

IMPROVING RURAL SHELTER IN DEVELOPING COUNTRIES

United Nations Centre for Human Settlements (Habitat)

Nairobi, 1995

HS/385/95E

ISBN 92-1-131297-3

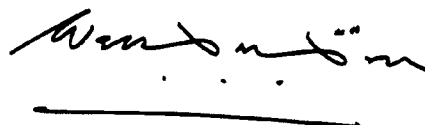
Foreword

The Global Strategy for Shelter to the Year 2000 (GSS) was launched in 1988 as a guiding framework for national shelter policy formulation. Despite considerable progress since then, many countries still do not have explicit policies on rural shelter. Many national shelter policies cover urban shelter only and it is assumed that there are no significant rural shelter problems and that rural inhabitants will, in one way or another, manage to provide their own shelter without assistance from government or other formal institutions. Yet the large majority of the rural inhabitants of developing countries live in inadequate shelter - inadequate in terms of security of tenure, quantity of shelter and its physical quality. This phenomenon is itself a manifestation of the more general problem of rural poverty. Researchers have also tended to neglect the problem of rural shelter, and there is at present little published material which policy-makers can consult for guidance. In spite of this, there have been several innovative and interesting rural shelter improvement projects in different parts of the developing world from which some basic lessons can be learnt.

This publication aims at beginning to fill the above policy vacuum: firstly, by developing a conceptual framework for rural shelter policy which takes into account several issues which are currently important in development, namely, poverty reduction, the enabling approach and sustainable development; secondly, by analysing some successful rural shelter improvement projects and programmes in order to isolate both positive and negative lessons; and thirdly, by presenting general guidelines for the formulation of national rural shelter policies in developing countries, within the framework of the Global Strategy for

Shelter to the Year 2000. The publication is also in response to one of the themes of the Second United Nations Conference on Human Settlements (Habitat II)(Istanbul, June 1996), "Adequate Shelter for All". It is my hope that, in the long-term, this publication will contribute to general improvement of the quality of life of rural inhabitants in developing countries.

Earlier drafts of this publication were discussed at the 1992 and 1993 meetings of the United Nations Administrative Committee on Coordination (ACC) Task Force on Rural Development (now the ACC Subcommittee on Rural Development). Mr. Josephat Makundi supplemented these earlier drafts by providing case studies on successful methods of financing rural shelter development projects in developing countries. On behalf of UNCHS (Habitat), I wish to acknowledge the contributions of both the ACC Subcommittee on Rural Development and Mr. Makundi. Finally, I wish to acknowledge the contribution of Mr. Naison Mutizwa-Mangiza (UNCHS staff member), who coordinated the production of all the above inputs and prepared the publication.



Dr. Wally N'Dow
Assistant Secretary-General,
UNCHS (Habitat) and
Secretary-General,
Second United Nations Conference on
Human Settlements (Habitat II)

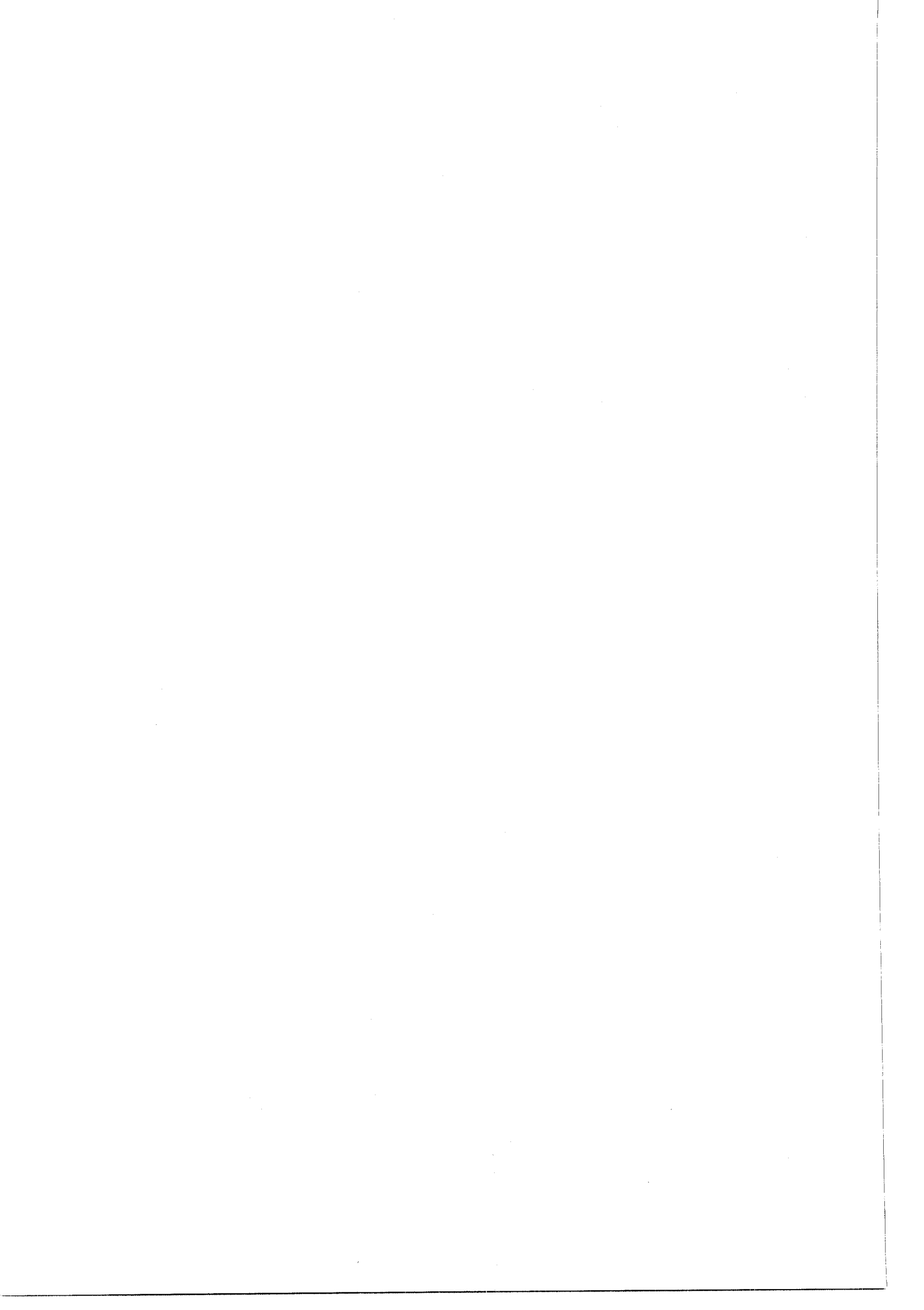


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1. Introduction

One of the most visible ways in which rural poverty is manifested is poor shelter, yet very few developing countries have explicit and coherent rural shelter policies. The principal reason for this is the fact that the majority of rural inhabitants in developing countries are able to provide their own shelter, largely within the context of subsistence economies, even though such shelter may be of poor quality. In addition, shelter has traditionally been considered from the consumption rather than from the production perspective. For these reasons, shelter development has generally been relegated to the bottom end of rural development priorities.

While most rural inhabitants within developing countries have low-household incomes and use simple technology and materials in shelter construction, they have, over the years, evolved forms of shelter that are well suited to their natural environments, both in terms of the materials used and adequacy of protection from the elements. A number of problems persist, however. These include:

- (a) the widespread absence of safe water supplies and sanitation facilities;
- (b) the inability to increase the size of homes as individual households grow, resulting in overcrowding;
- (c) in some situations, the inability to separate the accommodations of domestic animals from those of human beings;
- (d) the prevalence of a number of deficient features of housing structures, including leaking roofs, unstable walls and poor floors, all requiring frequent repairs and prematurely becoming structurally dangerous; and

(e) related to (d) above, the inability to construct houses robust enough to withstand the vagaries of nature, including floods, cyclone winds, earthslips and earthquakes.

As far back as 1974, the United Nations' Department of Economic and Social Affairs highlighted the policy vacuum characterizing rural housing, as well as the gap between policy and implementation in the few countries where rural housing policies existed (United Nations, 1974, pp.10-11). In many countries, government housing departments tend to concentrate on urban housing, partly in response to the politically more organized pressure from the urban populace. Where rural housing has been included in development plans, the institutions and finance necessary for rural housing policy implementation are very often not created or provided.

The geographical dispersal of rural communities in many countries often means the absence of scale economies, resulting in higher costs per housing unit. The existence of customary or cognatic land-tenure systems in many countries means that individuals have only use rights to their land, resulting in their inability to use the land holdings as collateral. In other countries, particularly in Asia and Latin America, many rural inhabitants are landless and, in these situations, rural shelter programmes can only be implemented within the overall context of agrarian reform. In addition, information on rural housing and financing needs is often lacking, partly as a result of inadequate means of communication, including roads, railways, public transport and telecommunication services. These and other factors have generally kept housing finance institutions away from rural areas.

Table 1: Global trends in population distribution between rural and urban areas (1970-2010)

Continent	Date	Total population (per thousand)	Urban Percentage	Rural Percentage
Africa	1970	364206	23.0	77.0
	1980	475664	27.3	72.7
	1990	632669	31.8	68.2
	1995	728074	34.4	65.6
	2000	831596	37.3	62.7
	2010	1069378	43.8	56.2
Asia	1970	2147491	23.4	76.6
	1980	2642110	26.7	73.3
	1990	3186446	31.8	68.2
	1995	3457957	34.6	65.4
	2000	3735846	37.7	62.3
	2010	4263948	44.3	55.7
Europe	1970	656441	64.4	35.6
	1980	692995	69.2	30.8
	1990	721734	72.0	28.0
	1995	726999	73.6	26.4
	2000	729803	75.1	24.9
	2010	728741	78.4	21.6
N. America	1970	226480	73.8	26.2
	1980	252461	73.9	26.1
	1990	277838	75.4	24.6
	1995	292841	76.3	26.4
	2000	306280	77.4	22.6
	2010	331571	80.3	19.7
Latin America	1970	283214	57.4	42.6
	1980	358437	65.1	34.9
	1990	439716	71.5	28.5
	1995	482005	74.2	25.8
	2000	523875	76.6	23.4
	2010	603843	80.5	19.5
Oceania	1970	19310	70.8	29.2
	1980	22685	71.2	28.8
	1990	26428	70.6	29.4
	1995	28549	70.3	29.7
	2000	30651	70.2	29.8
	2010	34814	71.1	28.9
Less Developed Regions	1970	2694524	25.1	74.9
	1980	3364395	29.2	70.8
	1990	4141474	34.7	65.3
	1995	4549809	37.6	62.4
	2000	4972494	40.7	59.3
	2010	5819403	47.2	52.8
More Developed Regions	1970	1002607	67.5	32.5
	1980	1079945	71.3	28.7
	1990	1143358	73.6	26.4
	1995	1166598	74.9	25.1
	2000	1185536	76.3	23.7
	2010	1212865	79.3	20.7
World	1970	3697131	36.6	63.4
	1980	4444340	39.4	60.6
	1990	5284832	43.1	56.9
	1995	5716407	45.2	54.8
	2000	6158030	47.5	52.5
	2010	7032268	52.7	47.3

Source: Compiled from UNCHS (Habitat), (1995) Human Settlements Statistical Database 4.0, Nairobi, Tables 1-1 and 1-3.

In some countries where rural shelter programmes have been implemented, they have often been based on approaches and methods used within towns and cities and have failed to take account of the special socio-economic circumstances and needs of rural areas. The incomes of rural households generally tend to be lower than those of urban households, and also to be very unevenly distributed through the year. Loan criteria have also been too rigid and unsuitable for rural areas.

In spite of the above, recent studies have demonstrated that the construction sector, of which a large component is shelter, can play an important role in stimulating and sustaining economic growth, in creating employment in both urban and rural areas and in significantly improving the health of rural inhabitants (Strassman, 1970 and 1985; UNCHS and ILO, 1995; UNCHS forthcoming - 1996).

Given this situation, the aims of this publication are:

(a) to offer some guidance on the conceptual ideas which should provide a framework for rural shelter improvement policies, particularly the following: the relationship between rural poverty and shelter, including the contribution of shelter improvement to rural poverty reduction; and the role of the enabling and sustainable development approaches to rural shelter improvement; and

(b) on the basis of the above ideas, and of a number of case studies, to offer some

suggestions on how to put together the key components of national rural shelter policies.

In broader terms, the main purpose of the publication is to stimulate action on rural shelter improvement in developing countries.

Section 2 outlines the characteristics of rural poverty in developing countries, examines the role of shelter improvement in rural poverty reduction, and outlines the basic issues involved in the implementation of rural shelter improvement programmes and projects in the context of the enabling and the sustainable development approaches. Section 3 presents some case studies illustrating some of the issues raised in Section 2 and possible approaches to the formulation and implementation of rural shelter programmes. Section 4 contains a step-by-step outline of the main issues which should be considered in the formulation of national rural shelter policies, while Section 5 presents some concluding observations.

