Health principles of housing

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Preface

Over and above their basic purpose of providing shelter against the elements and a focus for family life, human dwellings should afford protection against the hazards to health arising from the physical and social environments.

At its best, appropriate housing promotes physical and mental health. It provides people with psychological security, physical ties with their community and culture, and a means of expressing their individuality.

Unfortunately, the dwellings in which most of the world's people live do not enable them to enjoy these benefits to the full. Indeed, for great and increasing numbers, the available housing not only fails to protect them against health risks, but increases their exposure to environmental hazards, many of them preventable. Particularly at risk are those who are caught up in rapid urban change, accompanied by limited resources and inappropriate public policies.[a]

The underlying forces that condemn people to marginal or submarginal housing are poverty, inadequate socioeconomic development, population growth, migration and failure to ensure equitable access to land and housing. These forces are insurmountable for many people, particularly in developing countries, where housing conditions in many areas are declining.

This publication outlines the health needs to be met in human dwellings and the steps that governments, communities and families might take to meet them, with particular attention to developing countries. The World Health Organization has strengthened its support to Member States in this connection,

[a] See: *Urbanization and its implications for child health: potential for action.* Geneva, World Health Organization, 1988.

taking into account the trend towards accelerating urbanization and the worsening housing situation in many developing countries. In particular, as part of WHO's contribution to the International Year of Shelter for the Homeless,[a] a Consultation on Housing — the Implications for Health, was held in June 1987.[b] The experts and representatives of international bodies participating in the Consultation reviewed, revised and approved the principles set forth in this publication. They also proposed six lines of action for immediate attention by governments and the international agencies and nongovernmental organizations concerned.[c]

The principles published here represent a distillation of the policies pertinent to housing developed over many years by national health authorities; health information from epidemiological and other research studies, and technical reviews; the deliberations of WHO Expert Committees and technical meetings; and studies of other international bodies concerned. The principles represent the work of many individuals and groups. However, special acknowledgement must be given to Professor Morris Schaefer, formerly with the School of Public Health, University of North Carolina, NC, USA, for his diligent efforts in preparing a working draft of the principles and helping to edit them during the Consultation. Dr A. E. Martin, formerly Principal Medical Officer (Environmental Health) Department of Health and Social Security, London, England, is also deserving of thanks for his research efforts and contributions to the working draft. The participants in the WHO Consultation, responsible for the revision and approval of the principles, are listed in Annex 1.

[a] *Shelter and health.* Unpublished WHO document, WHO/EHE/RUD/87.1, 1987.
[b] *Housing — the implications for health. Report of a WHO Consultation.* Unpublished WHO document, WHO/EHE/RUD/87.2, 1987.
[c] *Housing and health: an agenda for action.* Unpublished WHO document.

Introduction

This publication has been prepared for the use of leaders, officials and scientists involved in health, housing and socioeconomic development. Part I gives guidance on basic issues and concepts connected with the health aspects of housing and summarizes the information available on the underlying relationships between health and housing conditions. Part II describes public health approaches to meeting housing-related health needs.

In the individual countries, the principles and approaches in question can serve as a check-list of the health problems to be tackled by health authorities and others involved in social development. To meet specific national problems, the information should be used selectively and adapted as a basis for a logical sequence of activities aimed at improving the situation.

The principles

For the purposes of this publication, "principles" may be defined as rules for guiding thought and action, based on experimental, clinical or epidemiological findings. As such, they have been deliberately left general. The evidence on which they are based varies in quality (*1*). Many of them require situation-specific adaptations, to bring them in line with circumstances (climate, culture), preferences (choices of locations and housing materials), and the availability of resources to provide and improve housing.

The general nature of these principles distinguishes them from housing standards (*2*) and codes, which are usually drawn up by governments on the basis of selected principles, to provide norms that are applicable to particular communities at specific times. Standards and codes are thus the adaptation of principles to concrete situations. Further, because of the local and continuing nature of much activity connected with housing, the scope and

applicability of housing standards will always be more limited than that of the principles discussed in the following pages.

Background

Along with food and clothing, shelter has long been regarded as a basic need for human life. At a minimum, shelter has to provide protection against the stresses of the physical environment, as well as satisfying people's psychological requirements for a "place" or territory of their own and a focus for the primary social group, the family.

The ways in which human beings meet this basic need are myriad; a vast range of materials is used in buildings (wood, brick, earth, concrete, stone, foliage, animal skins, ice) and there is a great diversity of patterns in which structures are spaced, clustered or even moved about. Ownership and tenure of housing and land also vary widely, and legal provisions are often at the root of the exclusion of low-income groups from adequate housing. The provision of housing is closely related to occupation and economic activity, which are themselves dependent on geographical, technological and climatic factors. Transport is also an important determinant of where and how people live, as are political conditions: the levels of stability, security, prosperity and peace. The quality and distribution of its housing clearly reflects a country's economic status, social values and political character.

Housing is intimately related to health. The structure, location, facilities, environment and uses of human shelter have a strong impact on the state of physical, mental and social well-being. Poor housing conditions and uses may provide weak defences against death, disease, and injury or even increase vulnerability to them. Adequate and appropriate housing conditions, on the other hand, not only protect people against health hazards but also help to promote robust physical health, economic productivity, psychological well-being and social vigour.

This document discusses in some detail the relationships between housing and health. However, the possibilities of applying that knowledge to improve health and the human condition are limited in many countries by a number of conditions and constraints that must be recognized, understood and dealt with.

Conditions and constraints

The prospect for "healthy housing for all" is most fundamentally affected by the fact that most existing human dwellings are inadequate to foster optimum health or even to protect people against avoidable health hazards. The distribution of deficiencies varies sharply between countries and between economic groups within countries. Improving the housing situation largely depends on progressive socioeconomic development, which in many countries is hindered by:

- inadequate measures to reduce *poverty*, which limits the material and social means for improvement;
- the *growth of populations* at rates that outrun the pace of economic development, and the inequitable distribution of the benefits of development;
- restrictions on *access to land* for housing and farming, which affects prospects for economic self-sufficiency, as well as for adequate housing;
- rapid *urbanization*, usually the result of economic changes, which produces problems that local governments are ill equipped to meet;
- inappropriate *policies* that may, *inter alia*, perpetuate unrealistic and obsolete standards that limit access to housing for the poor;
- *limited powers of intervention* by local governments, in view of the fact that most dwellings are built by those who live in them (*3*);
- inadequate *popular knowledge* about the health aspects of housing and its uses, all the more important because housing decisions and actions are so highly decentralized;
- *inadequate attention to social development*, as it interacts with economic development or stagnation; and
- *unstable political and military conditions* that restrict the possibilities of adequate housing.

