ship afloat than at encouraging imagination and innovation; sometimes, even this tool is not used.

Thus the planning process is fragmented, and in the same country or city, one can find separate applications of urban planning, land use planning, development planning, economic planning, and a galaxy of sectoral planning activities: for transportation and traffic, for housing, for industry, for commerce, for capital improvements, for water and sewerage, for wastes management, for education, for social services, for recreation and culture, for health, etc. Development planning often disregards health aspects and fails to consider information that could help avoid preventable health risks and promote healthy living. Drawing master plans, land use plans, and the grand programmes of sectors is but one planning function. Planning

should also be a managerial tool, applied to programme imple-
mentation and the determination of needs and actions for the
short- and medium-term. This requires that planning be demys-
tified, necessary protocols be provided, and training to plan be
extended and strengthened.

Overcoming the technical, structural, and political shortcom-
ings in urban planning requires specified urban policies, clearly
stated expectations of political leaders, improved information,
appropriate methods, and strong coordination of planning done
in many organizations and agencies. In many cities, the imple-
mentation of plans requires more adequate human resources
and improved processes of managing development, as well as
the means to coordinate predominantly fragmented structures
for economic and social action.

Development of intersectoral
Mechanisms and Action

Suitable intersectoral structures and processes are required
for coherence in the planning and implementation of urban
development processes, but designs and specifications must also
be developed. Setting up high-level consultative bodies makes a
beginning on the task; to complete it, structural arrangements
that reach down to the front-line units of each sector (and the
community) must be defined and put in place. Feasible pro-
cesses — for information exchange, information management,
planning, decision-making, programming, and logistical sup-
port — must likewise be specified, not through a one-time, all-
out effort but through a continuing process that leaves room for
trial and error, and learning from experience.

Two provisions are essential to developing intersectoral
capacity. One is setting up sanctions — preferably positive — to
foster cooperation. Intangible rewards, such as enhanced pros-
pects for an agency or voluntary organization to fulfill its mis-
sion, can be powerful. The second provision is to actively
promote and coordinate cooperative action. This function may
be undertaken by a staff or body equipped with skilled and
politically powerful resources, attached or close to the "head of
government's" office, and with the capacity for more than nomi-
nal oversight.

Mobilizing and Enabling Communities

Enabling policies at local level include changes in the way funds are allocated and used, the ways in which credit is generated and disbursed, and ways in which decisions are made and responsibility is exercised.

The concept of community participation — that people must be involved in bettering their condition through development — has become a truism of socioeconomic development. While participative strategies are sometimes favored as a means of transferring costs, the more compelling argument is the benefit of mobilizing the energies and talents of individuals and groups — doing *with*, rather than doing *for*. Government's role is to "enable" communities to pursue their goals, making strategic inputs — economic, legal, educational, organizational — to motivate and support popular action.

In the urban context, "community" has multiple meanings, referring not only to the city as a whole, but also to neighborhoods, internal settlements, affinity and age groups, and trades and professions. Thus, shelter policy may involve communities of builders, architects, materials fabricators, social action agencies, and financial institutions, as well as groups of residents themselves.

All such communities require a greater awareness that environmental conditions are important determinants of health, and that there are many steps that can be taken at the community level to reduce health risks. The creativity and resources of people must be mobilized, guided and aided in improving the shelter and environmental situation of local neighborhoods.

Successes in mobilizing both urban and rural communities have been described, including local and national organizing efforts. Most community participation schemes, regardless of sponsorship, tend to be based in single sectors and to have limited aims; they may work at cross purposes to other efforts. Schemes sometimes break down at the place where official agency staffs interface with community groups; interactions between the bureaucracy and indigenous groups have to be carefully worked out, to ensure that needed supports are delivered and performance is audited fairly.

Community enablement has been most productive when explicit goals have been jointly specified, clear action lines have

been defined, and popular involvement has been respected. Linking with existing social structures has been a useful tactic, but is often more feasible in cohesive rural settlements, than amidst the more diffuse social structures of cities. The full potential of this approach has yet to be tapped in many countries, and research is needed into such issues as sustaining volunteer efforts and finding suitable means to provide tutelage and subsidies.

WHO and other agencies are supporting workshops which bring together local government officials, and community leaders, and health and community workers to disseminate information about housing and environmental improvements that can be undertaken at the community level, with or without government support. Approaches are outlined in a number of WHO/RUD publications, prepared in collaboration with the UN Environment Programme (UNEP), which deal with environmental health issues, such as surface water drainage and insect and rodent control (FIGURE 1). The approach is a "self-help" one, in which members of a group within a district may decide to assist each other reciprocally, in order to (a) reduce the need for technical and financial assistance from the government, (b) put the latent capacity of people to work, and promote initiative and collective action, and (c) to strengthen the participants' confidence in themselves.

Demonstration projects and case studies are useful in promoting community participation, especially if the information gained from such projects is disseminated through publications, media announcements, conferences etc.

Finally, primary and occupational educational institutions must be encouraged to include health education principles in the curriculum, and to ensure that this content appropriately covers environmental factors in the maintenance of good health. Similarly, community education via mass media is required to provide information and encouragement for people to improve sanitation, waste disposal and drinking water quality in their communities.