Before proceeding, it should be noted that rural areas currently accommodate the majority of the population of developing countries, and will continue to do so well beyond 2005 - the year in which the proportion of the world's total population residing in urban areas is expected to exceed 50 percent. Table 1 shows trends in the distribution of the world's population between rural and urban areas from 1970 to 2010. As shown in the table, Africa and Asia are at present predominantly rural, and will remain so beyond the year 2010, while Latin America and Oceania have already exceeded the 70 per cent urbanization level mark.

2. Rural poverty, sustainable development, the enabling approach and rural shelter improvement

2.1 The nature of rural poverty

Poverty, in the material sense, is a multidimensional phenomenon. It is, fundamentally, a reflection of lack of assets and low-income levels, manifested in low levels of consumption of basic goods and services. Rural poverty means material deprivation in respect of basic human needs, the most important being: food, water, clothing, shelter, health and education. Poverty implies the existence of human needs which are not met. The lack of assets, as compared to low income, is very often the more fundamental cause of poverty. Assets include financial savings and physical resources such as land and equipment. When their assets are too small, households are often unable to meet basic physical needs such as food, housing, water and sanitation.

It is also important to make a distinction between two aspects of poverty, namely, deprivation and vulnerability. Deprivation refers to the lack of basic goods and services normally available within a given community or society, including food, housing and clothing. Deprivation also refers to other dimensions such as powerlessness and isolation, which prevent deprived persons from breaking the vicious cycles of poverty in which they are locked. Vulnerability implies high exposure to shocks and extreme events. These could be physiological (sudden illness), economic (sudden increase in the prices of basic commodities) or natural environmental (such as earthquakes or floods). For a household with inadequate assets, a sudden and serious illness of the breadwinner, a flood, or an earthquake can mean disaster.

The general causes of rural poverty in developing countries have been well-documented. Many of them relate to agriculture, as agricultural production is the main source of income for the majority of rural inhabitants. The principal ones include:

- landlessness (land being by far the most important asset for rural households), resulting from either an absolute shortage in comparison to total population, or from inequitable systems of tenure;
- excessive land fragmentation, leading to inefficient production by large numbers of households on small plots;
- skewed tenure and exploitative share-cropping contracts, resulting in very low incomes;
- declining agricultural prices, partly resulting from unfavourable rural-urban as well as international terms of trade;
- rising cost of agricultural inputs;
- low wages and levels of employment;
- insecurity of income, partly resulting from lack of diversification of income sources;
- debt bondage, an outcome of exorbitant interest rates imposed by informal money lenders and the absence of formal sources of credit accessible to the poor; and
- weak market power (ILO, 1985, pp.5-6).

Table 2: Rural population below the poverty line in 114 developing countries

	Population		Rural population as per cent of total population	Rural population below poverty line	
	Total (millions)	Rural (millions)		Millions	As per cent of rural population
Asia	2,713	2,019	74	633	31
Asia (excluding China and India)	812	567	70	262	46
Sub-Saharan Africa	462	337	73	204	60
Near East and North Africa	208	106	51	27	26
Latin America and the Caribbean	425	123	29	76	61
Total 114 countries	3,809	2,584	68	939	36
Least developed countries	461	368	80	253	69

Source: The State of World Rural Poverty, Table 1.1

Table 3: Global trends in access to water and sanitation, 1980-1990: percentage (average) of rural population with access

Country category	Water		Sanitation	
	1980	1990	1980	1990
Low-income	23.65	42.14	16.57	24.76
Lower-middle-income	36.62	54.90	26.24	56.25
Upper-middle-income	55.10	70.79	57.13	71.17
High-income	-(*)	97.62	-(*)	95.26

(*) 1980 figures for high-income countries not available

Source: Calculated from figures in Table A.2, World Bank, 1994b, pp. 146-148.

In Africa, O'Connor (1991) has identified a number of additional and latent causes of poverty, while Iliffe (1987) has traced the historical roots of poverty. Among the most significant causes of rural poverty is the periodic occurrence of drought, as exemplified by the widespread droughts of the mid-1980s which brought untold misery and suffering to millions of vulnerable people in the Sahel, and other African subregions.

Another important cause of poverty is political instability and civil strife, including secessionist and irredentist armed conflicts which have occurred in a number of African states, particularly during the last two decades. In these countries, armed conflict has resulted in serious disruption of agricultural production and massive displacement of large numbers of people, significantly increasing the numbers of refugees and internally displaced persons. Where armed conflict has coincided with drought, the resulting famines have been particularly catastrophic.

Other important underlying causes of poverty include rapid population growth, in the face of stagnating or declining food production and earnings from agriculture, and also in the face of worsening pressure on land. Physical degradation of land is another cause, itself being partly a result of population increase.

While poverty, particularly as experienced in the extreme cases of famine, may affect large rural areas, in the final analysis, it "... is .. experienced by families and individuals, rather than by countries, or even regions. It is individual people who may die of starvation, not entire nations.." (O'Connor 1991, p.3). In any given community, it is those lacking in income and assets who will die from starvation during drought years. In years of plenty, lack of access, as a determinant of poverty, may be more important than availability of goods and

services. Thus pockets of rural poverty may continue to exist even in situations of general national rural prosperity.

According to Iliffe (1987), among the people most at risk, or the most vulnerable, are the physically infirm, particularly those afflicted by blindness, leprosy and other physical deformities. There are also other segments of the community at risk, including the old, the young and women, particularly widows and single heads of households (Chambers, 1983). As Chambers emphasizes, the poor are generally powerless and geographically far from, or invisible to, centres of decision-making.

To sum up, rural poverty is perpetuated through the following general processes:

- (a) changes resulting in inequitable access to productive assets, particularly land;
- (b) low employment levels and labour processes which are unfavourable to workers;
- (c) unfavourable terms of trade at both the national rural-urban and international levels;
- (d) political instability and inappropriate state policies; and
- (e) natural disasters, such as droughts.

Table 2 shows the scale and nature of rural poverty in the developing world, i.e. Africa, Asia and Latin America and the Caribbean. The proportion of the rural population below the poverty line ranges from 26 per cent in the Near-East and North Africa to 60 per cent for sub-Saharan Africa. For the group classified as 'least developed countries' the proportion rises to 69 per cent.

With specific reference to shelter as a dimension of poverty, global figures on shelter deficiencies are not available, but Table 3 shows the proportions of the rural population with access to safe water supplies and sanitation in different parts of the developing world. As these two infrastructure components are the most important in terms of direct linkage to quality of shelter, the figures in the table provide a reliable approximation of the level of 'rural shelter poverty'.

2.2 The role of shelter in rural poverty reduction

Most rural poverty reduction endeavours have been concerned with the satisfaction of basic needs and the creation of increased employment opportunities, including non-agricultural employment. While the role of shelter in rural poverty reduction has so far not been emphasized, it is clear that rural shelter programmes and projects can contribute to the reduction of poverty in a number of ways. In this context, the term 'shelter' encompasses the following components: a sheltered space for living, working and production-related functions; physical infrastructure, including water and sanitation; and access to basic health, educational and other essential services.

As pointed out above, poverty is the state of material deprivation in respect of a number of basic needs, including shelter. Thus, provision, or improvement, of rural shelter contributes to qualitative and quantitative improvements in one major dimension of rural poverty.

It is well known that shelter improvement also results in the improvement of health, an important dimension of poverty in rural areas. Primary health care improvements must necessarily include improvements in some

aspects of shelter, particularly water and sanitation facilities.

It should be emphasized that shelter provides the physical context or location of a wide variety of income-generation activities, including agriculture and cottage industry. Consequently, shelter improvement constitutes one of the essential preconditions for rural income-generation activities.

In the rural context, shelter must be taken to include grain storage facilities, which are normally part of the rural homestead. In many countries in Africa, annual post-harvest losses of grain resulting from poor storage facilities are as high as 10 to 20 per cent (O'Connor, 1991, p.86). Thus shelter improvement, including that of grain storage facilities, can significantly contribute to the reduction of rural food shortages.

In the context of local survival strategies employed by the rural poor, construction and the production of building materials are already playing a role in poverty reduction. Helmsing (1991a) has assembled data from studies by the World Bank (1978) and by Chuta and Liedholm (1979) which indicate the quantitative significance of construction activities in rural non-agricultural employment in a number of countries. Construction accounted for 14 per cent of rural non-farm employment in India, 12 per cent in Zambia and 2 per cent in Sierra Leone. A recent survey in Zimbabwe has indicated that construction accounts for 8 per cent of all rural non-agricultural enterprises (Helmsing, 1991b, p.263), while another survey conducted a few years earlier indicated that 15 per cent of all communal area (former 'tribal trust lands') households were involved in non-agricultural enterprises (Helmsing, 1991b, p.258). The individuals or families

involved supplement their agricultural earnings through the production of building materials for sale, construction of houses, latrines, schools and health facilities (usually on a labour-only basis) and sinking of water wells and bore holes. Thus, on the basis of already existing patterns of rural construction, shelter provision programmes and projects can be used, specifically, for generating additional non-agricultural employment, thus reducing rural poverty.

For the majority of rural inhabitants, improved shelter, in the absence of official assistance programmes, is an end result of improved income from other production activities, particularly agriculture. This 'natural sequence of rural improvement' can be deliberately harnessed within projects and programmes specifically aimed at shelter improvement. This can be achieved through the formulation of projects which, in addition to the shelter component, include the simultaneous implementation of income-generating enterprises in areas such as poultry and vegetable gardens, as well as improvements in rural communication and marketing facilities. These non-shelter activities can improve the capacity of shelter project beneficiaries to service housing loans, to afford the costs of maintenance and repairs and, in time, to undertake further shelter improvements. The deliberate implementation of shelter projects within the context of wider programmes aimed at increasing the income generation capacity of beneficiaries is the only way in which sustainable rural shelter improvement can be guaranteed. This broader approach to shelter improvement can significantly contribute to general rural poverty reduction. It also provides a strong rationale for collaboration among both national and international agencies concerned with shelter, on the one hand, and those

concerned with rural production activities, on the other.

Most poverty reduction projects and programmes are generally conceived in the context of 'development from below', or 'bottom-up' approaches. As outlined by Stohr (1981, pp.43-47), 'development from below', in the rural-regional context, aims at:

... the full development of a region's natural resources and human skills..., initially for the satisfaction in equal measure of the basic needs of all strata of the regional or national population, and subsequently for development objectives beyond this..

The policy implications of this are that:

... policy emphasis will... need to be oriented towards: territorially organized basic-needs services; rural and village development; labour intensive activities; small and medium-sized projects; technology permitting the full employment of regional human, natural and institutional resources on a territorially integrated basis.

In the words of Seers (1977, quoted in Stohr, 1981, p.47), a self-reliant, basic needs approach to rural-regional development also entails "...reducing dependence on imported necessities, especially basic foods, petroleum and its products, capital equipment and expertise..."

In the national development context, shelter improvement has a number of advantages which makes it a potentially useful component of a basic needs- or poverty reduction-based rural development strategy. Firstly, shelter constitutes one of the most important basic needs of any nation. Secondly, compared with other economic sectors, the construction sector (which includes shelter) has relatively high

multiplier effects and can therefore be used as a basis for sustained domestic economic growth (Field and Ofori, 1988). The backward linkages of the construction sector can, in particular, have a significant impact on economic production and employment, as most of the required processed and semi-processed inputs can be provided by labour-intensive domestic suppliers and basic industries such as cement and steel. Thirdly, in addition to the general fact that construction is relatively labour intensive, a variety of appropriate, labour-intensive, technologies for the production of building materials, house construction and provision of water and sanitation are already available. Fourthly, relatively few imported inputs are required for shelter production, particularly for the low-income communities who constitute the majority of rural inhabitants in developing countries. Fifthly, housing (the end product) is not an internationally tradeable good and its linkages with, and therefore dependence on, international markets are minimal. For these reasons, the manufacturing of building materials and construction of low-cost housing and settlement infrastructure along the principles of sustainable, self-reliant development is quite promising (UNCHS, 1995).

2.3 The enabling approach to rural shelter improvement

The 'enabling approach' to human settlements development and management emerged during the course of the last decade (UNCHS, 1987a, 1988a, 1988b). As is well known, this approach is also currently at the forefront of general development discourse.

In recognition of the limited impact of government-implemented shelter strategies and programmes, the enabling approach is based on the reorientation of the role of the

public sector in human settlements development. The approach requires, on the part of national governments, three changes:

- (a) broadening of the range of actors involved in human settlements development and management;
- (b) deepening degrees of responsiveness and participation (including the 'empowerment' of local communities); and
- (c) more effective coordination of the different actors involved.

The private sector, non-governmental organizations (NGOs) and community-based organizations (CBOs) are expected to assume greater financing and implementation responsibilities, with the public sector providing minimum assistance and, more important, facilitating policy frameworks. Kimm (1987, p.74) expresses clearly what the role of government ought to be:

... the appropriate government response is to act as a facilitator and solve those problems that the *individuals cannot solve themselves*. We see these problems as falling into three categories: the availability of land with secure tenure, the provision of infrastructure and the availability of credit.