Despite their negative or limiting effects, these constraints suggest some criteria on which to base the design of effective policies and programmes to improve the situation. For example, recognizing the extent to which the provision of housing depends on individual action suggests that improvement efforts

should harness the aspirations and energies of householders and local groups; where the forces of poverty and population pressure are strong, moderate and incremental strategies will be more effective than radical approaches.

PART I

Principles related to health needs

The relationships between housing conditions and human health are set forth in six major principles, some of which include a number of subdivisions. The subjects of the major principles are:

1. Protection against communicable diseases.
2. Protection against injuries, poisonings and chronic diseases.
3. Reducing psychological and social stresses to a minimum.
4. Improving the housing environment.
5. Making informed use of housing.
6. Protecting populations at special risk.

PRINCIPLE No.1

Protection against communicable diseases

Adequate housing provides protection against exposure to agents and vectors of communicable diseases, through

- **safe water supply,**
- **sanitary excreta disposal,**
- **disposal of solid wastes,**
- **drainage of surface water,**
- **personal and domestic hygiene,**
- **safe food preparation, and**
- **structural safeguards against disease transmission.**

In most developing countries, in which the bulk of the world's population lives, communicable diseases continue to cause an excessive number of illnesses and deaths. Infants and young children are the main victims of these conditions. Immunization provides an important countermeasure, but it is limited to certain diseases and may be further constrained by inadequate financial and technical resources and by problems of distribution. The domestic environment is therefore a crucial battleground for reducing exposure to disease pathogens; where the battle is not well fought, the dwelling becomes a killing ground of the youngest and weakest.

Because so many aspects of the home and the neighbourhood may be implicated in the transmission of communicable diseases, Principle No. 1 has seven subdivisions.

Principle No. 1.1
Safe and adequate water supply

An adequate supply of safe and potable water assists in preventing the spread of gastrointestinal diseases, supports domestic

and personal hygiene and provides an improved standard of living.

Because water is essential to life itself, people must be protected against biologically contaminated water, which may carry such harmful microorganisms as shigellae, salmonellae, enteropathogenic *Escherichia coli*, probably certain enteroviruses, and various protozoal and helminthic parasites. Water-borne diarrhoeal diseases affect young children particularly and, in some developing countries, may account for as many as a third of all deaths of children under five years of age. The severity of these diseases increases markedly when exposure is combined with the effects of malnutrition. Water in a reasonable quantity is required for adequate personal and domestic hygiene (*4*), and if provided in a convenient way will serve to promote such uses, as well as increasing family productivity and the safety of food preparation.

Large numbers of people are without access to safe and adequate water supplies. An estimate by WHO at the end of 1985 indicated that 23% of urban and 64% of rural dwellers lack such access, and it is estimated that 1200 million people will still be without it in 1990 (*5*).

While a protected water supply piped into the dwelling is the best means of providing adequate quantities of safe water, this will be impossible to achieve in the near future for most rural dwellers and many urban dwellers in developing countries. Having to carry water from a distance almost always means that there will be inadequate quantities in the home and an added risk of contamination.

Water may be supplied from a variety of sources: springs, streams, ponds and lakes, surface wells or deep boreholes. Sources should be protected against contamination; protection may involve both structural barriers and the reduction of contamination from insanitary human and animal behaviour. Even so, the degree of contamination will vary, and treatment—commonly by filtration or chlorination—will often be needed to ensure that the water is safe. To ascertain what needs to be done requires the regular examination of water samples to detect contamination by microorganisms. In both town and country, operation and maintenance work is required to ensure the continuing safety and availability of water.

Hygienic user behaviour, based on correct information, is essential to protect water from contamination during its transport to, and storage in, the home. The use of clean, closable containers to carry and store water and clean vessels to drink it from could improve the protection of perhaps a thousand million people in the world against water-borne diseases.

Principle No. 1.2
Sanitary disposal of excreta

Sanitary disposal of excreta reduces the faecal–oral transmission of disease and the breeding of insect vectors.

A prime source of the biological contamination of water, food and soil is human faeces. Contamination may occur near houses, as when people defecate on the ground or in areas where food is grown, or when latrines are improperly located in relation to wells, set in soil lacking satisfactory drainage, or inadequately maintained. Overflow from latrines results in insanitary muddy conditions that expose people directly to helminthic and protozoal parasites and other pathogenic organisms, as well as encouraging flies. Exposure may also be less direct, as when untreated excreta are introduced into water sources and then into the food chain, transmitting pathogenic organisms to people at some distance from the original site of contamination (*6*).

These hazards are worse in conditions of overcrowding, whether in slums, periurban settlements or temporary camps, where facilities for excreta disposal are absent, insufficient or badly maintained.

The global picture remains threatening. In 1985, WHO estimated that 40% of urban and 84% of rural dwellers were without adequate sanitary facilities and that the anticipated improvement by 1990 would still leave 1800 million people in that category. The situation in regard to sanitation is therefore even worse than in regard to water supply (*5*).

The main problem is not a technical one. Technological alternatives of various degrees of sophistication are available for the sanitary disposal of excreta, some relying on householders and others on community services or facilities. There is increasing interest in processes that can convert human wastes into useful agricultural soil conditioners and energy products;

however, careful hygiene and supervision are required to make sure that the processes destroy pathogenic organisms (*7–9*).

Principle No. 1.3
Disposal of solid wastes

Adequate and safe disposal of solid domestic wastes reduces health risks and helps to provide a more pleasant living environment; appropriate methods of storage and disposal discourage insect and rodent vectors of disease and protect people against poisonous substances and objects likely to cause accidental injury.

Predominantly a phenomenon of urban settlements, large and small, inadequate storage, collection and disposal of solid wastes can generate a number of health hazards, including the spread of gastrointestinal and parasitic diseases, especially when human excrement is mixed with other organic wastes. Primary prevention calls for reducing the insect and rodent vectors of disease, for which organic and other refuse provides a food supply, nesting places and breeding sites. Carelessly discarded appliances, vehicles, bedding and toxic substances increase the risk of fatal accidents, poisonings, suffocation, cuts and other injuries, with accompanying infections, especially for unwary children.

All these hazards increase with urbanization and economic development, as consumption becomes more varied and wastes include an increasing proportion of packaging materials, paper, cardboard, tins, bottles, and discarded appliances, machinery, and building materials. Where cities are growing faster than the ability of local authorities to provide services, which is the case in many urban communities in developing countries, the increases in health hazards from solid wastes are out of all proportion to the increases in population.

