Evaluation of Shelter Programs for the Urban Poor

Principal Findings

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ABSTRACT

The World Bank has been lending to support the development and improvement of shelter for the urban poor since 1972. The sites and services and area upgrading projects supported have followed a model of progressive development based on the provision of tenure and basic services. One early feature of the program was a pilot scheme to evaluate four such projects in El Salvador, the Philippines, Senegal and Zambia. This initial study commenced in mid-1975 and was concluded late in 1980. The conclusions of the detailed evaluation have confirmed that the experiment embodied in the first generation of Bank-supported urban shelter projects has been remarkably successful. The validity of the progressive development model has been established. Self-help construction methods have been relatively efficient. The impacts of projects on the housing stock have been generally greater than anticipated. The projects have been affordable -- and generally accessible -- to the target populations. Those measurements which have been concluded indicate that the projects' impacts on the socio-economic conditions of participants have been in the directions expected. And, notably, the projects have not had negative impacts on expenditures for food and other basic necessities. Notwithstanding this general record of success, the projects have encountered some problems and produced some unexpected results. For example, most projects have experienced delays in implementation; materials loan components have not been as successful as expected; support packages for small businesses have encountered problems; and two of the first three projects have experienced cost recovery problems. In addition, the use of family labor in construction has been less than expected and the demand for rental accomodations and credit greater than expected. An analysis of projects' successes and shortcomings supports recommendations that future projects endeavor to push standards and costs still lower, include explicit provisions and opportunities for rental arrangements and incorporate credit provisions more nearly tailored to the needs of targetted families -- about which we also know much more as a result of this program.

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INTRODUCTION AND SUMMARY

This report presents a summary of findings of a five-year evaluation study of four World Bank-financed urban shelter projects in El Salvador, the Philippines, Senegal and Zambia. The study was jointly sponsored by the International Development Research Centre of Canada and the World Bank in an effort to provide in-depth analysis of the basic assumptions of project design. The study commenced in the latter half of 1975 and its initial phase, which is reported on here, concluded in the latter half of 1980.

The study proceeded in parallel with the development of the Bank's urban lending and, as both evolved, was able to provide feedback into subsequent project design. With the exception of the Philippines project, which was approved in 1977, the projects under study were chosen from those approved through 1974. Thus, in the context of the 40-odd projects with substantial housing components (54 projects in all) which had been approved by the end of FY80 when this study was completed, they represent about a ten percent sample of early urban project experience. Nevertheless, they offer important perspectives on the formative years of urban project lending, confirming basic assumptions in project design while identifying areas which required special attention in subsequent projects. This special evaluation study itself had two principal objectives:

(i) assessment of major features of the specific projects studied as a guide to the feasibility of such projects, drawing lessons where appropriate for the Bank's urban lending program; and

(ii) testing of the evaluation methods used.

The purpose of this report is to transmit, to that portion of the development community interested in urban housing problems, the principal lessons of the study with respect to the first objective. These lessons are also supported by the findings of monitoring and evaluation efforts underway for other urban projects under implementation, as well as of associated research programs. These multiple efforts, when considered together, have provided substantial information on the experience of project implementation. As such, they constitute an important part of the Bank's learning by doing approach in the urban sector.

Evaluation surveys were carried out by field staff of social scientists and interviewers, assisted in the early stages by expatriate consultants and supported throughout by Bank staff in Washington. The research designs were built around the periodic application of a general socioeconomic survey to samples of both target and control groups, complemented by other studies, many of which focused on sub-samples of these populations. Analyses were conducted in the field and by Bank staff in Washington, the latter particularly when data sets across the four projects were compared. Objectivity and sufficient time for assessment were assured by the semi-autonomous nature of the field units, as well as by delegating the conduct of the research to a non-operational unit, the Urban and Regional Economics Division of the Development Economics Department (DEDRB) in the Bank. The IDRC played a prominent role not only in the financing of the program, but also in the organization of periodic meetings between the research teams, staff

engaged in these projects, and staff from project units contemplating similar evaluations. These conferences, held at least annually between 1975 and 1980, reviewed issues in research design and ongoing findings from project implementation, but concentrated on examining evaluation results themselves.

Given the complexity and high cost of comparative analysis, the evaluation was necessarily selective in the subjects chosen for detailed study. Much of the policy discussion prior to Bank lending in the urban sector had focused on the feasibility of mobilizing private savings for shelter investment, of designing truly low-cost shelter and infrastructure programs affordable to low-income households, and of influencing national shelter policies through the experience of pilot projects. The evaluation consequently addressed particular attention to these subjects, focusing largely at the project level and particularly on the economic and financial aspects of household behavior under project conditions, while devoting less effort to issues of institutional development and long-term program replicability.