With regard to rural shelter development, security of land tenure is a critical factor. Rural shelter programmes cannot be effective where the majority of the poor are either landless or have insecure tenure. Thus the fate of rural shelter development is closely tied with progress in land reform, and the latter process is very clearly a government responsibility.

Because of the private sector's lack of interest in lending for rural shelter, availability of credit is normally a responsibility of

government. However, non-governmental and community-based organizations, as well as individuals, can also play a very important role in mobilizing financial resources from within the participating communities.

In the rural context, infrastructure provision is normally at the top of the list of shelter priorities and generally involves the participation of all the actors identified above. Government may take responsibility for roads, piped water and water-borne sanitation, particularly in rural service centres or small rural towns. Individuals and other non-governmental actors may take responsibility for the provision of appropriate technology-based water and sanitation facilities, such as ventilated improved pit latrines and protected water wells.

In developing countries, indigenous building material production and house construction skills are generally available in most rural communities. For this reason, partly, house construction can be successfully implemented through self-help. The contributions which government and NGOs can most effectively make include improvement of the quality of indigenous building materials and techniques, and upgrading of the skills of local builders. These interventions can be used as the main instruments for stimulating the establishment of non-farm income-generating enterprises, principally small-scale production of building materials and construction enterprises.

2.4 The sustainable development approach to rural shelter improvement

'Sustainable development', as it is generally understood, entails the sound use and management of environmental resources in the process of development implementation (UNCHS, 1990b, 1991a). Before elaborating

on this, it is important to briefly outline the nature of the general environmental problems which the 'sustainable development' approach seeks to address.

The environment, which encompasses the natural elements of land, water and air, as well as the physical and biological elements within them, plays three vital roles in development. Firstly, it provides material and energy inputs for the development process. Secondly, it absorbs, or assimilates the waste by-products resulting from the development process. Thirdly, the environment provides a number of useful services supportive of human welfare, such as recreational, scientific and aesthetic functions (Barbier, 1989, p.431).

Exploitation of the natural environment for development, particularly since the industrial revolution, has resulted in three types of problems. The first one is the depletion, or exhaustion, of non-renewable resources, such as fossil fuels. This problem has, for quite some time, been an important issue in conventional environmental economics. The second type of problem, which is now increasingly recognized, is deterioration in the physical quality of the environment, including deforestation (and the consequent global warming effects), degradation and impoverishment of soils, and pollution of the atmospheric and aquatic environments. The third type of problem is an outcome of the first two, namely, impoverishment of human welfare, in a variety of ways, including poor health, caused by pollution and food deficiencies.

In the context of the above problems, sustainable development has been defined by Goodland and Ledec (1986, quoted in Barbier, 1989, p.442) as:

... a pattern of social and structural economic transformations (i.e.

development) which optimizes the economic and other societal benefits available in the present without jeopardizing the likely potential for similar benefits in the future.

Thus sustainable development is a comprehensive approach to development which aims at improving the quality of life (human welfare) without 'biting the hand which feeds that process'. In Barbier's words (1989, p.442):

... one can clearly consider as sustainable development any economic activity that raises social welfare with the maximum amount of resource conservation and the minimum amount of environmental degradation allowable within given economic, social and technical constraints.

Thus, in the context of this environment-based definition, the 'sustainable development' approach to rural shelter development emphasizes the use of locally available renewable resources in ways which will enable their successful regeneration. There are four sustainable development criteria on whose basis any given settlement can be judged:

- (a) The quality of life it offers to its inhabitants;
- (b) The scale of non-renewable resource use (including the extent to which secondary resources are drawn from settlement by-products for re-use);
- (c) The scale and nature of renewable resource use and the implications for sustaining production levels of renewable resources;
- (d) The scale and nature of non-reusable wastes generated by production and

consumption activities and the means by which these are disposed of, including the extent to which wastes impact on human health, natural systems and amenity (UNCHS, 1991a, p.4).

From a socio-economic point of view, 'sustainable development' should also focus attention on the factors which contribute to the successful continuation of development activities, once begun, without long-term dependence on outside help. With respect to human settlements development, including rural shelter, these factors include: institutional capacity (in planning, finance and management); type of technology; affordability; and social acceptability.

One of the most serious problems which has impeded the implementation of lasting solutions to shelter problems in developing countries has been institutional weakness. In many countries, both central and local governments lack the capacity to plan, finance and administer large shelter programmes on a sustained basis. In the case of rural shelter, many countries do not even have coherent policies. Where shelter projects have been implemented with help from donors, sometimes special implementation units have been created specifically for the implementation of the projects in question, resulting in the 'by-passing of local institutions' (Honadle and Rosengard, 1983; Rondinelli, 1983; Morgan, 1983; Therkildsen, 1988; UNCHS, 1991e). Where by-passing has occurred in the implementation of a given project, the end result is that the project is not replicable after the departure of donors because of the failure to build, or strengthen, the institutional capacity of the relevant local agencies. The shelter finance mobilization capacity of many governments has also been hampered by the absence of effective cost recovery measures, which has, in turn,

hindered the replicability and sustainability of shelter projects for the poor.

For shelter projects to be sustainable, the technology employed must be appropriate. Technology must be appropriate in four respects: firstly, it should provide an adequate level of safety from physical environmental hazards, particularly in areas prone to earthquakes, floods and other natural disasters; secondly, it should be locally available; thirdly, it should be affordable; and, fourthly, it should enable the maintenance of facilities using predominantly local resources. These factors will greatly determine the extent to which a given shelter development strategy, or approach, is replicable and sustainable.

Apart from the institutional mobilization of finance, there is also the issue of the extent to which low-income rural households are able to afford the solutions offered within shelter projects and programmes. A major problem with low-income shelter projects in developing countries (particularly within urban areas) has been that the solutions offered have, for a variety of reasons, ended up being beyond the reach of the low-income people originally meant to benefit from them. Cheaper and more affordable solutions may require the acceptance of minimum standards for housing, water and sanitation.

The social acceptability of shelter projects is also an important determinant of their sustainability. Both the technology employed and the end-product must satisfy the aspirations of the people. In Dudley's words (1987, p.4):

Much of the work on 'appropriate technologies' over the last twenty years, after much technical research and ingenuity, has failed. People haven't wanted the product. In practice, the only sustainable development process is based on people's *desires*. A project which ignores these desires is doomed to failure, however much it seems to be addressing people's *needs*.

In sum, the main conditions for sustainability of rural shelter development are:

- (a) the use of locally available renewable resources in ways which ensure that environmental assets are not degraded or depleted;
- (b) adequate capacity to plan and administer the implementation of long-term programmes;
- (c) adequate capacity to mobilize financial resources on a continuous basis in ways which guard against long-term reliance on subsidies and external support;
- (d) the use of appropriate technologies which, as far as possible, utilize locally-available human and material resources;
- (e) the adoption of solutions which the majority of the rural poor can afford; and
- (f) the satisfaction of people's real desires, as opposed to externally-perceived needs.

3. Case studies

The short case studies presented below illustrate some of the central arguments and issues raised in the previous section. All of the information presented is based on secondary sources, including case studies conducted by UNCHS (Habitat) in the last few years, as well as reports and evaluations produced within the countries in question. The last two cases have been published elsewhere by UNCHS (Habitat) (1991, chapters 3 and 4), and are presented here only in summary form.

The first case, the Malawi Rural Housing Programme, illustrates the way in which rural shelter provision can contribute to rural poverty reduction through employment creation in the areas of building materials production and construction. The case also demonstrates the feasibility of implementing a coherent national rural shelter policy, even by a country with as little resources as Malawi. The second case study, the Gutu-Mupandawana Housing Project illustrates how programmes and projects focusing on rural growth points and service centres can meet the shelter needs of non-agricultural rural inhabitants, including school teachers, medical personnel, rural industry employees and those employed in service provision rural enterprises. The project also illustrates how urban-based building societies, and other housing finance institutions, can be reoriented to serve the different and peculiar shelter needs of rural inhabitants, whose household income characteristics are different from urban ones in terms of both quantity and seasonal distribution. The third case, the Grameen Bank's Rural Housing Programme in Bangladesh, presented in summary form, demonstrates one way in which rural shelter improvement can be integrated within wider

programmes aimed at improving the socio-economic well-being of the rural poor. Further, it demonstrates the effectiveness of community-based methods of mobilizing financial resources for shelter and other dimensions of rural development. The 'Rural Housing Construction with Appropriate Technology Project' in Ecuador, also presented in summary form, illustrates how income-generating enterprises can be integrated within rural-shelter programmes in order to enhance shelter affordability and reduce poverty among the rural poor. The case also illustrates a number of key issues which should be taken into account in the formulation of rural shelter policies with regard to areas prone to earthquakes and other natural disasters.

3.1 The Malawi Rural Housing Programme

3.1.1 Introduction

The Malawi Rural Housing Programme was launched in 1981 with the help of UNCHS (Habitat), UNDP and UNCDF. The programme has demonstrated that decent rural housing can be provided at a reasonable cost and that rural housing projects can be used to generate employment and alleviate rural poverty. By helping rural people to help themselves, the Malawi Rural Housing Programme has further demonstrated the feasibility of the enabling approach outlined in the Global Strategy for Shelter.

Housing costs have been minimized through, firstly, the use of indigenous, locally-made building materials; secondly, the maximum use of improved, technically-sound, traditional construction techniques; and,

thirdly, the use of local building artisans (trained in the context of the programme) as well as self-help labour.

Employment generation has been achieved through a substantive programme of training of local artisans and the subsequent provision of soft-term loans to trained artisans, or entrepreneurs, to enable them to start small-scale businesses in building materials production and house construction.

The Malawi Rural Housing Programme has attracted world-wide attention and, in 1986, won an award from the United Kingdom-based Building and Social Housing Foundation (the BSHF-IYSH Award).

Before discussing the activities and progress of the programme, it is useful to provide some background information on Malawi's economy.

Malawi is one of the poorest countries in the world. On a global socio-economic ranking of 142 countries, it ranks 133 (Diacon, 1991, p.2). The national per capita annual income is K383 (equivalent to 94 British pounds). As a result, most rural families are not able to pay for any kind of house improvement using conventional building materials and construction methods. Malawi is a small country with a total population of 7.9 million, of which 90 per cent is rural. The most important rural economic activities are agriculture (mostly subsistence) and fishing. With regard to rural development, Malawi has followed a basic needs strategy, summarized by Banda (the country's president) as follows: "... whatever else the people of Malawi may not have, three things at least they must have and the first of these is food, second is clothing and the third is a decent roof over their heads, which does not leak when it is raining." (Diacon, 1991, p.2).

Housing conditions within rural areas are generally very poor. The majority of rural houses are traditional round huts. The walls are constructed from mud and wattle or unprotected-mud bricks. The roofs are of grass thatch, while the floors are made of rammed earth. While these materials are inexpensive, they are not durable and have to be replaced frequently. Earth, grass and timber, the basic building materials, are also increasingly becoming scarce, as more and more land is taken up for agricultural purposes. The majority of rural houses are structurally unsafe. Heavy rains cause the mud walls to disintegrate and collapse, while termites destroy the timber supports of the houses, eventually causing them to collapse. In addition, the houses lack adequate ventilation and natural lighting and generally constitute a fire hazard.

About 50 per cent of the existing rural houses are in an uninhabitable state and are in need of urgent replacement, while the rate of new household formation is 30,000 per annum (Diacon, 1991, p.3).

3.1.2 Aims of the programme

The main aim of the programme was to motivate, encourage and assist rural families to improve their housing conditions. In this context, an 'improved house' was defined as a physically safe and durable house which does not leak when it is raining; a cool and well-ventilated house with good sanitary facilities, which provides a healthy living environment as well as human dignity and self-satisfaction.

Given the fact that the majority of rural families could not afford any kind of house improvement using conventional building materials and construction techniques, the

programme focused on the development and use of low-cost building materials in order to reduce, substantially, the cost of housing. To achieve this, three objectives were set for the first, preparatory, phase of the programme:

- (a) the development and improvement of indigenous building materials;
- (b) the development of low-cost construction techniques and simple house designs capable of extension in stages; and
- (c) the training of local artisans in the production of improved local building materials and their use in house construction.

A further aim of the programme was to enable rural families to finance house improvement through the provision of loans in the form of building materials at affordable terms and conditions.

Another important aim was the development of a credit scheme through which small business loans would be provided to artisans (trained within the programme) in order to enable them to become small-scale entrepreneurs in materials production and house construction in rural areas.

The long-term goals of the programme were: firstly, to enhance the stability of the family and the rural community; secondly, to improve rural health conditions; and, thirdly, following improved rural health, to enhance socio-economic development through, among other ways, increased productivity and the generation of non-agricultural employment.