Efficient ways of dealing with solid wastes are well known (*10*) and well established in industrialized countries. Developing countries, however, face severe difficulties in organizing, financing and providing services, which often have a low priority in public budgets. Moreover, poor people who depend for a living on scavenging discarded materials constitute a group at special risk of injury and infection and may require advice on how to limit the dangers.

Principle No. 1.4
Drainage of surface waters

Efficient drainage of surface waters helps to control communicable diseases, safety hazards, and damage to homes and property.

Inadequate drainage of surface waters—including domestic wastewater—results in pools or muddy and marshy areas that provide breeding places for mosquitos, flies and other insect vectors of disease. Standing waters near wells, latrines and kitchens are of special concern, as they are important loci of biological contamination. Vector breeding sites, as well as unpleasant conditions, may result when inadequately maintained drainage systems become clogged and out of order.

Periodic flooding of wells, roadways, homes and other properties (including food stores) likewise creates hazards to public health and safety.

Principle No. 1.5
Personal and domestic hygiene

Adequate housing includes facilities for personal and domestic hygiene, and people should be educated in hygienic practices.

If a safe water supply and sanitary disposal of excreta are to be fully effective in controlling communicable diseases, they must be accompanied by good habits of hygiene. Bodily cleanliness, particularly washing the hands after defecation, is a necessary factor in breaking the chain of various infections and reducing the incidence of skin complaints (irritations, sepsis, dermatitis, eczema), and eye diseases (trachoma, conjunctivitis). Personal hygiene will obviously be easier to promote once there are adequate supplies of water on tap in houses, with proper disposal of wastewater.

Cleanliness and tidiness of dwellings, their furnishings and their surroundings will help to reduce direct exposure to microorganisms and to control insect and rodent pests and disease vectors. Water standing in open containers or puddles provides breeding places for the mosquito vectors of several parasitic diseases, and inadequately cleaned and maintained housing provides nesting and breeding sites for pests. Badly stored food

and careless disposal of food wastes likewise encourage flourishing populations of pests.

Rural families engaged in animal husbandry are exposed to special hazards. The faeces and urine of animals kept inside dwellings may harbour pathogens and increase the difficulty of maintaining cleanliness, thus increasing exposure to insect and animal disease vectors. Stabling must be at a distance from dwellings and pets must be kept pest-free in order to reduce the transmission of disease, especially to children.

Personal and domestic hygiene depends on hygienic behaviour as much as on hygienic facilities. While only few have the benefit of the best of facilities, education in the best hygienic use of the facilities that do exist can contribute to protection against disease—one example of how health can be promoted despite the financial constraints on improving structures and amenities.

Principle No. 1.6
Safe food preparation

Healthy dwellings provide facilities for the safe preparation and storage of food, so that householders can employ sanitary food-handling practices.

Eating habits in the home are of dual importance for community health. On the one hand, a person's nutritional status is closely related to his or her resistance to disease—indeed, nutrition may be the most powerful determinant of health status (*11*); facilities for food preparation affect nutritional practices and status (*4*). On the other hand, contaminated food is a medium through which a number of bacterial, viral, protozoan and helminthic diseases may be transmitted. Although some sources of contamination lie outside the home (natural toxins, chemical residues, food adulteration, unsanitary storage and marketing), significant domestic hazards can be attributed to the use of non-potable water in growing food, freshening it up and cooking it, to unhealthy ways of drying, storing, handling and preparing it, to inadequate cooking and to poor personal and domestic hygiene, including inadequate cleaning of vessels and utensils (*12*).

To be able to select, prepare, store and handle food properly requires both facilities (especially safe water, cooking equip-

ment, and suitable storage space) and informed culinary and hygienic practices (notably hand-washing after defecation).

Principle No. 1.7
Structural safeguards against disease transmission

Adequate housing provides structural safeguards against the transmission of disease, including enough space to avoid overcrowding.

The design, structural characteristics, maintenance and roominess of a dwelling affect the degree to which those who live in it are protected against communicable diseases. Dirt floors not only make domestic hygiene difficult, but may harbour helminths. Certain structural features may favour the breeding and nesting of disease vectors, particularly if they are allowed to fall into a state of disrepair, and window and door openings may need to be screened to reduce exposure to insect-borne diseases.

Overcrowding, particularly in conjunction with poverty and inadequate facilities, has been shown to increase the transmission rates of such communicable diseases as tuberculosis, pneumonia, bronchitis and gastrointestinal infections. Persons sleeping in close proximity in poorly ventilated rooms are more exposed to the spread of airborne infections, including meningococcal meningitis, rheumatic fever, influenza, the common cold, measles, rubella and pertussis.

PRINCIPLE No. 2

Protection against injuries, poisonings and chronic diseases

Adequate housing provides protection against injuries, poisonings and thermal and other exposures that may contribute to chronic disease and malignancies; special attention should be paid to

- **structural features and furnishings,**
- **indoor air pollution,**
- **chemical safety, and**
- **the use of the home as a workplace.**

As well as sheltering people against the elements and providing a suitable thermal environment, dwellings should afford protection against accidents and against hazardous substances that constitute immediate or long-term hazards to health. As in the case of other principles, meeting these requirements depends both on structural features and on human behaviour—sometimes culturally determined—in the use of housing (*13, 14*).

Principle No. 2.1
Structural features and furnishing

The proper siting, structure and furnishing of dwellings protects health, promotes safety and reduces hazards.

The type of housing available depends on climatic and economic conditions, as well as cultural preferences. While adapting to such constraints, building design, materials and construction techniques should produce durable structures that provide a safe, dry comfortable abode that shelters residents against vermin, extremes of temperature and recurring hazards of nature (earthquakes, hurricanes, winds). The siting of dwellings should reduce to a minimum exposure to noise, industrial pollution and hazards from dumps of chemical and food-

processing wastes, as well as direct and indirect dangers from flooding and landslides.

Climatic extremes may cause increases in morbidity and mortality. Their effects can be diminished by sound structures, insulation, efficient heating in cold weather, and adequate ventilation and air-conditioning in hot. The incidence of communicable diseases and gastrointestinal infections is generally greater in hot, humid weather. Hypothermia, particularly among the very young and very old, is a threat in cold weather, especially when temperatures are lower than the prevailing types of building can cope with. For the poor, good housing may need to be supplemented with education in self-protection and with community assistance in the form of fuel and temporary shelter (*15, 16*).