This report presents the major conclusions from the evaluation. The rest of the Introduction reviews the utility of the progressive development model in implementing urban shelter projects, concentrating on: (a) impacts on the housing stock; (b) affordability of projects to the urban poor; (c) accessibility of projects to the urban poor; (d) impacts on the socioeconomic conditions of participants; (e) efficiency of the shelter programs; (f) problems in implementation; (g) potential project impacts on urban housing policies; and (h) observations about the target populations.

Chapter I examines project impacts in the four countries in more detail. Chapter II reviews methodological and operational considerations of affordability criteria in urban shelter programs, and Chapter III examines project efficiency in terms of eight principal components of the shelter package. The concluding Chapter IV examines possible implications of the evaluation's findings for future project design and policy.

THE PROGRESSIVE DEVELOPMENT MODEL

Since 1972 a substantial portion of the Bank's urban lending program has been based on the proposition that sites and services and squatter area upgrading projects, providing secure tenure and a range of basic services, will enable and encourage low-income households to improve their housing through self-help financing and/or construction. 1/ Improvements in living environments are expected to lead to growth in productivity and incomes over time. The projects are integrated "urban" projects as distinct from "housing" projects and appear to have marked advantages as compared with conventional approaches. Both project types were characterized in 1972 as "progressive development," implying that improvements would be made at a pace dependent on the incomes and

1/ Sites and Services development consists of the provision of new serviced sites which selected applicants buy or lease. Upgrading involves improvements to existing areas, although some families may have to be resettled to neighboring serviced sites to make room for essential infrastructure.

preferences of project households. 1/ When the special evaluations began in 1975, the upgrading and sites and services concepts were still relatively new and untested at the scale considered by the Bank. The evaluations were accordingly particularly concerned with testing the viability of these approaches in actual practice in terms of project costs, efficiency of the progressive development construction process, and affordability and accessibility of the projects to the urban poor. Five years later, the conclusions of the detailed evaluations confirmed that the experiment embodied in the first generation of Bank supported urban shelter projects had been remarkably successful. This statement does not imply that all projects have been equally successful or that individual efforts could not have benefitted from specific improvements. Nevertheless, the overall impression is positive and supported by the following evidence generated by this pilot evaluation program.

a. Impacts on the Housing Stock. The individual projects covered have been able to increase the national production of low-cost housing by up to 50 percent. In the case of Zambia, almost half the population of

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1/ Progressive development can be formally defined as a method of housing construction or upgrading achieved through:

(a) staged development in which the infrastructure and occasionally parts of the house are built by a contractor, and the rest of the shelter is completed by the household;
(b) flexibility in housing design, construction time, and materials used; and
(c) self-help components, which can be organized in the following ways:
  (i) mutual help, in which families work together in groups, often with supervision from project management;
  (ii) self-help construction in which the household hires a contractor to build the shelter;
  (iii) self-help construction in which the household hires and supervises individual laborers;
  (iv) self-help construction in which the household uses its own labor to build its house.

→ this definition of self-help is misleading.

Lusaka was affected by the project, while in secondary cities of El Salvador up to 20 percent of the total population from the third to sixth income deciles was affected. Of particular importance, in view of the early misgivings of local administrations who feared that the projects would result in new slums that would deteriorate over time, is the fact that the beneficiaries have been stimulated to produce a quality of housing higher than expected. Families continue to invest money and time in the project areas, progressively improving not only their houses but also community facilities such as sidewalks, parks and community centers.

Affordability of Projects to the Urban Poor. Evaluation study results indicate that in practice as well as in theory, plots in sites and services projects and sub-projects are affordable to families down to the 20th income percentile -- a more effective penetration to low income groups than contemplated in some of the conservative estimates for early projects. Upgrading projects can reach substantially lower. 1/ Thus far, residential turnover of families participating in the project has been no greater than amongst non-participant, "control group" families. Preliminary evidence from the Philippines suggests, moreover, that while rental rates have increased 11 percent since project initiation, the increase is less than the overall inflation rate. These findings, together with generally acceptable occupancy and building rates, support the conclusion that the projects are affordable to the target populations. 2/ Both sites and services and upgrading

1/ Other monitoring efforts have found that this result is true as well of rental space provided within sites and services projects.