3.1.3 Implementation of the programme

The programme, which is still continuing, has been divided into phases, for implementation purposes. The first part of Phase 1 (1981 to 1983), established the institutional framework

and initiated the training programme as well as the development of low-cost building materials and construction techniques. The second part of Phase 1, which began in 1984 and ended in 1988, involved the establishment and testing of a rural housing credit system. Phase 2 (1989 to 1991) focused on the construction of dwellings on a country-wide basis. The next phase will involve further intensification of the geographical coverage of the programme.

For discussion purposes, the activities and implementation of the programme can be divided into four areas: building materials and technology development; house design and construction; programme funding and credit systems; and training and small-scale enterprises.

Building materials and technology development

The principal low-cost building materials developed in the programme were:

- hand-made fibre cement roofing sheets and tiles
- improved sun-dried mud blocks for internal walls
- hand-made concrete grills and door frames
- ant/damp-proof metal strips
- water-proof cement paint

The key construction techniques adopted in the programme include:

- site-stone foundation construction method

- paved-brick floor slab construction instead of mass concrete
- combination of sun-dried mud block and burnt brick wall construction
- mud-mortar joints and sisal fibre/dambo sand wall plaster
- application of concrete grills in window openings and wire nails instead of hinges for window shutters
- use of gum poles on load bearing cross walls instead of sawn timber and trusses
- fixing roofing sheets and tiles with hook wires instead of screws
- applying water proof paint on sun-dried mud block walls and fair-faced brick wall finish

House design and construction

House design and construction were based on the following basic guidelines:

- (a) house designs should take into account the traditional living habits and behaviour of the rural community;
- (b) house designs should be simple and easy for local builders and families to build and to make maximum use of locally-available materials;
- (c) house designs should allow for the easy extension of the house in stages, as and when the family can afford; and
- (d) the house should be able to be produced at a low cost through, among other methods, the adoption of small but functional room sizes.

Foundation and floor

Burnt rocks, which were found out to be the most economical, are used for foundation construction. They require minimum cement, sand, mortar and labour. Polythene sheets (500mm gauge) are used as ant/damp-proof barrier. The floor is made up of compacted broken burnt bricks as a base, with river sand laid on top in order to provide a level bed on which the bent bricks or blocks are laid, giving a 75-100mm thick floor slab. Joints between the blocks are sealed off with cement-sand mortar. It is possible to upgrade the floor at a later date through the application of cement screed.

Wall construction

Burnt bricks or blocks are used for the external gable walls, while sun-dried mud blocks are used for the internal and window side walls. Mud-mortar is used for all joints except the external joints of the burnt brick/block walls which are sealed off with cement-sand mortar, giving a fair-faced wall finish with good protection of the inside mud-mortar joints against rain. Sisal fibres are inserted in the mud-mortar joints to enable the plaster to stick to the mud-brick walls. Sun-dried mud block walls of 150mm thickness are used for internal load-bearing cross walls and are capable of carrying substantial roof loads. For internal wall plaster, a combination of river sand and *dambo* sand (with a relatively high clay content) is used without adding any cement.

Roof construction

Fibre reinforced cement roofing is used. This is made from cement and sand (in a volume ratio of 1:2), mixed with chopped fibre and mortar paste. Apart from being leak-proof and fire-resistant, it also provides a cool, quiet indoor environment, in contrast to corrugated

iron sheets which produce a hot and noisy indoor environment during the wet season. Fibre reinforced roofing sheets/tiles are also cheaper than most of the available conventional roofing materials and their cost amounts to less than 30 per cent of the cost of galvanized corrugated iron sheets.

Doors and windows

Locally-made timber doors are used for external openings, while simple panel doors made from bamboo mats are used internally. Simple, 300 mm by 300 mm, concrete vent blocks are used in standard window openings of 900 mm by 900 mm, instead of the more expensive metal or timber window frames with glass panes.

Programme funding and credit systems

While the programme is primarily based on self-help, financial support has come from UNDP, UNCDF and the Malawi Government. UNCHS (Habitat), as the executing agency, has provided technical support.

In order to help beneficiaries in financing housing improvement, a credit scheme utilizing funds from UNCDF was started in 1984. Any rural household may apply for a house improvement loan which covers basic building materials, including roofing sheets, doors, window frames, nails, window vents and ant poison. Initially, a loan ceiling of K600 (equivalent to 147 British pounds) was set. This was raised to K1,000 (245 British pounds) in 1988 in order to meet the rising cost of material inputs. The loans are given in the form of building materials. Programme participants have to pay a 10 per cent deposit, which is refundable at the end of the loan repayment period. The repayment period is 10 years and the interest rate is 12 per cent. Loan repayments are collected through the postal

agencies of the National Post Office Savings Bank. Unlike urban housing, the house built using the loaned funds is not pledged as security for the loan because, firstly, house repossession within the Malawian rural context would be socially unacceptable and, secondly, because of the limited exchange value (as opposed to use value) of rural housing.

Because of problems with the loan repayment system, some improvements are being considered, including the introduction of group lending through the formation of village housing development groups or cooperatives and the introduction of a group loan protection insurance scheme for all borrowers in case of death.

Training and small-scale enterprises

In order to facilitate training and technology diffusion, Rural Housing Programme Centres (RHP centres) were set-up. Programme beneficiaries are expected to construct their own houses, following basic training by RHP centre staff members, or to employ local builders and artisans. In order to facilitate this mode of implementation, the RHP centres are also responsible for the following types of practical training.

(a) Training of local people in the production of low-cost building materials using locally-available inputs. Because of their ability to pay attention to detail, women have been particularly encouraged to undertake the production of fibre-cement roofing sheets and tiles.

(b) Basic training of villagers, local builders and artisans in improved construction methods and application of locally-produced low-cost building materials.

Local people who have completed training are encouraged to set-up small businesses either in the production of building materials or as builders. They are encouraged to apply for loans from the Rural Housing Programme in order to help them to purchase tools and to start operating their businesses. Their market is virtually guaranteed, as both their building material products and building skills are utilized within the Rural Housing Programme.

3.1.4 Progress and impact of the programme

As already pointed out, rural housing has generally received little attention from housing and rural development theoreticians, as well as from national policy-makers. A very significant achievement of the Malawi Rural Housing Programme is that it has demonstrated the feasibility of formulating and implementing rural housing policies and projects, even for small and relatively poor countries. As the programme progresses, the numbers of beneficiaries have been increasing, as shown in table 4 below. The planned number of beneficiaries for 1992 was 2,500. The project has been extended to all of the 24 districts in the country and the numbers of beneficiaries per annum can be expected to keep on rising.

Another significant achievement of the Malawi Rural Housing Programme, particularly from the point of view of the present discussion, is that it has demonstrated the local income-generation potential of rural housing projects through the setting up of small-scale enterprises in building construction and production of low-cost building materials.

While potential candidates were initially doubtful of these types of venture, more and

more people are now being attracted into these enterprises. By 1990, 70 entrepreneurs had been approved, while more than 40 were already in operation (Diacon, 1990, p.15).

Table 4: Beneficiaries of the Malawi Rural Housing Programme

Year	Number of beneficiary families
1984	13
1985	78
1986	300
1989	750
1990	1,500
1991	2,000

The programme has had a number of problems regarding the loan repayment system. In particular, record keeping (at the post office branches) and follow-up of accounts in arrears have not been very effective. In spite of this, the Malawi Rural Housing Programme has generally made good progress and has generated a lot of international interest. A number of developing countries have sent delegations in order to learn from Malawi's experience. These countries include Botswana, Lesotho, Mozambique, Somalia, Tanzania, Zambia and Zimbabwe. In 1986, the programme won the World Habitat Award given by the British-based 'Building and Social Housing Foundation'. The programme was also cited for its significant contribution to the United Nations International Year of Shelter for the Homeless (IYSH).

3.2 The Gutu-Mupandawana Housing Project (Zimbabwe)

3.2.1 Introduction

Soon after independence in 1980, the Government of Zimbabwe approached the

United Nations Development Programme (UNDP) and the United Nations Centre for Human Settlements (UNCHS) to assist in planning and implementing programmes that would encourage home ownership among the low-income households. Consequently, in 1982, a low-income housing pilot project was initiated by the Government of Zimbabwe, with financial and technical assistance from the UNDP and UNCHS. The project was made up of two sub-projects. It was decided to locate the first sub-project in Kwekwe, a medium-size town with a total population of 48,000 at that time, and the second at Gutu-Mupandawana, a small but rapidly growing rural district service centre (declared a growth point) with a total population of 15,000 at the time. What follows is a description of the Gutu-Mupandawana component of the project (although the aims, implementation mechanisms and results of the Kwekwe component were generally similar).

Zimbabwe has a well-developed network of housing finance institutions. However, as in other developing countries, these institutions were, until recently, unwilling to participate in the long-term financing of urban low-income housing, let alone rural housing. The Gutu-Mupandawana Project experimented with a financing mechanism which aimed at extending the lending operations of one building society (Beverley) into low-income housing. It was the first ever such experiment and has been seen as the starting point of what is now envisaged to be a viable mode of financing low-income housing in rural growth points and service centres.

Among the main reasons underlying the non-participation of building societies in low-income housing are: stringent and often inappropriate affordability criteria; the construction and repayment risks often associated with low-income housing; and the

high administrative costs associated with small loans. These are summarized below.

(i) Affordability criteria applied in many countries often stipulate that monthly housing expenses should not exceed a given percentage of monthly income, usually lying between 20 per cent and 30 per cent. In addition, potential loan beneficiaries are required to furnish proof of steady employment and monthly income. While many low-income households, including self-employed ones, may in fact be willing and able to pay more than the stipulated percentage of monthly income (on account of the very prevalent earnings from the informal sector), the above affordability criteria officially push formal housing finance beyond their reach.

(ii) During the last two decades, a significant proportion of urban public low-income housing in developing countries has been provided through sites and services and squatter-upgrading schemes, usually involving a significant component of self-help in construction. To conventional building societies, the self-help aspect of these modes of provision poses two risks: firstly, the possibility that beneficiaries advanced building material loans may not complete building the originally planned house and, secondly, the possibility that the quality of the completed house may be below the normally acceptable standard. These factors make building societies reluctant to provide loans for low-income houses.

(iii) Because of their small size, low-income housing loans are considered to be too costly in terms of administration. In addition, there is a general (though sometimes empirically unfounded) belief that the rate of default in loan repayment is higher among low-income households.

Until this project, Zimbabwean, building societies were constrained by the above factors and had contributed virtually nothing to the development of low-income shelter. Before going into the details of the project, it is important to say something about the overall rural shelter policy context. In 1983, soon after the implementation of the Gutu-Mupandawana Project had started, and as part of the then prevailing debate on low-income shelter development approaches, the Government of Zimbabwe, through the Ministry of Public Construction and National Housing, announced a national rural housing programme. The aims of the programme were given as:

- (a) To provide decent, affordable, and durable accommodation and related services to rural people;
- (b) To provide financial assistance in the form of building material loans to beneficiaries;
- (c) To provide technical assistance on aided self-help projects through the training of skilled people in each project area so as to promote self-reliance in rural housing construction;
- (d) To encourage the formation of housing cooperatives with a view to promoting community participation in the construction of houses and the reduction of construction costs; and
- (e) To introduce building and production brigades to ensure production of good quality houses and to generate employment (Chenga, 1986; Mutizwa-Mangiza, 1992).

Target groups intended to benefit from the programme were low-income people in communal areas (the former 'tribal trust

lands'), resettlement schemes (newly created as part of an on-going land redistribution programme), rural and district service centres, growth points and large-scale commercial farming areas (largely owned by the white farmers).

3.2.2 Aims and beneficiaries of the project

The principal aims of the project were given as follows.

- (i) The development of innovative planning, design and construction solutions which would attempt to achieve a closer match between the functional requirements of the prospective low-income group beneficiaries, on the one hand, and their financial capacities, on the other.
- (ii) To experiment with new methods of organization in aided self-help, cooperative and communal efforts which would enable the beneficiary groups to be involved more closely in the formulation and implementation of their own housing solutions through participation in design, financial mobilization, construction and general community development.
- (iii) To experiment with the possibility of expanding domestic thrift potential for low-income housing finance, through the establishment of new mechanisms in existing housing loan finance institutions (building societies) to cater for the small loan requirements and savings capacity of low-income beneficiaries.
- (iv) To develop enduring and replicable solutions to the low-income housing problem.

The specific target population of the project was disadvantaged low-income households meeting the following criteria:

- (a) employed in the formal or informal sectors of the economy, or demonstrably self-employed, within either Kwekwe or Gutu;
- (b) earning a monthly income between Z\$50 and \$150, i.e. below the median income - which at that time was estimated to be Z\$175 per month;
- (c) capable of and willing to make a down payment of Z\$50 as plot/stand deposit;
- (d) resident within Gutu-Mupandawana for at least one calendar year and not owning any other immovable property within the project area; and
- (e) currently registered on the local authority's housing waiting list.

Beneficiaries were selected from the waiting list by a community development officer and community development assistants employed by MPCNH/ UNDP-UNCHS as part of the local project on-site staff, together with officials from the local authority. Beverley Building Society, which was to offer the individual housing loans eventually, was not involved in the selection of beneficiaries - which was to cause a few problems later at the loans approval and bond registration stages.