High-rise buildings, designed to economize on land use, may present special hazards, some of which increase directly with building height. Particularly if housing standards are weak and their enforcement is lax, structural weaknesses may be a direct threat to life and limb. Upper-storey residents in high-rise blocks may be at extreme risk in case of fire or explosion; the breakdown of the lifts as a result of mechanical failure or power cuts may impose additional stresses, especially on the aged and infirm. Wind turbulence and excessive stormwater run-off may add to the problems. Psychosocial problems in high-rise blocks may arise from excessive noise and limited privacy in poorly sound-proofed apartments, from lack of access to safe play and recreation areas, and from limited egress. For children, the choice may be between isolation in the apartment or play in the street out of contact with the parents, while the elderly and physically disabled may be condemned to isolation.

In most apartment blocks, safety may be improved by building stairways so as to reduce the dangers of falls, by setting windows high enough to prevent people falling out, and by designing and siting heating devices (particularly those with open flames or heating elements) in such a way as to lessen the risk of fire and the escape of noxious gases, such as carbon monoxide. In buildings and in consumer products, extreme caution should be exercised to prevent exposure of individuals to known toxic materials, such as lead paints, asbestos, creosote and certain plastics, polymers, and synthetics liable to give off toxic fumes. Work areas—notably kitchens—should be designed and equipped for safety as well as for efficiency. Lighting, both natural and artificial, should be adequate for people to

function properly, to enjoy the home setting and to avoid accidents. It should not be so bright or so dim as to damage the eyesight.

Furnishings should likewise be chosen with a view to safety. The use for upholstery, curtaining and carpets of synthetic materials that can easily catch fire and/or emit toxic fumes should be avoided. Children particularly should not be exposed to sharp edges and corners.

Structures, surroundings and furnishings should be kept in good repair to avoid injuries, particularly among children and the elderly, for whom accidents of various types are often the leading cause of death.

Principle No. 2.2
Indoor air pollution

Adequately designed, constructed and ventilated dwellings, free of toxic and irritating substances, reduce the risks of chronic respiratory diseases and malignancies.

Air pollutants in the home may include nitric oxide, carbon monoxide, radon gas, formaldehyde, sulfur dioxide, carbon dioxide, ozone, mineral fibres, creosote, organic compounds and tobacco smoke. Some of these pollutants come from building and insulating materials, and may become more dangerous as these materials deteriorate with age (asbestos is an example) (*17*).

By far the most common problems arise from fuel combustion inside dwellings, whether from inadequate venting of heating and cooking devices or from the burning of biomass fuels (firewood, charcoal, crop residues, animal dung) in open fires. Such fuels produce a complex of pollutants, which affect hundreds of millions of people in developing countries (*18*). Pollution hazards may be intensified by the use of recirculating forced-air heating systems in tightly insulated structures (the "sick building syndrome") (*19*), and pollutants from outdoors may be found in higher concentrations once they are trapped inside (*20*). On house sites subject to persistent high humidity or even waterlogging, the selection of appropriate materials and a suitable design may help to reduce adverse effects.

Principle No. 2.3
Chemical safety

Sensible precautions in the household reduce exposure to hazardous chemicals.

The increasing use of chemicals in all countries and communities poses serious threats to safety and health. Exposure to toxic and caustic substances may lead to poisonings and burns and to chronic effects, not all of which are known. Children may be exposed to hazardous household products used for cleaning and other purposes, as well as to drug poisoning. Pesticide residues in food may endanger the whole family, and on farms there may be direct hazards from airborne agricultural chemicals and their residues on clothing and footwear. Chemical contamination of surface and ground water sources by emissions and faulty disposal of hazardous materials, is an increasing public health problem. Concentrated chemicals may be found in the home when it is also used as a workplace (see Principle 2.4).

Among the many facets of a chemical safety programme, teaching householders how to protect the family from chemical hazards is of increasing importance. There should be means of preventing the access of young children to chemicals in the home and the whole family should be informed about chemical hazards and safety precautions.

Principle No. 2.4
The home as a workplace

Where a dwelling is also used as a workplace, those who live in it should be protected against hazards and contamination.

In agricultural settings, the dwelling is often closely connected with the family's occupation and with concomitant hazards from mechanical, chemical and animal sources. Adequate separation of stabling and working premises from living areas, and observance of the rules of good hygiene are necessary for protection against disease, poisonings and fires.

In both urban and rural areas, houses may be used for a wide range of cottage industries or for piecework. This may involve the use of volatile or other hazardous substances, produce harmful levels of noise, generate fumes and smoke or require the

use of open flames or devices that pose the threat of fire and explosions. The hazards are increased where such activities are carried out in multi-unit houses. Protection of workers and their families and neighbours may require intervention by properly informed municipal authorities or neighbourhood associations with a view to reducing or eliminating risks to safety and health and educating the workers themselves in safety precautions.

PRINCIPLE No. 3

Reducing psychological and social stresses to a minimum

Adequate housing helps people's social and psychological development and reduces to a minimum the psychological and social stresses connected with the housing environment.

From earliest times, people have felt the home to be a refuge, a haven from physical danger and animal foes, from the rigours of everyday work, and from the stresses of social interaction — a place for privacy and intimacy. The nature of the stresses and their psychological impact have changed in many cultures, but the concept of home as a refuge endures. In the course of history people have also developed patterns of personal and social interaction that are facilitated by the environment in their houses and neighbourhoods.

Particularly in urban settlements, the housing situation may not be conducive to good mental health, which is related to the notion of home as a refuge and to the sociocultural functions of space. Overcrowding in dwellings and settlements, uncertainty of tenure, excessive noise, the struggle for survival, the fear of crime and other threats to physical security, squalor, physical discomfort and the ugliness of the surroundings are frequent sources of psychological stress (*21*, *22*).

Such stresses are all the greater for those — and there are millions of them in some developing countries — who are making the transition from rural to urban life; for them, the "modernization syndrome" requires adjustment to radically different life styles, diet, occupation, social relationships (or the lack thereof) and social status, often coupled with a disruption of family associations and supports; without social networks to sustain them, people are more vulnerable to disease. Depressing and deficient housing conditions not only fail to provide the refuge sought, but may also aggravate the difficulties of adjustment (*23*, *24*). As those who live in these usually urban dwellings in

most cases rent their accommodation, fears of arbitrary eviction and unrestrained exploitation by landlords constitute a special source of emotional stress.

To reduce unhealthy psychosocial stresses to a minimum, dwelling environments should:

- provide adequate living space, properly ventilated and lit, decently equipped and furnished, with a reasonable degree of privacy and comfort;
- provide a sense of personal and family security, reinforced by the community structure;
- provide space for children's play, sports and recreation, with minimum risks of injury and infection;
- be so sited as to reduce exposure to noise, provide contact with greenery and enable people to have access to community amenities; and
- be easy to keep clean and in good order.