Strengthening environmental health services

Protecting and promoting health is increasingly a major objective of the work of many agencies involved in managing

housing and the urban environment. Public health leadership can help to optimize the contributions of these agencies, by increasing awareness of health implications, providing technical guidance, and advocating health-promoting choices in policies and programmes. To do so, sound "health intelligence" must be generated and communicated. The role of health authorities includes (a) defining health problems and the environmental determinants that contribute to or cause them, (b) identifying policies (or changes in existing policies), and actions by muni- cipal and national authorities that can ameliorate the health problems; this includes an assessment of current policies and whether they may cause possible adverse health impacts; (c) communication of this health intelligence to decision makers in the appropriate sectors; and (d) technical assistance in the pro- gramming and implementation of policies.

References

Adegbola, A. (1987). The impact of urbanization and industrialization on health conditions: the case of Nigeria. *Wld Hlth Statist. Quart. 40,* 74–83.

Bang, Y.H. & Shah, N.K. (1988). Human ecology related to urban mosquito- borne diseases in countries of the South East Asia region. *Journal of Communicable Diseases, 20,* 1–17.

Berry, J.W. & Kim, U. (1988). Acculturation and mental health. In P. Dasen, J.W. Berry & N. Sartorious (Eds.), *Health and cross-cultural psychology: Towards applications.* London:Sage.

Eckholm, E.P. (1977). *The picture of health: Environmental sources of disease.* NY:Norton.

Hardoy, J.E. & Satterthwaite, D. (1986). Shelter, infrastructure and services in third world cities. *Habitat Intl, 10,* 245–284.

Hardoy, J.E. & Satterthwaite, D. (1987). Housing and health: Do architects and planners have a role? *Cities, 4,* 221–235.

Martin, A.E. (Ed.). (1977). *Health aspects of human settlements: a review based on the technical discussions held during the Twenty-ninth World Health Assembly,* 1976. Geneva, WHO Public Health Papers No. 66.

Oya-Sawyer, D., Fernandez-Castilla, R., & Luis de Melo Monte-Mor, R. (1987). The impact of urbanization and industrialization on mortality in Brazil. *Wld Hlth Statist. Quart., 40,* 84–95.

Schaefer, M. (1981). *Intersectoral coordination and health in environmental manage- ment: an examination of national experience.* Geneva, WHO Public Health Papers No. 74.

Tabibzadeh, I., Rossi-Espagnet, A., & Maxwell, R. (1988). *Spotlight on the cities: Improving urban health.* Geneva, World Health Organization.

United Nations Centre for Human Settlements (UNCHS), (1987). *Global report on human settlements, 1986.* NY: Oxford University Press.

UNCHS, (1988a). *Global strategy for shelter to the Year 2000.* Nairobi: United National Centre for Human Settlements. [See also United Nations General Assembly Resolution No. 43/181 of 20th December, 1988 "Global Strategy for Shelter to the Year 2000"].

UNCHS, (April, 1988b). *Health implications of public policies for the housing sector.* Paper distributed at the Healthy Public Policy Conference. Adelaide, Australia.

Wolman, A. (1986). Give health a chance-with healthy surroundings. *World Health Forum, 7,* 107–112.

World Health Organization (1987). *Housing- The implications for health.* Report of a WHO Consultant, Geneva, June, 1987. WHO/EHE/RUD/87.2

WHO/UNEP. (1987). *Global pollution and health.* Global Environment Monitoring System (GEMS). Results of health-related environmental monitoring. UK:Yale Press.

Appendix I

Rural and Urban Development and Housing Guidance Materials*

1. UPGRADING ENVIRONMENTAL HEALTH CONDITIONS IN LOW-INCOME SETTLEMENTS; A COMMUNITY-BASED METHOD FOR IDENTIFYING NEEDS AND PRIORITIES
2. URBAN SURFACE WATER DRAINAGE IN DEVELOPING COUNTRIES
3. COMMUNITY PROGRAMME FOR INSECT AND RODENT CONTROL THROUGH ENVIRONMENTAL MANAGEMENT *CAP — KIT*
4. URBANIZATION AND ITS IMPLICATIONS FOR CHILD HEALTH: POTENTIAL FOR ACTION
5. INDOOR ENVIRONMENT: A GUIDEBOOK ON THE HEALTH ASPECTS OF AIR QUALITY, THERMAL ENVIRONMENT, LIGHT AND NOISE
6. ACCESS TO LIFE-SAVING SERVICES IN URBAN AREAS
7. CHILD SURVIVAL IN OR NEAR CITIES: INTERVENTIONS FOR A HEALTHIER ENVIRONMENT
8. ENVIRONMENTAL HEALTH ASPECTS OF PLANNING URBAN AREAS
9. HEALTH PRINCIPLES OF HOUSING
10. HOUSING AND HEALTH: AN AGENDA FOR ACTION
11. SHELTER AND HEALTH, CONTRIBUTION OF THE WORLD HEALTH ORGANIZATION TO THE INTERNATIONAL YEAR OF SHELTER FOR THE HOMELESS
12. CURRICULA FOR TRAINING ARCHITECTS AND URBAN PLANNERS
13. RECOMMENDATIONS OF THE WHO EXPERT COMMITTEE ON "ENVIRONMENTAL HEALTH IN URBAN DEVELOPMENT"

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