At Gutu-Mupandawana, the project aimed to provide 199 plots. The average stand or plot size was 30 by 14 metres (i.e. 429 square metres).

3.2.3 Financial aspects of the project

As emphasized before, the financing mechanism adopted sought, for the first time, to involve building societies in the direct long-term financing of low-income houses built predominantly through an aided self-help strategy.

The Gutu-Mupandawana financing mechanism specifically sought to resolve two major problems which normally discourage the involvement of building societies in low-income aided self-help housing, that is; firstly, the construction risks involved when borrowers have to contribute their own labour and, secondly, the inability of many low-income households to raise the lump sum of money required for deposit and front-end charges such as stamp duty and conveyancing fees.

For both Gutu-Mupandawana and Kwekwe, the UNDP provided funds for technical assistance (technical assistance provided through UNCHS) to the tune of US\$1 million, while USAID provided a grant of ZIM.\$2.6 million for the capital costs of the project. This latter sum, generated from USAID's Commodity Import programme, was expected to be fully recovered in order to begin a revolving fund which would cover other projects. The Government of Zimbabwe contributed Z\$0.22 million in the form of land and recurrent administrative costs (i.e. office space, secretarial services etc.).

The arrangement adopted was that the Ministry of Public Construction and National Housing (MPCNH), using UNDP funds as up-front capital, would advance loans to project beneficiaries for the purchase of building materials. The building materials would be purchased, stored on site and controlled by UNDP employees (i.e. a site coordinator, watchman and clerk-typist). After procuring the materials from the project site, the beneficiaries would go on to use their own labour and personal resources to build the house. They could also use the building brigade and housing cooperative modes of construction. Upon completion of the house, individual beneficiaries would apply for housing loans to Beverley Building Society -

the only one which responded to the invitation to participate in the pilot project. After approval of the application, Beverley would pay back to the Ministry of Public Construction and National Housing the sum initially loaned to beneficiaries in the form of building materials. After a grace period of six months, beneficiaries would then be required to start repaying the house loan over a period of 25 years, following a graduated or step-up payment plan, with the interest rate gradually rising at the rate of 5 per cent per annum over the entire amortization period (the overall annual interest rate being 12.5 per cent).

The average size of loan advanced was Z\$3,338 (ENDA-Zimbabwe, 1986). Beneficiaries were not required to pay any deposit (normally 10 per cent) or to separately raise money for front-end charges. The imputed cost of their labour contribution was considered as satisfying the deposit requirement. The following example, which assumes the total cost of materials for one house to be Z\$2,000, illustrates the exact mechanism adopted, as well as the risk apportionment (ENDA-Zimbabwe, 1986).

Cost of materials	Z\$2,000.00
Front-end charges	260.00
	<hr/>
Principal loan amount	Z\$2,260.00
	<hr/>

As government guaranteed 20 per cent of loan amount and the imputed value of labour contribution by beneficiaries amounted to 10 per cent of the value of the house, risk apportionment was as follows:

Building society (70 per cent)	Z\$1,758.00
Government (20 per cent)	502.00
Beneficiary (10 per cent)	251.00
	<hr/>
	Z\$2,511.00
	<hr/>

It is important to note that beneficiaries who were not engaged in formal employment and could not, therefore, provide proof of income to Beverley were given a 100 per cent guarantee by Government.

3.2.4 Management of the project

As with other low-income housing projects, policy and overall project planning was the responsibility of the Ministry of Public Construction and National Housing (MPCNH). Arrangements for finance and detailed house design were also the responsibility of the MPCNH. Detailed layout plans were the joint responsibility of the local authority, Gutu-Mupandawana District Council, and the Ministry of Local Government, Rural and Urban Development (MLGRUD). Expert technical assistance was provided by the United Nations Centre for Human Settlements (UNCHS), with funding from UNDP. As already indicated, USAID provided a capital grant of ZIM.\$2.6 million. Project implementation was coordinated and supervised jointly by the two local authorities involved and a project site team employed specifically for the project. The project site team included a site coordinator, a community development officer, a number of community development assistants, a clerk-typist and a watchman. Responsibility for collection of loan repayments was given to the District Council.

3.2.5 Evaluation of the project

In June 1985, ENDA-Zimbabwe was commissioned to undertake an evaluation of the project, including the Kwekwe component. Many of the issues raised below were an outcome of that evaluation by ENDA, which was completed in May 1986 (ENDA-Zimbabwe, 1986). Mutizwa-Mangiza (1990) also conducted a follow-up study of the

project during the period January to May 1990. The latter study mainly focused on financial issues, in particular loan repayment patterns and problems. Below, the Gutu-Mupandawana project is briefly evaluated in respect of the following dimensions: planning; finance; community participation; and project outputs.

Planning

(i) Utilization of past experience in project design and implementation

Prior to this date, Zimbabwe had no substantive experience with the aided self-help approach (including the large-scale provision of loans to low-income beneficiaries), or with the use of building societies for financing low-income housing development in urban areas, rural growth points and rural service centres. There was also no experience with respect to the inclusion of informal sector workers within public sector housing projects. However, some experience with urban sites and services and core housing approaches had been gained from the early 1960s to the mid-1970s, through projects such as Kambuzuma and Glen View in Harare (then Salisbury). The Gutu-Mupandawana project benefitted from the clarification of national policy which took place through the very significant debate which occurred around another project started around the same time, i.e. the Kuwadzana Low-Income Urban Housing Project in Harare. The debate focused on the role of the 'aided self-help', building brigade and housing cooperative approaches for low-income housing development, as well as on the physical standards of such housing.

(ii) Influence of the political climate on the project

The Gutu-Mupandawana project was quite bold in terms of its departure from previous

practice, and this has to be seen in the context of the prevailing political climate, which was one of immediate post-independence optimism and determination to uplift the living standards of the long-neglected black population. Minimum standards for urban low-income housing had just been raised, with the creation of the new Ministry of Public Construction and National Housing. Within urban areas, there was an attempt to address the housing problems of the poorest socio-economic groups, hence the inclusion of informal sector workers in the project. Within rural areas, there was a deliberate attempt to spread the benefits of urban infrastructure through the policy of growth and district service centres. Thus the housing project at Gutu-Mupandawana, a growth point and district service centre, was part of this general rural development thrust.

Unfortunately, up to 1990, the Gutu-Mupandawana project was not very representative in terms of its financing because there had been no replication of the adopted financing mechanism at a project scale - although building societies have gradually extended their lending operations (on an individual basis) to low-income housing. However, the Gutu-Mupandawana project is quite representative in terms of the use of the aided self-help approach, as well as the extension of public sector low-income housing projects to district service centres located within the communal areas (former tribal trust lands).

(iii) Clarity of project objectives

The objectives of the project were made very clear from the beginning, and have already been outlined in detail above. The project was essentially an experimental, demonstrative one. With respect to planning, the aim of the project was '...testing and monitoring new

planning, design and construction solutions which..’ would ‘..attempt to achieve a closer match between the functional requirements of the prospective lower-income group of beneficiaries and their financial capacities’ (ENDA-Zimbabwe, 1986, p.xi). In general, the project was able to fulfil this aim in the following ways. Firstly, through efficient building materials acquisition procedures and provision of stores on site, it was possible to reduce overall construction costs. Secondly, several cost saving elements were employed in the design of the project, for example P-loops, cul-de-sacs, back-to-back stands and communal tower lights. These enabled a reduction of capital/infrastructural costs to Z\$30 per square metre. Thirdly, the house designs employed managed to maximize living space and to minimize service space, thereby reducing costs per square meter of built up space. At the same time, the designs also allowed for various combinations of rooms and could be expanded to 8 rooms.

(iv) Special roles attributed to demonstrative purposes

The most significant demonstrative component of the Gutu-Mupandawana project was the financing mechanism adopted, which has already been explained above. Important aspects of the mechanism included: use of a building society to finance low-income housing development; resolution of the front-end charges problem; use of a graduated or step-up mortgage repayment plan; and inclusion of informal sector and self-employed beneficiaries who would otherwise be unable to produce proof of reliable income.

(v) Role of the project in view of the housing needs at the local and national scales

With regard to resolving existing housing shortage problems, the Gutu-Mupandawana

project managed to satisfy about 7.1 per cent of existing demand (as crudely measured through the official housing waiting list). The role of the project at the national scale was more in terms of the impact of its innovative financing mechanisms.

Finance

(i) Sustainability of project

Adequate arrangements for full cost recovery were made, although, as shown in Table 5 below, there have been a few problems with repayments. These levels of repayment arrears compare with figures as high as 99 per cent in the Lusaka (Zambia) World Bank funded project implemented between 1974 and 1981 (Rakodi, 1989, p.21). Within Zimbabwe, they compare with predominantly middle to high-income mortgage repayment arrears of 25.3 per cent in Masvingo, 14.5 per cent in Kwekwe and 14.4 per cent in Gweru. Thus, while Beverley Building Society has complained about mortgage repayment performance, it may be concluded, in general, that cost recovery has not been a serious problem in the Gutu-Mupandawana project and that low-income loan beneficiaries are not significantly different from middle to high-income beneficiaries in terms of mortgage repayment defaults. This has important implications on sustainability of projects.

(ii) Application of cross-subsidy schemes and revolving funds

There were generally no cross-subsidy arrangements, although there is a hidden subsidy in the (below market value) cost of land to beneficiaries. The revolving fund relevant to the project was located within the Ministry of Public Construction and National Housing. A condition of the USAID grant of

ZIM.\$2.6 million was that monies recovered as a consequence of the full cost recovery policy would be deposited into the revolving fund for utilization in other projects.

Table 5: Mortgage repayment arrears: Gutu-Mupandawana Project
(as at 30 December 1989)

Months in arrears	Per cent bond holders
1	9.1
2	7.5
3	3.8
4	3.2
5	1.1
6+	3.2
Total	27.9

Total number of bond holders at time of survey was 186

(iii) Affordability of the project to beneficiaries

According to the ENDA-Zimbabwe evaluation (p.xi), the houses provided at Gutu-Mupandawana were affordable, with households expected to spend 28.7 per cent of their monthly incomes on housing.

Community participation

(i) Level and effects of community participation - as intended and as achieved

The Gutu-Mupandawana project was conceived at a time when a policy debate on the concept of aided self-help and low-income housing standards in general was going on. Organizationally, the most important aim of the project was expressed as follows: '...testing and monitoring new methods of organization in aided self-help, cooperative and communal efforts (including building brigades) which would enable the beneficiary groups to be

involved more closely in the realization of their own housing solutions through participation in the design and/or finance and/or construction stages of housing and community development..' (ENDA-Zimbabwe, 1986, p.xi).

The aided self-help mode of implementation emerged as, by far, the most popular: 69 per cent of the beneficiaries chose aided self-help, 17 per cent chose the building brigade mode and the remaining 7 per cent formed a housing cooperative. In terms of labour costs, aided self-help Z\$360, while the building brigade mode cost \$888, i.e., at least twice the labour cost of aided self-help. Personal labour contribution by beneficiaries was minimal and limited to unskilled tasks such as carrying building materials from the site store and ground excavation. Most of the construction was done by small-scale informal sector builders hired, supervised and paid for by the beneficiaries. Beneficiaries also participated indirectly in the design stage, through their elected representatives in the local council, and directly in the selection of house types.

(ii) Social acceptability of project output

In general, the project was socially acceptable and most beneficiaries were happy with the house designs, in which they participated indirectly through their elected council representatives. The location of the project was also satisfactory, being quite close to the major employment area.

However, it appears that not all beneficiaries fully understood the requirements of the financing mechanism, to the extent that a few thought that they were not required to pay back anything - in spite of the beneficiary training provided. This probably accounts for the repayment problems pointed out above.

Other problems encountered were rising costs as well as increasing shortage of building materials, both leading to delays in house expansion.

Project outputs

(i) Formal evaluation of the project

In June 1985, ENDA-Zimbabwe was jointly commissioned by the MPCNH, UNDP and UNCHS to undertake an evaluation of the project. The evaluation was completed in May 1986 and has been widely distributed among individuals and organizations interested in low-income housing within Zimbabwe. The evaluation was quite detailed and involved beneficiary household surveys, field visits and discussions with project implementers. The evaluation was generally positive, particularly with respect to the financing mechanism used in the project.

An area where the Gutu-Mupandawana District Council (as well as the Kwekwe Municipal Council) exhibited some weakness is in the cadastral survey of land. There was generally a serious shortage of chartered surveyors in Zimbabwe and this frequently caused delays in the issuing of titles and in bond registration. From the experience of Gutu-Mupandawana, as well as that of other housing projects in the country, it was clear that if local authorities continued to insist on full cadastral survey before the installation of services/infrastructure, this constraint would greatly impede the efficient execution of large low-income housing projects.