In addition to a congenial home kept in good condition, people's mental health may be improved by sharing in activities with others, especially activities that serve to diminish the feeling of powerlessness that so often affects the urban and rural poor, and aimed at improving the circumstances in which they live (*3*).

PRINCIPLE No. 4

Improving the housing environment

Suitable housing environments provide access to places of work, essential services and amenities that promote good health.

Dwellings exist in a setting; that setting may present both social hazards to health and possibilities of protecting and promoting health. The potentials of the housing environment may be altogether different in urban and rural areas. Urban populations face problems of overcrowding, noise, air pollution, crime, poverty, traffic congestion and traffic hazards, and social isolation, although generally they have better access to services and amenities. In rural areas, physical isolation, poverty and the lack of financially viable sanitary and support services may increase risks to health.

The housing environment should provide not only the services required for maintaining health and socioeconomic activities, such as water supply, sanitary disposal of excreta, refuse and other wastes. surface water drainage and control of pollution, but also a setting and amenities that promote well-being: an aesthetically pleasing environment that provides space and facilities for play and recreation, access to work, commercial and cultural facilities, affordable transport services and formal and informal education (*25*).

Three provisions are of special concern to health:

1. **Security and emergency services** to protect against bodily harm, victimization and substances harmful to health, as well as fire, rescue and emergency medical services. The provision of these services depends not only on social cooperation in organizing and financing them, but may also depend on the physical configuration of the settlement: closely packed dwellings and narrow streets may make the older quarters of some cities inaccessible to service vehicles and personnel,

and traffic congestion may make timely response to emergencies impossible.

2. **Health and social services** should be physically accessible for both preventive and curative purposes. The transport provided in housing areas should enable residents to get not only to their places of work, but also to these supportive services.

3. **Access to cultural and other amenities** means access not only to amenities in the neighbourhood and the larger community of which it forms part but also to printed matter, radio broadcasts and television. The provision of facilities for play and recreation in the neighbourhood and the encouragement of participation in communal activities promote a sense of belonging and of social support that contributes to personal health as well as to community well-being. The planting of vegetation in housing areas—trees along the streets, patches of greenery or woodlands—helps to improve climatic conditions in the community by absorbing dust, regulating humidity, reducing excessive exposure to sun and wind, and recharging the ground-water, and adds a touch of beauty to the environment.

If it is to be adequate, housing development must be based on effective community housing standards and the means of enforcing them. In the urban areas of many industrialized countries the infrastructure this requires is largely provided under government auspices and results from a long evolution of institutions set up to defend the people's interests in regard to housing. In other situations, reliance may have to be placed on voluntary efforts by the people themselves to develop institutions that can lay down and enforce standards.

PRINCIPLE No. 5

Making informed use of housing

Only if residents make proper use of their housing can its health potential be realized to the full.

As mentioned in regard to each of the preceding principles, the health impact of housing depends not only on physical factors, such as site, structure and social amenities, but also on the uses to which housing is put by human beings individually and collectively.

The most adequate of structures will not serve health purposes, if it is not maintained and if its defences against health hazards are allowed to deteriorate. The provision of hygienic facilities will do little good unless they are properly used for personal and domestic cleanliness, and the best of food preparation and storage equipment will be ineffective if it is not properly used. The use of safe designs and materials in consumer products can only go so far in preventing accidents, injuries, fires and poisonings; to be fully safe, the products must be used with the necessary caution and control. Likewise, no amount of land-use planning and zoning can ensure the salubrity of a neighbourhood, if its residents allow it to become run-down and squalid or if they fail to take action against environmental damage and disfigurement.

Proper use of housing and the enhancement of its capacities for improving individual and community well-being depend ultimately on the attitudes, aspirations and knowledge of householders. Experience in various countries indicates that positive attitudes can be developed and integrated into the popular culture. In some cases the changes have been sponsored by social leadership and the media, occasionally with government participation; in other instances, they appear to have arisen spontaneously from the people, initially at the local level. Although the origins of changes in attitude are somewhat obscure, the need for public information and education could be

met by systematic measures. It may also prove useful to examine the strength or weakness of householders' incentives to improve their dwellings and neighbourhoods. Some types of tenure and personal investment may strongly encourage the maintenance and improvement of housing, while others may have no effect or may even discourage such actions.

The attainment of health and social objectives in relation to housing, therefore, depends not only on technical and material measures, but also on encouraging and helping people to make the optimum use of the housing available, a process to which governments can make a helpful contribution by stimulating, responding to, and cooperating with popular initiatives and desires (*26*).

PRINCIPLE No. 6

Protecting populations at special risk

Housing should reduce to a minimum hazards to the health of groups at special risk from the conditions they live in, including

- **women and children,**
- **those who live in substandard housing,**
- **displaced and mobile populations, and**
- **the aged, the chronically ill and the disabled.**

The inadequacies in housing that have been described pose special health risks to certain groups. These risks may derive from unusual exposures, biological states or social circumstances.

Women and children are more likely than adult males to be exposed to health hazards in the domestic environment, mainly because they spend more time in the home and their activities involve greater exposure to whatever safety deficiencies and health hazards are present. The frailty of infants and children and the impoverished conditions under which so many millions are condemned to live, coupled with their lack of information, makes them especially susceptible (*3*); worse off still are the millions of abandoned "street children", who have no dwellings at all.

Inadequate provisions for water, domestic hygiene and food preparation increase women's labour and take their toll of vitality and resistance to disease; the drain on their strength may be aggravated by additional work in the fields or in the home to supplement the family's income (*27*). At the same time, the primacy of the home in the consciousness of most women makes them potentially valuable as workers in community self-help programmes.

Those who live in substandard housing are mainly the urban poor, whose numbers are rapidly increasing in developing countries and who are exposed to special health risks from the

run-down, overcrowded and ramshackle dwellings they live in. The main categories are those living in:

urban slums, defined as run-down older properties, often in the inner cities, in which the structures themselves, the available living space, furnishings, maintenance and sanitary services are deficient and whose occupants are often inadequately protected tenants; and

shanty-towns and squatter settlements, usually on the fringes of the cities in developing countries, in which the conditions found in the slums are exacerbated by the flimsy, makeshift character of the structures (often little more than huts), the uncertainties of tenure, the absence of any provision for sanitation and other health protection, severe overcrowding and a multitude of hazards to physical and mental health—in effect, a violation of all the principles of healthy housing. (This category also covers refugee settlements that have acquired a permanent character, even though officially regarded as "temporary".)

Rooted in poverty, their environmental hazards aggravated by the malnutrition and illiteracy of those who live in them, these settlements negate the very concept of public health and prove much too much for the resources and energies of the community and the authorities. The problem is often related to economic development—either its failure to provide sufficient and equitably distributed benefits, or its apparent success, which attracts the rural poor into circumstances no better than those they leave and often more hazardous to their health.

Inadequate provision for housing in socioeconomic development schemes exposes these people to overcrowding, filth and physical danger; the sources and vectors of disease are encouraged by the conditions in which they live—drinking and bathing in contaminated water, direct exposure to excreta and to the insects and rodents that breed in rotting refuse and standing water, eating spoiled or undercooked food, and breathing air polluted by the effluents of nearby industry and domestic cooking and heating. Risks to physical health are compounded by the psychological and social effect of being defenceless and vulnerable, of struggling along on the edge of survival.

Displaced and mobile populations may be exposed to these same hazards to an even greater extent. Refugees from war and civil disturbance, those uprooted by large-scale development

projects, and migrant labourers' families are groups of special concern. Many of their health problems may also be found among nomadic populations. The fact that these people usually do not stay long in any one place means that they have no political influence, and have no moral claims on community resources; any services obtainable may not be continuously so. Their transiency may lead to economic and social victimization and the perpetuation of poverty, ill health and lack of education from generation to generation.

The aged, chronically ill, and disabled, whether living in marginal or affluent circumstances, have special needs for health protection, safety, access to services and the means of pursuing as active and rewarding a life as possible. Generally limited in their mobility, these groups have diverse needs that may have to be met through special arrangements for housing, equipment and appliances, care and supervision, employment, protection against physical hazards (fires, crime, natural disasters), and social activities.

PART II

Principles related to health action

Principles 7–11 deal with the ways in which the community can respond to needs connected with the health aspects of housing, and are concerned with:

7. Health advocacy.
8. Economic and social policies.
9. Processes of development, planning, and management.
10. Education in regard to the provision and use of housing.
11. Community cooperation and self-help.

PRINCIPLE No. 7

Health advocacy

Health advocacy, carried out by health authorities and bodies in related fields, should be an integral part of public and private decisions about housing.

If the provision and use of housing are to contribute to better health, health values must be advocated and supporting information provided vigorously and in all relevant quarters. Health advocacy of this kind requires efforts by governmental and nongovernmental bodies in addition to the national health authorities, but the leadership of the health authorities is essential. These considerations are the basis for three sub-principles.

Principle No. 7.1
Role of the health authorities

Improvement of the health aspects of housing requires active leadership and informed advocacy by health authorities at all levels.

In keeping with their mission and commitment to promote improved health in the community, health authorities should be aware and informed of the health aspects of the housing environment, should commit resources to this important area of health intervention, and should be active advocates of preventive and remedial measures to ensure health protection and promotion, whether through governmental decisions or private actions. Health authorities should carry out their advocacy role by participating in policy and planning decisions at all levels of community action; by implementing educational programmes on health and housing hygiene; by monitoring and evaluating needs and responses; and by linking housing programmes with other health programmes, particularly family-oriented primary health care.

To carry out these functions health authorities should have knowledge of the health aspects of the local housing situation.

Staff capable of undertaking technical and support duties in connection with programmes are required, and should be able to provide staff in other health programmes with information on the health implications of housing and the range of feasible interventions, in order to encourage them to make effective interprogramme linkages (*25, 28*).

Principle No. 7.2
Role of related groups

Improved health in relation to housing can be served by mobilizing the energies and talents of all related agencies and groups.

As the resources of health authorities are finite, health advocacy must be enhanced by involving related governmental agencies (planning, interior, sanitary services), community organizations (civic, religious, social), and professional and trade groups (architects, builders, civil engineers); the leadership of political parties may also play a strategic role in efforts to improve housing.

Not only should health leaders be responsive to initiatives from the organizations interested, but steps should be taken to single out potential collaborators and those in a position to affect what is done in regard to housing, to provide them with information, to suggest ways in which they can collaborate, and to maintain the contacts and communications needed to ensure their continuing cooperation. Inasmuch as a great deal of house-building is undertaken by families themselves, important potential collaborators are those who can transmit the health message: schools, the mass media and community leaders.

Principle No. 7.3
Communicating health messages

Health advocacy should work through a multiplicity of channels and media.

To be effective, health advocacy in respect of housing as in respect of other facets of health, has to be ubiquitous—as are the hazards to health and the action needed for improving it. Therefore, information on health problems and the actions needed to maintain and improve health should be communicated

to and through national and local decision-making bodies, planning and development agencies, the ministries in charge of production activities and social services, professional and trade groups, political and civic organizations, teaching agencies (civil and religious), the mass media, community leaders, and especially those health services that come into direct contact with individuals and families. Horizontal and oblique communications are at least as important as formal vertical communication lines, if not more so.

PRINCIPLE No. 8

Economic and social policies

Economic and social policies that affect the state of housing should support the use of land and housing resources to maximize physical, mental and social health.

Key preventive and remedial measures often depend on the major policies of governments and economic organizations. The incorporation of health values in the policies that directly and indirectly affect the housing environment may be of great strategic use in the sense that it may influence the choices of individuals towards alternatives that support health objectives. Such policies may reduce the need for dispersed, intrusive and often expensive remedial efforts. For example, a policy that makes it easier for people to own their homes may be more effective (and much more efficient) than information campaigns to persuade tenants of the advisability of properly maintaining their homes. Particularly relevant to the health aspects of housing are policies—often interrelated—that are concerned with:

- socioeconomic development priorities, which affect the allocation of investments and distribution of income and thereby have an impact on poverty and the extent to which social considerations are incorporated into schemes of economic development;
- priorities of governments (and international agencies) in regard to water supplies, sanitation, the upgrading of housing, health services and support for community initiatives aimed at social development;
- increasing the supply and lowering the cost of components of housing, including sites, the establishment of the basic infrastructure and the provision of easier credit;
- the affordability of measures aimed at improving the quantity and quality of housing, with the government acting as intermediary rather than provider;

- decentralization of the authority to take decisions, allocate resources and levy rates and taxes, so that local problems can be tackled by local initiatives, using standards appropriate to the different settings in the country and recognizing and supporting community grass-roots efforts;
- encouraging the building industry to use local materials;
- giving rights and protection to householders, particularly tenants;
- family planning, which may affect the population density in communities and the health prospects of mothers and children;
- land and housing tenure, which affect accessibility to good housing, people's sense of security and their income and lifestyle, and the efficient use of land and building resources;
- regulation of building and land use, which affect the quantity and quality of dwellings.