(ii) Replicability

Since the Gutu-Mupandawana project, building societies have gradually extended their financing into low-income housing. Up to June 1990, the Central Africa Building

Society (CABS), which is the largest of the three building societies in Zimbabwe, had financed a total of 2,292 units, for which it has lent a total amount of Z\$28,831,475.00. CABS's low-income housing lending package requires beneficiaries to be earning less than \$450 per month. It is assumed that beneficiaries will be able to devote 25 per cent of their monthly income to housing. All beneficiaries are required to take a life policy which is ceded to the building society.

Founders Building Society has concentrated on lending for company assisted housing. Between July 1988 and June 1989, Founders financed 97 housing units. Of the 97 loans issued, 54 were below \$12,000 each, while 43 were over \$12,000 each.

While building societies have now generally accepted the principle of extending their lending operations into low-income housing, the Gutu-Mupandawana project has not been replicated anywhere else.

Another important aspect of replicability is cost recovery. Evidence from a follow-up survey of the project has confirmed the observation that low-income households do not necessarily have higher repayment defaults than middle- to high-income households and that full cost recovery is a viable concept. Where cost recovery has failed, it has usually been a result of inadequate institutional capacity. However, in the case of the Gutu-Mupandawana the local authority involved appears to have been robust and effective.

(iii) Lessons learnt from the project

In general, it can be said that the Gutu-Mupandawana financing experiment demonstrated the feasibility (and therefore replicability) of extending, profitably, building

society lending operations into low-income housing at rural growth points and service centres. It further demonstrated the feasibility of including informal sector employees and the self-employed within public sector housing projects, as well as the avenues for circumventing the risks (as traditionally perceived by building societies) involved in lending for low-income housing. The use of a graduated, or step-up, loan repayment plan was also another important lesson.

3.3 The Grameen Bank Housing Programme in Bangladesh: summary case study

In 1987, Bangladesh's population was estimated to be 93 million (most of it rural), growing at an annual average rate of 2.5 per cent and with a density of 1700 people per square mile (UNCHS, 1987, p.B1). In rural regions, 14 per cent of all families were homeless, and 80 per cent of the houses were *kutcha*, that is constructed with available natural materials, such as bamboo, grass and reeds. This type of housing is very unsafe, as Bangladesh is frequently struck by flood disasters caused by the monsoons.

The establishment of the Grameen Bank, under Professor Muhammad Yunus of Chittagong University, was based on a number of convictions: that the most significant constraint in releasing the productive energies of the poor was the lack of access to financial resources; that the rural poor could be brought into a viable banking framework on a national scale; that, with appropriate credit support, millions could find self-employment in familiar production, processing and manufacturing activities; and that any project attempting to extend credit to the rural poor would have to be exclusively devoted to the rural poor and would have to avoid long-term dependence on government resources.

Substituting peer pressure for collateral, the Grameen Bank sought to provide credit by which productive self-employment and housing improvement could be generated and the vicious cycle of poverty broken. The Grameen Bank was launched as a pilot project in Jobra village in 1976. From the beginning, it was emphasised that the branch offices of the bank should be its primary focus, for in the past, the urban-centred organization of banking institutions meant that rural branches had only facilitated the flow of resources from rural to urban areas. The Grameen Bank's ability to maintain a repayment rate of over 95 per cent netted it the support of the Bangladesh Bank and seven other government-owned commercial banks, which together supported the Grameen Bank with the capital necessary to expand its operations (Fuglesang et. al., 1986; UNCHS, 1987).

In its employee training programme, the Bank emphasises community involvement, field experience and community relations. Before the foundation of each branch, the prospective branch manager visits the site alone. He/she discusses the project with the residents at the site, and assesses their opinions as well as the potential of the future branch office. This is followed by seminars designed to instruct prospective bank members in basic economics and the principles of the Grameen Bank. The bank's fundamental unit is a group of five like-minded individuals, who must be inhabitants of the same village and enjoy mutual trust and confidence. Economically, they must come from the lowest strata of rural society, as eligibility is restricted to men or women who are either landless or who own less than one-half of an acre. Membership in groups and centres is according to gender. Six groups of five members each join together to form a centre, with the obligation to construct a meeting centre where they can discuss their concerns and conduct their bank business. A

chairperson and secretary are then elected by each group, and both speak for the group at weekly centre meetings, where attendance is mandatory.

After one month's observation by bank staff, two members of the group receive their first loans. If these first two members show good progress in repaying the loan, the next two members become eligible, and, if their progress is satisfactory, the final member of the group receives his/her loan. Further loans are not approved until the individual accounts of each group member are settled. With this structure, a network of mutual accountability is established, and the individual not only receives the support and advice of the group, but is also under group pressure to repay his/her loan on time. The first loans are approximately US \$160, and they are given at a rate of interest of 16 per cent, with a repayment schedule of one year. The group members also contribute to various funds, including: the Group Fund, used to handle group emergencies; the Emergency Fund, used as insurance for group members and their property; and the Children's Welfare Fund.

Housing loans can be obtained only after the successful repayment of two or three previous loans, and they are also dependent on the spotless record of the entire centre. In this sense, the house stands as a symbol of community cooperation and success. Members receive approximately US \$500, to be repaid over ten years at an interest rate of 5 per cent. The loan includes money to build a latrine (costing about US \$15). The centre is responsible for helping to build the house, thereby reinforcing the spirit of community cooperation. The Grameen Bank's involvement in the housing sector has also led to many secondary changes in the local economy, including the growth of small industries which use alternative materials in construction and maintenance. For example,

precast concrete posts are produced by women's cooperatives as a secondary source of income, and experimentation with small-scale brick-making units has also shown some potential. Participants in the housing loan programme are also expected to plant a vegetable garden around the house, which will improve the nutritional intake of the residents, as well as providing a possible source of income from the sale of the produce.

By March 1989, the Bank had over 470,000 members. By the end of 1988, the Bank had disbursed approximately US \$105 million in loans, and could boast a recovery rate of close to 98 per cent. Further, group members' savings had amounted to approximately US \$4.6 million, collected through a network of 484 branches covering 10,259 villages. More than 83 per cent of the loans disbursed had gone to female members, reversing the traditional gender-based systems of power in rural Bangladesh. The Grameen Bank experience, demonstrates one very effective method for mobilizing rural savings for self-reliant and sustainable local-level development, including the development of housing. Another important lesson from the Grameen Bank experience is its demonstration of one way in which shelter improvement can be integrated within wider activities aimed at alleviating rural poverty through improvement of the income-generation capacity of rural inhabitants. In addition, the Grameen Bank project has been able to address a number of important issues in current rural development discourse, namely: sustainable development, empowerment of the rural poor, and gender.

3.4 The 'Rural Housing Construction with Appropriate Technologies' Project in Ecuador: summary case study

The earthquake of March 1987 was the spark that inspired a project entitled "Rural Housing Reconstruction with Appropriate

Technologies", whose implementation started in December 1987. It was one of four interconnected UNCHS (Habitat)-assisted projects focusing on shelter improvement in rural Ecuador.

The integrated approach taken by the project was its most significant innovation. The underlying concept was that 'shelter' is much more than 'housing'. It encompasses other dimensions as well, including infrastructure and services. A further underlying concept was that rural shelter improvement, if it is to be a sustainable process, must be linked to improvements in other socio-economic dimensions which underlie rural poverty, including the economic productive capacities of participating communities.

The immediate aims of the project were: (i) to assess the impact of the March 1987 earthquake on the rural housing stock and to recommend repair procedures; (ii) to assist some of the disaster victims in the construction of new houses, community facilities and infrastructure; (iii) to transfer knowledge of earthquake resistant building techniques to the affected population, using locally-produced building materials and already existing construction techniques and practices, including the convivial *minga*, a traditional communal labour donation practice; and (iv) to increase household incomes in the rural areas and to facilitate their inclusion within the productive system of the state.

Beneficiaries of the project's nine sub-projects included: indigenous populations of the Sierra Region (Cangahua, Pesillo, Baldalupaxi, Miraflores and Planchaloma), most of them former serfs of *hacienda* owners; export crop agriculturalists of the Coastal Region (La Carmela); newly resettled farmers and indigenous populations of the Amazon Region (Reventador and Shuar) in the remote eastern

part of the country which suffered most of the devastation caused by the 1987 earthquake; and peri-urban communities located in Barabón and Turi at the margins of the third largest city, Cuenca.

An assessment of the houses partially damaged by the earthquake reached the conclusion that only a few of the houses could be repaired. The main cause of their destruction was that the required technical standards (foundations, structural supports, reinforcements, and wall supports) had not been followed when they were originally built. It was therefore decided to build new housing in all the communities. Appropriate alternatives have been developed for mud/adobe dwellings to make them more resistant and secure. Some of the traditional methods of construction have been employed, including: laying of foundations; use of L-shaped *tapiaderas* to hold up the walls; and roofs with four inclinations and extended eaves capable of providing greater stability and protection to the walls. In the Amazon Region, beneficiaries have been trained to make optimum use of wood, to treat wood, and have learnt assembling and joining techniques, which previously were the major construction problems encountered in the region.

When the programme was initiated, more than 70 per cent of the participating population did not have latrines. None of the localities where the programme was to be implemented had potable water. Many areas only had feeder roads which were in a very bad state of disrepair, thereby making them impassable during the rainy season. In collaboration with the local authorities, it has been possible to install piped water, and this has resulted in a decline in the incidence of intestinal ailments. In the same manner, roads have been repaired and small bridges have been built. This, together with the use of appropriate

technology, has benefited several different communities by penetrating isolated areas and facilitating access to more markets for these areas' products. Additional support has been offered to provide a number of community needs such as communal centres, schools, housing for teachers, sports grounds and communal centres. Communal centres are an important factor in strengthening peasant organizations. Since they are built employing appropriate technology and indigenous materials, they serve as an example with regard to the construction of housing at the community level.

In order to improve the poor economic status of the beneficiary population, some production or income-generation enterprises were established or enhanced. These included: (i) communal vegetable gardens, mainly in Reventador and Cangahua; (ii) breeding of guinea pigs, *vicunas*, *alpacas*, and *llamas*, in Cangahua and Pesillo; (iii) carpentry shops and drying of wood, in Reventador and Miraflores, and (iv) silos, mills, and bread ovens, in Cangahua. The merit of the project is that it has changed the mentality of the beneficiary groups so that they now feel capable of setting up, if not actual industries, at least small enterprises producing for family consumption. In future, such activities could provide real economic alternatives and not act simply as strategies for survival.

The participation of commercial, industrial and/or financial interests was encouraged. It is

clear that commercial activities (buying and selling of construction materials, of agricultural products and livestock, etc.) received a significant impetus due to the improvement of living conditions in the localities where the project was being implemented.

There now exists a rural shelter development model and accumulated experience which can be disseminated at the national level. The Council for National Development is considering the project's recommendations as the basis for formulating a national policy for housing and human settlements. As indicated earlier, the convivial *minga* is an ancient custom in this part of the world. It has gained new impetus during the project's implementation, and is now being adopted for self-help projects in areas other than shelter.

In general terms, the Ecuador Rural Housing project illustrates how income-generating enterprises can be integrated within rural shelter projects and programmes in order to enhance shelter affordability and contribute towards poverty reduction among the rural poor. The case also illustrates a number of key issues which should be taken into account in the formulation of rural shelter policies with regard to areas prone to earthquakes and other natural disasters, particularly the use of improved indigenous building materials and construction techniques.

4. Formulation of national rural shelter policies: basic guidelines

The Global Strategy for Shelter to the Year 2000 (UNCHS, 1990a) outlines the steps which have to be taken by each nation in the implementation of the strategy as follows:

- (a) Assessment of shelter needs;
- (b) Reorganizing the shelter delivery system;
- (c) Mobilizing finance for shelter delivery;
- (d) Producing and improving shelter.

As indicated at the beginning, few nations have coherent rural shelter policies and strategies. In addition, not much literature is available to guide rural shelter policy formulation. This section therefore outlines, on the basis of the discussion in the preceding sections, the main issues and elements which have to be considered in the formulation of rural shelter policies and strategies, within the overall context of rural poverty reduction, and of the enabling and sustainable development approaches to shelter improvement.

4.1 Assessment of rural shelter needs

The method for assessing shelter needs is well-known. The first step is to determine the size, composition and geographical distribution of the national rural population during the period in question. The second step is to calculate, on the basis of the estimates in step one, the total shelter stock required for the projected population. At step three, the total shelter stock required figure is compared with the total existing stock (of adequate standard) in order to determine the additional shelter stock required. At step four, the total quantity of shelter needed to replace obsolescent shelter is added to the additional shelter stock

requirement figure in order to determine the total shelter needs figure for the period.

The above formula, which works relatively well within the urban context, has to be applied flexibly in rural areas, particularly with regard to the estimation of existing stock of acceptable, or adequate, standard. For a start, the large majority of rural households will have a roof of one kind or another over their heads. Secondly, there are no legally stipulated shelter standards in rural areas, apart from the usually more controlled rural service centres where urban-based standards are normally applied. For most developing countries, the calculation of rural shelter needs has to take more account of improvement, or upgrading, of existing stock, rather than of the provision of entirely new shelter to a homeless segment of the population. Such upgrading has to include, in particular, provision of water supply and sanitation facilities. However, in rural areas prone to natural disasters, such as earthquakes and floods, the provision of larger quantities of safe, new shelter has to be planned.