PRINCIPLE No. 9

Intersectoral action for development planning and management

Economic and social development, as it affects human shelter, should be based on appropriate processes of planning, the formulation and implementation of public policy and the provision of services, with intersectoral collaboration in:

- **development planning and management;**
- **urban and land-use planning;**
- **housing legislation and standards and their enforcement;**
- **the design and construction of housing;**
- **the provision of community services; and**
- **monitoring and surveillance of the situation.**

If policies are to be effective and socially productive, their formulation and implementation should be governed by suitable processes of planning and management. The processes used in socioeconomic development are of special interest, because some development projects aim directly at housing improvement, while housing issues are inextricably linked with many economic development projects, either because the projects displace communities, require temporary shelter to be provided for project workers, or alter the physical and social environment in the vicinity of established residential areas.

Intersectoral collaboration is essential for the attainment of health goals. Such collaboration is necessary in virtually all the processes listed above, if health and many other potential benefits of development and social well-being are to be realized (*29*). However, the characteristics of housing development make intersectoral collaboration difficult as well as important.

Responsibilities and initiatives in housing are widely distributed, and many nongovernmental agencies are involved. In some countries, no single national body is responsible for housing. Even when such a body is established, however, it can be no more than a focus for efforts to promote the collaboration needed from other ministries. Activities by governmental and nongovernmental agencies may impinge on housing directly (financing agencies, building industry, trades unions, the producers of materials) or indirectly (production ministries, development boards, local government officials, social service agencies). Also, because in most countries it is the people themselves who build, modify and acquire their housing, any agencies able to influence personal or family decisions on housing must collaborate in guiding popular choices towards desirable types of housing and housing use.

Principle No. 9.1
Development planning and management

Incorporation of health and social criteria in the planning and management of economic development can prevent wasteful and dangerous housing being built.

Principle 9.1 is concerned with development activities that are planned by central or local authorities (often the case in developing countries) or where such authorities have the power to permit or forbid private development schemes, which is usual in the industrialized market-economy countries.

In such circumstances, the processes of project design and approval should take into account the way in which each development proposal may affect the health and safety of dwellings and neighbourhoods. Adverse effects may result from a broad range of potential errors: siting industries in places where they intrude in an unpleasant and hazardous way on housing and the surrounding soil and water, routing public transport in ways that disrupt established neighbourhoods instead of linking them, failing to prepare for the movement of labour into the vicinity of newly established workplaces, displacing settlements and their populations, or making inadequate (or no) provisions for the temporary accommodation of families while a development project is being implemented.

In developing countries, the rapid and uncontrolled growth of urban centres produces a pattern and density of housing for

which it is very expensive to supply infrastructure and services. Public housing and squatter settlements are often built on steep hillsides, floodplains, or other unsuitable sites. Official schemes may overlook the dangers of landslides and erosion. Squatters may choose risky sites, because only on such sites do they have a chance of avoiding eviction. Such patchwork patterns of habitation multiply many times the costs of providing piped water, storm drainage, roads and other essential infrastructure and household services.

On the other hand, sound development planning can maximize community benefits, by such means as locating social and health facilities where they can be of use to the greatest numbers or the most needy, encroaching as little as possible on productive agricultural land, restricting damage to forest resources, encouraging the rehabilitation of valuable housing resources and developing the community's capacity for self-help—this implies, of course, obtaining community participation in the planning and decision-making process.

In many development planning situations formal "habitat impact assessments", like environmental impact assessments, may not be technically or politically feasible, but the principle that decisions must take into account the social consequences of economic development may be served by informal and pragmatic means.

For this to happen, health and social interests have to be represented when development decisions are made, either directly through health authorities or indirectly through the health awareness, knowledge and sympathy of development planners and decision-makers. Moreover, since official and community participants need good information on the health implications of alternative decisions, health representatives, supported by the necessary information resources, can play an active advisory role.

Principle No. 9.2
Urban and land-use planning

Taking social information and values into account in urban and land-use planning helps to ensure that housing will promote better health.

Taking health and social considerations into account should temper the usual dominance of physical and economic criteria in

planning decisions on land use in urban and other areas, as well as in decisions on siting structures and transport facilities in cities. Claims to use available land, perhaps unutilized or not properly utilized, to meet housing needs may have to be recognized and given competitive status with commercial and industrial development claims.

The capacity of the urban environment to meet human needs for water, sanitation, clean air and transport should be taken into account in decisions about residential development, industrial siting and transport. To obtain the information required, research and pilot projects may be needed to find solutions that best fit local conditions.

Principle No. 9.3
Housing legislation, standards and enforcement

Health requirements should be incorporated into legislation and standards that establish norms for the construction, maintenance and use of dwellings and their surroundings. Such norms should be clear, consistent and supportive of affordable, incrementally remedial housing provisions and made effective through adequate technical support services.

Various legal instruments are used to establish norms for that part of the housing economy that is subject to government supervision and regulation; in addition, guidelines and recommendations on good practice may be used to reinforce the norms and extend their influence to unregulated dwellings. Apart from housing codes, which lay down the requirements for decent human habitations, housing norms are embodied in building codes, plumbing codes, sanitary codes, nuisance laws, land-use zoning regulations, electrical codes, and statutes pertaining to owner–tenant relationships. It is important that health norms be incorporated in all such legal instruments to ensure that all those involved in providing and maintaining housing are aware of health issues and how they are to be resolved, are directed to keep to the norms, and are held accountable for their observance. Further, these normative statements should be consistent and up-to-date; to ensure this will require some investment of resources, particularly in the training and assignment of competent personnel.

The criterion of consistency should be used in ways that support rather than hamper the prospects for housing improvements. Impractical norms can neither be enforced nor complied with,

and no single set of norms is applicable to all countries, or to all dwellings in the same country. Setting inflexible norms that are unrealistically demanding may result in nothing being done; impractical standards discriminate most heavily against the poor, who have the greatest need.

If standards are not to be obstacles to action, they should aim at incremental improvement. The standards in force should reconcile abstract ideas of what is proper and ultimately desirable with what can realistically be done at the moment to improve the health, safety, and comfort of a settlement or neighbourhood, bearing in mind the economic situation, environment and cultural practices of the community concerned. This calls for either local norm-setting or the formulation of a broad range of classified norms — not a single national standard, nor the enforcement of standards that may be obsolete or irrelevant to present conditions. It further suggests that, especially in developing countries, the setting of legal and advisory norms should be approached as a task to be performed progressively, not "once and for all", with standards rising as economic and social development increases the feasibility of achieving improvements in housing.

In the process, the implementation of standards at any stage needs to be supported with technical assistance, advice and guidance on how housing can be made more healthy at minimum cost.

Principle No. 9.4
Design and construction of housing

Norms for housing design and construction technology should embody appropriate means of ensuring safety and promoting health.

The improvement of health and safety features in dwellings may also be fostered by persuading those who design and construct housing to incorporate such features in plans, the selection of materials, and building techniques. In the case of some housing in urban and suburban areas, this approach means informing and influencing architects and professional builders; in the case of other urban housing and virtually all rural housing, those to be reached are the householders themselves. Spreading knowledge of design and construction norms is a function of education (Principle 10).

As is the case with housing standards, no universal norms for design, materials and construction exist, nor should they. Differences in climate, the availability of materials, cultural preferences and practices, and financial capacities mean that different standards, specific to each country, must be set. Housing conditions and possibilities need to be assessed so that norms can be established that fit the situation—or could be made to fit the situation when coupled with new ways of supplying low-cost materials not previously available to most people, but which meet requirements for health and comfortable shelter.

In deciding upon norms, the concept of "ecocultural regions" may be useful. Groups of people within a particular country or straddling national boundaries have traditional social responses to their environments that are intimately connected with the ecology of the region and this means that their preferences must be ascertained through consultation with them.

Principle No. 9.5
Provision of community services

Sanitary and related health services should be organized in the community.

Community-based services should be organized to support the sanitary use of housing, particularly for the disposal of excreta and solid wastes, the supply of clean water and the drainage of stagnant waters. In urban areas, "community-based" has the connotation that the services provided will be financed by taxes or the payment of fees. In rural communities, it may connote organizing cooperative efforts by the residents and determination of what is expected from each householder. In the latter case, it is incumbent on local leaders to initiate processes of education and consensus-building to mobilize self-help efforts—one requirement for which is a heightened awareness of the health benefits resulting from improved sanitation in dwellings and in the community.

Principle No. 9.6
Monitoring and surveillance

Attainment of housing improvement goals requires active monitoring and surveillance.

Health improvements related to housing, like other health improvements, depend to a large extent on the quantity and quality of information that can be obtained and applied in decisions about policies, norms, intervention strategies and services. Just as health authorities need information about health status, disease incidence and prevalence, the availability and utilization of services, and sources of environmental pollution, those working to ensure housing hygiene require up-to-date information on housing conditions and practices. Such information must be collected, processed, analysed and put to good use.

In considering what information may need to be collected, health leaders should not overlook existing sources of information in other agencies (housing, census, agricultural extension), nor the possibilities of linking data collection on housing with existing health services that are in contact with people in their homes (primary health care and other outreach programmes, sanitary inspections). As in the case of all management information systems, the development of a monitoring and surveillance system for housing hygiene requires planning and design to determine what information is needed and for what purposes in policy formulation, programming and decisions about the provision of services.

PRINCIPLE No. 10

Education on healthy housing

Education — public and professional — should actively foster the provision and use of housing to promote health.

Because the construction and use of housing are inseparable from people's choices and behaviour, education is a key tool in bringing about improved health in the home. The targets of educational efforts are multiple:

Householders are the largest group to be educated and, because families often build their own dwellings and, by definition, are the users of housing, they are the most important target for education. The educational objective should be to increase their understanding of what is needed in the home to foster the health of the family (so far as their resources permit) and the personal and domestic practices of hygiene, maintenance, hazard reduction and accident prevention that enable people to promote their health and well-being.

Architects, builders, and the manufacturers and suppliers of materials require education in design and construction factors that promote health and reduce hazards. Health information should be integrated into professional and technical education curricula for those entering this work, and current practitioners should be reached through continuing education, in which professional and trade associations can be effective collaborators.

Health workers, ranging from community-based physicians engineers and sanitarians to primary health care auxiliaries, should be educated to understand the health hazards of housing and to integrate educational and other remedial measures into their health service work. Workers in other sectors, such as those in agricultural extension, rural development and social work, who are in a position to influence and assist in household efforts towards economic and social improvement, are a further target for education.

Policy leaders, development planners and managers, and local officials should be helped to understand the health implications of housing, as it impinges in various ways on their responsibilities and the decisions they are in a position to make that will affect health outcomes.

Mounting these educational efforts will be an extensive enterprise, for it requires the establishment of a body of knowledge that is relevant to national and local conditions and goals, the development of educational materials and messages that are each relevant to these various targets, the selection and utilization of channels to carry the educational message, and the training of teachers and trainers. Effective health education requires competent leaders, able to train others to transmit the various messages to these diverse audiences. For, in addition to formal education, the effort requires the use of community networks and the mass media, both for direct educational purposes and to create a climate of opinion favourable to health objectives.

PRINCIPLE No. 11

Community cooperation and self-help

In dealing with the needs and problems of the human habitat, community involvement at all levels should support the processes of self-help, help between neighbours, and communal cooperative activities.

While education is necessary to provide the cognitive basis for householders to take action to improve housing conditions, it may not be sufficient to induce the action itself—particularly if efforts in regard to water supply, waste disposal and neighbourhood improvement require cooperation among families. Support from within and outside the local community may be needed to convert knowledge into positive attitudes and effective action.

Women are not only primary victims of inadequate housing, but also potentially powerful agents for positive change. As the bearers and rearers of children, the keepers of the domestic environment, the haulers of water from distant sources and the nurses of the sick, women have the most at stake in improving inadequate housing. In many cultures, women are the most active and effective mobilizers and organizers of people in formulating demands for improved health services and living conditions and taking the practical steps involved.

The strongest support for improved housing conditions comes from the community itself, from organized activities that are integrated into the life of its people. The support may range from collective ideals and attitudes, community-based service programmes, physical cooperation between neighbours and communal resource development. How such activities can be initiated differs considerably in different social groups in a particular country, and in different countries. Sometimes people need only a clear opportunity to participate; in other situations, groups need reassurance and encouragement to voice their needs and state what help they want; in still others, cooperation

has to be encouraged through sponsored and well-thought-out efforts by community organizations. Whatever means may be required to bring about cooperation, most efforts will be more effective if information is available that increases awareness of the possibilities and crystallizes opinion, as a necessary basis for local cooperation in formulating ideas and proposals, devising ways of implementing them and sharing costs in money or contributed goods and labour.

Where external assistance in developing these capabilities is needed, it should be linked with other community self-help efforts, such as primary health care, rural development and neighbourhood organization in urban and periurban areas. The potential of all such efforts is strongly enhanced by the fact that their essential objective is to help people improve their own conditions in direct and tangible ways.

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Annex 1
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