4.2 Reorganizing the shelter delivery system

Unlike in urban areas, the majority of rural inhabitants are capable of providing some shelter of one kind or another for themselves, provided they have land on which to do it. Thus for many developing countries, the enabling approach, on which the Global Strategy for Shelter to the Year 2000 is based, is already in operation within rural areas, with individual households assuming virtually all of the responsibility for shelter development.

What is necessary, more than anything else, is the definition and strengthening of the

functions, or enabling role, of the public sector. In the rural context, by far the most important function of government in shelter provision is to ensure adequate and equitable access to land, as well as security of tenure. Thus, in countries characterized by landlessness and insecurity of tenure for large numbers of inhabitants, the fate of rural shelter improvement is closely tied to progress in land reform. The second important function of the public sector is ensuring the availability of appropriate technology for shelter construction, improvement and maintenance. Technology availability is determined by, among other things, scientific and socio-economic research, industrial production policies, dissemination of information and training. These functions are better performed by government, although, as shown below, non-governmental organizations also have an important role to play in this respect. The third important function of the public sector is the organization of finance, which includes both the mobilization of financial resources and the setting up of lending institutions with flexible lending rules appropriate for rural areas. Above all, the overall framework which will enable other actors, including non-governmental organizations and individual households, to contribute towards mobilization of shelter finance has to be put in place by government.

Non-governmental and community-based organizations have, in many developing countries, been traditionally involved in the provision of some aspects of rural shelter, particularly water supply and sanitation. Their activities have included facilitation of appropriate technology availability, training and mobilization of resources, including labour and finance. Within the enabling approach, non-governmental and

community-based organizations are expected to continue playing this role.

While rural households are already shouldering most of the responsibility for shelter development in many developing countries, the effectiveness of their contributions could, in many instances, be enhanced through better organization, as demonstrated by the Grameen Bank experience (see Section 3.3). Sustainable rural shelter development can only occur through self-reliant mobilization of resources, in particular finance and labour.

4.3 Mobilizing finance for shelter delivery

Mechanisms for mobilizing finance for rural shelter improvement must address a number of key problems.

(a) Average rural household incomes in most developing countries are generally lower than urban household incomes, and they tend to fluctuate significantly, peaking at the end of the harvest season. In addition, part of rural household incomes are not in the form of money. In consequence, levels of personal money savings in rural areas are generally low. This means that eligibility requirements determined by housing finance institutions in the context of urban areas are generally unsuitable for rural areas. Front-end charges (or down payments), and repayment periods are also often too high, and need to be synchronized with the savings capacities of the rural population and with their harvesting and marketing periods.

(b) A way has to be found of catering to the housing finance needs of a geographically-scattered population where the volume of business in a given locality may not be large enough to justify the costs of setting up a financing facility. Further constraints are

imposed by the absence of adequate information on rural housing, including financing needs and ability and willingness to pay, and this is often compounded by inadequate means of communication.

(c) Customary or cognatic land-tenure patterns in many rural areas of the developing world often mean that the land on which houses are built cannot be pledged as security for loans. In addition, the exchange value of rural houses is usually low. Alternative means of security for housing loans have therefore to be found and applied.

In line with the enabling approach to rural shelter improvement, three main sources of funds for financing rural shelter improvement may be identified. These are: allocations from central and local government; savings by the rural communities themselves; and the private sector.

Within the framework of a national rural housing policy, central and local governments could allocate funds specifically for rural shelter improvement, both by geographical area and time period. Such funds may be used for the development of community facilities, particularly water and sanitation, or to set up revolving funds for specific housing projects (as in the Gutu-Mupandawana project examined in Section 3.2). It is unlikely that funds provided by central and local government will go far in directly meeting the needs of the rural population, but such specific allocations, regularly made and transparently applied, can act as a potent catalyst in the mobilization of funds from other sources and in initiating concrete action.

Community-based savings and loan organizations, whose operational success depends on mutual trust and community cohesiveness, tend to be most suitable in the

rural context of many developing countries. There are many variations of such community-based organizations, but empirical evidence from many developing countries suggests two main types suitable for mobilizing shelter finance within rural areas: mutual help groups, and thrift and credit societies.

Mutual help groups, sometimes known as rotating credit societies, are informal, small and normally operate at the village level. In such groups, all members make fixed contributions regularly, weekly or monthly, and individual members receive all or part of the contributed lump sums in a rotating pattern. The main advantage of such groups is that individual households which normally do not have access to formal finance institutions can save regularly and have access to lump sums of money for major investment or development, including housing improvement.

Thrift and credit societies are more formally organized. They may operate within the legal framework of cooperatives, and are normally structured hierarchically, with village societies being affiliated to district societies and district societies being affiliated to national unions. Thrift and credit societies may be seen as banks for the poor, which mobilize small savings from rural households, disburse credit to members on the basis of mutual trust rather than on collateral and other formal criteria of credit worthiness, and operate with very little overhead costs. A particularly interesting variation of this type of institution is the Grameen Bank of Bangladesh, described in section 2. Other examples include Sri Lanka's thrift and credit societies, which have a long history and have recently been used for financing low-cost shelter development in both rural and urban areas.

Private sector housing finance institutions should be encouraged to extend their lending into rural areas. The experience of Beverley Building Society in Zimbabwe's Gutu-Mupandawana rural housing project described in Section 3.2 offers some interesting ideas which could be adapted to other situations. In most developing countries, part of the rural population is engaged in non-agricultural occupations and production activities. This includes school teachers, health personnel, government extension workers, local authority employees, employees of rural industries and service enterprises and those operating in the informal sector. Such people are generally located at rural service centres and can afford to borrow from a regular housing finance institution. For those borrowers dependent upon incomes from agricultural production, lending conditions have to be adjusted to suit local economic circumstances and this usually involves lowering of down payments and adjusting payment periods to suit the rural season-tied cashflow patterns. Other financial institutions not traditionally involved in lending for housing, particularly banks, should be encouraged to extend into this area. This includes post office savings banks (government owned), as in the Malawi Rural Housing Programme case described in Section 3.1. Where the settlement pattern is not dense enough to justify the setting up of permanent finance institutional structures, mobile systems for loan origination and collection can be put in place, operating within the context of periodic markets where these exist.

An interesting and potentially effective method of extending the lending operations of formal finance institutions (both private sector and government-owned) is through the use of 'community credit agents'. This method is being tried in Sri Lanka by two banks in cooperation with the National Housing

Development Authority (UNCHS, 1994). Under this scheme, the banks lend funds to persons of proven credit worthiness at an interest rate of 1.5 per cent per month. These persons, who come to be known as 'community credit agents', or *praja naya niyamaka*, go on to lend money to borrowers within their communities at an interest rate of 2.5 percent per month. In this way, the bank incurs little or no overhead costs as it is saved the burden of handling thousands of small transactions. At the same time, villagers gain from having access to credit at reasonable interest rates, an attractive alternative to informal village money lenders whose interest rates are often exploitative.

Another private sector source of funds for rural shelter improvement are large-scale business enterprises operating within rural areas, including commercial farms and ranches, plantations and mines. These generally employ large numbers of people on a permanent basis. They could be encouraged to provide safe housing, water and sanitation to their workers. Some fiscal incentives, including tax exemptions, could be used to catalyze action.

In setting up mechanisms for mobilizing finance for rural shelter improvement, it must be remembered that the level of domestic savings in rural areas is generally a reflection of income from production activities, mainly agriculture and non-farm employment. While housing production is itself an income earning opportunity for those involved in the production of building materials and construction, it is generally true that for the majority of rural households, improved housing is a reflection of improved incomes from other production sectors. For this reason, housing improvement programmes have "...to be preceded by or run parallel to income-generating opportunities..." (UNCHS,

1990a, p.19), as demonstrated in both the Ecuador and Grameen Bank programmes.

4.4 Producing and improving shelter

As already indicated, most of the effort in rural shelter programmes is likely to be directed towards improvement of the existing housing stock, mainly through the provision of infrastructure and services. Of particular importance in this respect are water supply and sanitation. Sustainable improvement programmes in most developing countries have to be based on the use of appropriate technology, including improved protected wells, tubewells and boreholes (for water supply); and versions of the improved pit latrine and the composting latrine (for sanitation). Also important in this respect are improvements in, and provision of alternative sources of, energy for rural households. Here, emphasis should be placed on: development and popularization of fuel-efficient cooking stoves, in order to conserve available fuel sources, in particular forests; afforestation and reforestation programmes, both for the conservation and increment of available sources of fuelwood; and the use of alternative, renewable sources of energy, including solar, biomass, water (hydro) and wind sources (UNCHS, 1991a, 1991b, 1991c).

With regard to the production of new housing, emphasis must be placed on the local production of building materials using locally available renewable resources. Of particular importance in this respect is the production of bricks/building blocks, wood components and roofing materials, as demonstrated in both the Malawi rural housing programme (see Section 3.1) and the Ecuador rural housing project (Section 3.4). The rate of exploitation of renewable resources must be regulated to allow adequate regeneration. In areas where wood is used as a main construction material,

important measures supportive of sustainable exploitation of wood resources, including afforestation and reforestation programmes, have to be implemented. This has been found to be very useful in low cost housing projects utilizing bamboo in housing construction. Also very important is the use of appropriate, labour-intensive technology in the process of building materials production in order to maximize employment, and thus make a contribution towards rural poverty reduction.

With respect to construction, improved housing designs should be simple and capable of being implemented by local builders; they should be implementable in stages, as and when individual households can afford further improvements; and they should take into account local cultural practices and people's aspirations. The training of local builders in the use of improved local construction techniques will, in addition to improving the quality of housing, also help in the generation of non-farm employment (as illustrated in the Malawi Rural Housing Programme described in Section 3.1). As demonstrated by the Ecuador rural housing project (see Section 3.4), improvement of local building techniques is particularly important in areas prone to earthquakes, floods and other natural disasters.

In keeping with the enabling strategy, and the non-farm employment generation objective, community participation should be the main implementation mode for rural shelter projects. This involves the use of own or locally-hired labour for the production of building materials and for construction, the maximum use of personal savings and the setting up of self-reliant, community-based organizations for the implementation of shelter programmes. Examples of organizational approaches to rural shelter implementation through community

participation include use of traditional 'work parties' and of 'community contracts'.

In many developing countries, the organization of village people into work parties for purposes of implementing worthy causes is a common rural practice. In Sri Lanka, such work parties are called *shramadana*, in Zimbabwe they are called *nhimbe*, and in Ecuador they are called *minga* (see Section 3.4). Work parties, which generally assume the character of convivial social occasions, are organized for a variety of purposes, including house construction, weeding of crop fields and harvesting. The labour is provided free of charge, but the beneficiary household normally provides food and drink for all participants. In many developing countries, particularly in British Commonwealth countries, the practice of rural work parties was utilized in the implementation of community-development policies which were very popular in the 1960s and early 1970s. Typical examples of projects implemented in this way included access roads, small bridges, village community halls, community latrines and water wells.

The 'community contracts' system, which also takes advantage of the traditional working parties practice, aims at involving local communities in improving the physical infrastructure in their villages. It involves the award of contracts for the construction and maintenance of infrastructure to members of the local community, as opposed to the use of commercial contractors. The award is normally preceded by a short training workshop whose aim is to familiarize community members with the operation of the community contracts system. This method has been successfully used in a UNCHS/DANIDA community participation training programme in Sri Lanka for the construction and maintenance of water wells, latrine blocks,

surface drains, roads and refuse containers (UNCHS, 1994).

Apart from the well-known benefits of community participation, the community contracts system, as used in Sri Lanka, has the additional advantages of generating employment for skilled and unskilled persons in the local communities, as well as providing on-the-job training in the technical and management aspects of human settlements infrastructure development.

4.5 The role of international organizations and inter-agency cooperation

Sub-sections 4.1 to 4.4 presented issues which need to be considered in the formulation of national rural shelter policies and strategies, the assumption being that much of the funding for rural shelter improvement will have to be raised from domestic sources. But, as shown in the Gutu-Mupandawana project, international organizations have an important role to play in rural shelter improvement within developing countries. In formulating their national rural shelter policies and strategies, developing countries have to think of and decide on the types of contribution that they need from international organizations. At the same time, international organizations have to consider how best they can advance the cause of rural shelter improvement in developing countries, both as individual agencies and in cooperation with each other. Some of the key issues which should be taken into account in this process are outlined below.

In discussing the role of international organizations and inter-agency cooperation in the area of rural shelter, it is important to answer at least four questions. Firstly, what is the nature of assistance required by developing countries in the area of rural shelter and, for

that matter, in any other development sector? Secondly, what is the justification, or rationale for inter-agency cooperation? Thirdly, what kind of cooperation is possible in the area of rural shelter? Fourthly, what kinds of rural development projects and programmes offer maximum opportunities for inter-agency cooperation?

Among the key deficiencies necessitating international assistance in developing countries are financial limitations, technological deficiencies and lack of skilled-human resources. Financial assistance flowing into developing countries for the purposes of rural shelter improvement should, given its paucity, be used selectively, either for emergency humanitarian purposes (post-disaster reconstruction and rehabilitation), or for catalyzing sustainable local action through the provision of seed money for revolving funds. Technical assistance should focus on strengthening the capacity of human settlements policy-makers, planners, implementors and managers in formulating and implementing rural shelter policies and strategies, as well as on creating and/or strengthening the institutional capacity required for the successful and sustainable implementation of rural shelter improvement programmes. The latter involves not only governmental institutions, but non-governmental, private sector and community-based institutions as well. Experience has shown that the best way of achieving the above is, firstly, through training and effective dissemination of relevant information and, secondly, through the implementation of demonstration or pilot projects. In addition to their demonstration value, such projects should, by creating revolving funds, also become the starting points of long-term rural shelter improvement programmes.

One of the main justifications for inter-agency cooperation is the need to enable beneficiary countries to derive maximum benefit from technical assistance projects and programmes. Shelter assistance has often taken place in an *ad hoc* manner, with little or no coordination with national development plans. Projects implemented in this manner seem sensible individually, but do not add up to a well-balanced and coherent whole (UNCHS, 1988a, p.24). More important is the fact that such technical assistance projects may result in conflicting aid objectives and policies on major issues such as housing and infrastructure standards, cost recovery, subsidies, project design and institutional responsibilities. From the point of view of the technical assistance agencies, the absence of inter-agency coordination often results in the duplication of time consuming and costly preparatory studies for projects and programmes (UNCHS, 1988a, p.24). In recent years, many agencies have started focusing attention on human settlements issues. Because of this, efforts by the various agencies can easily degenerate into competition, duplication and wastage of resources (UNCHS, 1988a, p.24). Clearly, if beneficiary countries are to derive maximum benefit from technical assistance in the area of shelter, and if technical assistance agencies are to avoid unnecessary wastage of resources, "... coordination in each national context among various aid agencies in shelter-related projects and programmes... will be crucial." (UNCHS, 1990a, p.28).

In accordance with General Assembly Resolution 43/181, UNCHS (Habitat) is the coordinating agency in the implementation of the 'Global Strategy for Shelter to the Year 2000'. The role of other United Nations agencies in the implementation of the Global Strategy for Shelter has been summarized as follows:

All United Nations bodies, specialized agencies and institutions should ensure that their relevant country-specific activities are supportive of and coordinated with the respective national shelter strategies. Agencies dealing with sectoral aspects of development not strictly related to shelter should emphasize the links between their areas of concern and the shelter sector and should assess the impact of their current activities on the objectives of the Global Strategy for Shelter. (UNCHS, 1990a, p.28).

Following the formulation of a national shelter strategy, including a rural shelter improvement component, there should, ideally, be an overview of inter-agency cooperation possibilities for each country. It is this overview which should guide the identification of inputs by individual aid agencies into that country. Substantive inter-agency cooperation can then follow in the design, implementation, monitoring and evaluation of individual projects and programmes. Apart from this, there is also a need for cooperation with regard to on-going, long-term research.

The main components of rural shelter around which inter-agency cooperation may be structured include: land, finance, building materials, infrastructure and services and housing construction. Access to land and security of tenure are fundamental factors in rural shelter improvement, as they determine both the extent of improvement and the type of beneficiaries. In the area of land reform, UNCHS (Habitat) should cooperate closely with those agencies involved in agricultural development, particularly FAO, WFP and IFAD.

As observed earlier, mobilization of financial savings from the rural communities is one of the principal ways of financing rural shelter

improvement on a sustainable basis. As illustrated by the example of the Grameen Bank, community-based savings or banking organizations cover many types of investment areas, including agriculture, non-farm income generating enterprises and housing. Principal agencies with which UNCHS could cooperate in this area include ILO, particularly in assistance for income and employment generating enterprises, and FAO, in connection with savings and lending for agricultural production. Such cooperation could operate through community-based organizations such as rural savings cooperatives and clubs, which are widespread in rural Africa and Asia.

The production of building materials, as argued earlier, is the principal means through which the rural shelter sector could contribute to non-agricultural employment generation and, ultimately, to rural poverty alleviation. UNCHS (Habitat) needs to cooperate with two principal agencies in this area, UNIDO and ILO. The production of building materials from locally-available renewable resources lies at the heart of rural shelter policy. UNIDO has had some valuable experience in the use of wood in construction in developing countries, particularly in their projects in Laos, the Philippines and West Africa. Advances have been made in the use of lesser known wood species, wood preservation technology and the use of wooden prefabricated components for industrial construction. ILO's concern with rural poverty reduction and employment generation through the local manufacturing of building materials and other related production projects is very much in tune with the enabling approach to rural shelter improvement.

In the area of physical infrastructure and basic services, cooperation with UNICEF and WHO would be fruitful. Such cooperation would

focus particularly on water supply (for both human and livestock consumption) and sanitation. Both these agencies are involved in the promotion of appropriate technology in the provision of rural water supply and sanitation through, among other things, the use of protected wells, tubewells, boreholes and versions of the improved pit latrine. Cooperation with UNIDO in the area of energy would be useful. Rural energy provision in the context of the enabling and sustainable approaches would focus on biomass, solar, wind and hydro sources of renewable energy.

With regard to improvements in rural housing designs, which is closely connected to building materials (already covered above), cooperation with FAO is desirable. The work being undertaken by FAO's Agricultural Engineering Service as part of its regular programme activities on rural structures could constitute the focus of collaboration. This includes: specification of standard farm building design components; experience in the design and construction of improved grain storage, particularly in Africa; and guidelines on self-help construction of rural farm structures and on technical specifications of the structures.

Finally, three types of rural projects and programmes which lend themselves to maximum inter-agency cooperation may be identified. These include: agrarian reform/development programmes involving the resettlement of households; involuntary resettlement of households resulting from the implementation of large-scale development projects, such as dams and hydro-electric power projects; and villagization. All of these involve the resettlement of large numbers of households and, in some cases, the creation of entirely new settlements.

With regard to agrarian reform and development programmes involving resettlement, FAO is the principal United Nations agency involved in this area, but many other agencies could be involved in a variety of areas, including: housing (UNCHS); water and sanitation (UNCHS, UNICEF and WHO); agricultural and food production (WFP, IFAD); roads and energy (UNIDO, UNCHS); and employment creation (ILO). UNCHS has, for some years, been participating in WFP-assisted projects, making particular contributions in: rural settlements planning; land-use planning and site development for villages; development and improvement of community services and facilities for health, education, recreation and communication; development and improvement of physical infrastructure, including drinking water, sanitation, energy, roads and transport; production of building materials; improvement of housing; settlement of refugees; disaster prevention planning and post-disaster reconstruction and rehabilitation; and training and community organization for self-help construction.

In the area of involuntary resettlement of rural households as a result of new large-scale rural-development projects, the distribution of responsibilities needs no repetition. However, it is important to note that the World Bank has issued some policy guidelines on involuntary resettlement in connection with Bank-financed projects (Cernea, 1988). While involuntary resettlement, particularly following the development of large dams, has been implemented on a planned basis for a long time, there seems to be a resurgence of interest in this area, as evidenced by the World Bank-sponsored 'Africa Conference on Environment and Settlement' held in Kampala, Uganda, in October 1991. Clearly, this is an area in which all the United Nations agencies cited above could be involved in, and

the World Bank guidelines constitute a good framework for inter-agency cooperation.

In the past, rural villagization programmes in the developing world have tended to be associated with socialist oriented systems of government. With the current swing away from socialism in many parts of the developing world, villagization will probably cease to be an attractive rural development option. However, there will continue to be

instances of voluntary rural land-use reorganization involving the resettlement of households in newly created consolidated villages. An example is the Mwenezi land-use reorganization programme recently implemented in the southern part of Zimbabwe with some assistance from the European Community. Again, such programmes offer opportunities for maximum inter-agency cooperation.

5. Conclusion

Section 2 started with a review of the dimensions and causes of rural poverty. The main argument presented was that poor shelter is one of the manifestations of rural poverty. It was further stressed that shelter improvement can significantly contribute towards poverty reduction in two main ways. Firstly, by effecting improvements in one dimension of material poverty and, secondly, by improving incomes through the generation of employment in the areas of building materials production and construction. The high multiplier effects of the construction industry (resulting from numerous backward and forward economic linkages), and their potential for employment generation, were also highlighted. The 'enabling approach' to rural shelter improvement was next outlined, and it was emphasized that this approach requires reorientation of the role of the public sector in order to concentrate on problems of shelter provision which individuals cannot resolve on their own, namely: land, technology and finance. The role of non-governmental and community-based organizations, as well as individual households, was also highlighted, particularly with regard to mobilization of financial and labour resources. With regard to 'sustainable development', it was stressed that rural shelter policies should emphasize the following aspects: use of locally available, renewable resources; use of appropriate, labour-intensive technology; and self-reliance in terms of financial and labour resources.

Section 3 illustrated, through case studies, approaches to rural shelter development, highlighting some of the issues raised in Section 2. The main issue demonstrated by the Malawi case study was the generation of employment through the production of building materials and construction. The case

also demonstrated the possibility of formulating and implementing nation-wide rural shelter-development policies. The Gutu-Mupandawana (Zimbabwe) case study illustrated the way in which urban-based housing finance institutions can extend their lending into low-income housing at rural growth and service centres, thereby improving the living conditions of those rural inhabitants involved in occupations other than agricultural. The case of the Grameen Bank's Housing Programme illustrated one enabling way in which rural shelter programmes can be financed, that is, through mobilization of financial savings from the rural communities themselves, as well as through flexible banking systems. The case also demonstrated the need to integrate rural shelter improvement within wider rural development programmes aimed at improving the earning capacity of the rural poor, as well as the need for specifically targeting the poorest sections of rural communities. The Ecuador rural housing project illustrated two main issues: firstly, the possibility of integrating non-shelter income generation projects within shelter programmes in order to improve affordability and, secondly, the possibilities of adapting locally-available materials and construction skills in areas affected by natural disasters.

In Section 4, directions for national policy were discussed under four main headings. Under 'assessment of rural shelter needs', it was stated that emphasis should be placed on the improvement, or upgrading, of existing shelter stocks rather than on the production of new shelter. Under 'reorganization of shelter delivery systems', it was emphasized that the public sector should pay particular attention to land, for without adequate access to land and secure tenure, there can be no sustainable shelter improvement in rural areas. The public

sector's role in the development and promotion of technology was also emphasized. With regard to 'mobilizing finance for shelter delivery', the role of the public sector through the direct annual allocation of funds specifically for rural shelter programmes and in providing an enabling framework for the mobilization of financial resources from other sources was highlighted, as was the need for community-based methods of financing rural shelter development. The role of the private sector in financing rural shelter improvement was also outlined, including that of already existing housing finance institutions, banks, large-scale commercial farming and ranching enterprises, as well as plantation and mining enterprises. Under the heading 'producing and improving shelter', it was stated that emphasis should be placed on: water supply and sanitation, as a principal way of upgrading the quality of existing shelter, and on renewable sources of energy for rural households; local production of building materials using renewable resources; and the use of appropriate, labour-intensive technology in both the production of building materials and construction.

The last part of Section 4 dealt with the role of international organizations, particularly those within the United Nations system, in rural shelter improvement, as well as the issue of inter-agency cooperation. It was pointed out that the mandate for coordinating the implementation of the Global Strategy for Shelter to the Year 2000 lies with UNCHS (Habitat). It was further pointed out that the main areas around which UNCHS (Habitat) could strengthen its cooperation with other

United Nations agencies are: land (FAO, WFP and IFAD); mobilization of finance (ILO and FAO); building materials (UNIDO and ILO); infrastructure and services (WHO, UNICEF and UNIDO); and rural housing design (FAO). In addition, three types of rural development programme offering maximum opportunities for inter-agency cooperation were identified, viz.: agrarian reform programmes involving resettlement of households in new areas; involuntary resettlement resulting from the implementation of large-scale rural development projects such as dams; and villagization programmes.

This publication has demonstrated the need for, and feasibility of, formulating and implementing rural shelter policies in developing countries, even though this has traditionally been accorded low priority. Such policies can contribute to rural poverty reduction and to a sustainable process of rural development. At the top of the list of priorities for future action - in terms of the formulation of national rural shelter strategies as well as international assistance - are those countries which are affected by natural disasters such as earthquakes and floods. The constant dangers to human life, and the widespread destruction of property resulting from these disasters, are the compelling reasons for according top priority to the affected countries. The second priority is improvement of infrastructure and services, particularly the provision of safe water sources and sanitation. This applies to the majority of developing countries. The health improvements resulting from this form of shelter upgrading are very significant. Finally, the third priority is the construction of new, improved housing.

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