2/ Because of the methodological and theoretical importance of affordability calculations to project participant selection and operations, they are treated in a separate Chapter (III) below.

to the target populations. 1/ Both sites and services and upgrading projects have led to significant improvements in the provision of water, sanitation, and other basic services to a large number of the urban poor. 2/

However, both in these projects and in others, considerable delays have occurred in the provision of some of these services. In initial projects of this type in a country, the large number of different government and private organizations involved in the provision of basic services presents a severe coordination problem for both implementation and financing. Consequent delays have raised the costs to participating households, thereby threatening affordability objectives. The lesson from this experience is that first projects in a given country should generally be small and relatively simple, enabling the executing agencies to build their capacity to provide the necessary services. This has been the practice in project design during the past several years.

c. Accessibility of Projects to the Urban Poor. The projects studied in detail have been able to reach low income groups, whereas most conventional public housing cannot reach even the bottom two-thirds of the income distribution, unless it is heavily

1/ Because of the methodological and theoretical importance of affordability calculations to project participant selection and operations, they are treated in a separate Chapter (III) below.

2/ The upgrading efforts in Indonesia and the Philippines have been successful enough to lead to replication of the programs on a national scale.

subsidized. 1/ However, the populations in these projects, although poor, cover in practice a fairly wide range of incomes. The great majority of beneficiaries is in the bottom half of the income distribution, although some may have incomes as high as the 70th percentile. In the project studies, and the same appears to be true for a number of other projects, most beneficiaries fall between the 20th and 50th percentiles of the income distribution, rather than below. In the case of sites and services, the occurrence of beneficiaries in the middle of the income range appears to be due in part to the difficulties of verifying the incomes of families at entry, coupled with the shortage of middle-class housing. 2/

For the upgraded squatter areas studied, although mean incomes were much the same and more of the very poor were included, 3/ the income range was somewhat broader than for the sites and services areas. This was an unexpected and important finding. While such sites may vary considerably in income mix from location to location, both the study and other evidence support the view that a considerable proportion of families in unserviced, low-rent residential areas are not as poor as their (constrained) housing conditions might indicate. Consequently, it

1/ In which case, the sizes of projects and programs are typically severely restricted by the subsidies required; the limited housing produced is greatly coveted, and seldom finds its way to the poor.

2/ Many of the early urban projects were less ambitious than later ones in working down the income scale, though both the El Salvador and Zambia projects were exceptions. At the time in question, prior to the concerted emphasis on reaching decidedly poor urban dwellers, to bring benefits to the bottom half of the income distribution was to pass a very important milestone; the El Salvador project, which aimed to reach down to the 17th percentile, was considered very ambitious. Subsequent projects have used various methods of differential pricing and improvements in physical design to reach below the 20th percentile.

3/ Thirty to forty percent of beneficiaries in the sub-projects studied were in the lowest two deciles.

is considerably more difficult than initially expected to target upgrading project benefits solely to the lowest income groups. On the other hand, the heterogeneous nature of project populations is not necessarily a negative factor as it is likely to mean that the communities involved are more representative of their society as a whole and offer greater employment opportunities for their low-income members. They are not ghettos of the poor.

d. Impacts on the Socioeconomic Conditions of Participants.

The process of house construction and upgrading has generated substantial amounts of employment and income. For example, in El Salvador, evaluation results indicate that a typical Bank project of 7,000 units will produce about 3,700 person/years of employment and US$4.2 million (1978/79) in wage income. More difficult to estimate, though nevertheless visible in each of the projects, are the effects of infrastructure investment as stimuli to small commercial and fabricating enterprises which can take advantage of improved vehicular access.

Shelter projects have also tended to produce significant increases in rental incomes. Originally the investment aspect of housing programs for the poor was ignored or in some early projects even discouraged by controls on the leasing of rooms and limitations on sales. It is now realized that the leasing of rooms may be one of the most effective ways of increasing incomes of the plot holders, in so doing tapping new sources of finance for housing. This source of profit is an important factor making plots affordable to participant families. In the process, low-income renters are simultaneously provided with access to a wider range of housing and community services options.

These projects have not had negative effects on expenditures for food and other basic necessities. One reason for this is that many of the poorer families receive financial assistance from relatives to cover a portion of their investment costs. Because of the complexity of the interrelationships involved, accurate measures of impacts in the health field entail rigorous technical requirements and high costs. For these reasons, the evaluation program has yet to investigate these potentially important effects.

e. Efficiency of the Shelter Programs. Both sites and services and upgrading use the progressive development approach whereby families assume at least part of the responsibility for constructing or upgrading their houses. This has proved to be a relatively efficient construction method. In El Salvador, for example, it was estimated that families can reduce costs by as much as 30 percent by building their own houses rather than hiring contractors. 1/ Families are also able to regulate their housing expenditures in accordance with income fluctuations.

f. Problems in Implementation. Although the progressive development model has in general operated well, a number of problems tend to occur in these projects:

(a) Although loans for materials have been instrumental in enabling families to complete construction, there have been some problems in the administration of these loans. The provision of materials through on-site stores has often resulted in considerable

1/ Michael Bamberger, Umnuay Sae-Hau and Edgardo Gonzalez-Polio, "Evaluation of the First El Salvador Sites and Services Project," World Bank, Staff Working Paper No. 549, September 1982.

delays, and may not have produced the expected price reductions. On the basis of these results, evaluation teams have suggested that, except in countries with acute shortages of building materials, families should be able to use the loans to purchase materials wherever they wish. Families should also be allowed to use the loans to hire labor if they wish; the evaluation has indicated that, for many families with little time available outside paid occupations, the use of self-help labor is apparently not as economical and therefore less common than had been expected. 1/

(b) Although the Philippines project was the only one of the four projects studied that offered a full-fledged support package to small businesses, both the El Salvador and Zambia projects also included at least one component designed to raise employment and incomes. In the case of El Salvador, small business loans were proposed. 2/ In Zambia the project included the development of markets and the provision of plots for small businesses. The unsatisfactory performance of these components and mixed experience with similar components in other

1/ See for example, Emmanuel Jimenez, "The Economics of Self-Help Housing: Theory and Some Evidence from a Developing Country," Journal of Urban Economics, 11:205-228 (1982), in press. In more recent projects, loans are being made available with less restrictions on use.

2/ In addition, a cooperative program not financed directly under the loans was associated with the project.

projects has raised doubts as to the feasibility of some aspects of this approach. The number of cases studied is too small to generalize from, but the poor performance in the projects studied appears to have been the result of a number of factors, including the choice of an implementing agency which was ill-equipped to provide business support, a lack of markets for some of the products, inadequate assessment of support requirements at appraisal, and the fact that the initial employment components were too small to have direct measurable impacts on the community. A more comprehensive review of experience with business-support components is now underway outside this evaluation program.

(c) Cost recovery proved to be a problem in three of the four projects included in the pilot program, although the causes and severity of the problems varied significantly.

In early stages of the Zambian project, for example, more than 50 percent of the families were in arrears, with many having made no payments. An assessment of the problem by the evaluation team revealed that it was not attributable to underlying affordability problems: there was no correlation between cost recovery performance and income. Rather, the investigation indicated a more complex

issue, including the need for clearer explanation to participants of what was expected of them, and how this related to project benefits; coordination of the commencements of utility services and repayments; and accurate record-keeping. The fact that non-payment of charges for public services was endemic in other sectors in the country is also highly relevant. In addition, in the Zambian case, it appeared that cost recovery was complicated by the fact that the local politicians perceived that they had little to gain by attempting to enforce efficient collection. That these factors are quite fundamental is borne out by the fact that, despite substantial efforts, the arrearages have not declined. By contrast, cost recovery experience in the El Salvador project, where the executing agency was private rather than public and where these aspects had been taken care of, was good despite limited use of available sanctions.

g. Potential Project Impacts on Urban Housing Policies. One of the major objectives of the "first generation" projects covered by the evaluation was to influence urban housing policies so as to make shelter more accessible to the urban poor. The projects have been successful in demonstrating that progressive development enables housing to be produced which is substantially cheaper than that produced by conventional processes. In Zambia a complete new house in one of the

overspill areas usually costs less than one-fifth as much as the cheapest government housing. In El Salvador, the better quality project houses cost less than half as much as the cheapest conventional house. In these countries, as well as others, such experience is beginning to be reflected in the evolving housing policies and programs.

h. Observations About the Target Populations. The households observed in the context of these projects, and the associated control areas, have behaved generally as expected. The characteristics of their demand for housing are not fundamentally different from those in other studies covering more formal housing markets in developed and developing countries. Two aspects of their behavior, however, have been less expected. As already noted, they have not relied upon their own labor in constructing their homes to anything like the extent foreseen at the outset. Further investigation has shown that their opportunity costs are frequently much higher than anticipated. 1/

The second finding remains a relatively new and unexpected result of the evaluation. Financial transfers, principally from within the extended family, are a much more important factor in the lives of these households than has generally been realized. Such transfers accrue, in any observation period, to perhaps a third of households, constitute about 10 percent of total income for the entire sample, are apparently as stable as any source of income, and are temporarily augmented when the opportunity to purchase an asset (such as a house) occurs.

1/ Much more is known in 1982 than was known in 1972 about the characteristics of "informal labor markets", as well as of "informal housing markets."

These findings are important for the future design of the lending program in two ways: they suggest that more and poorer families can afford the housing provided under these projects; and they suggest that credit requirements are probably much less uniform than anticipated, varying greatly among families.

The accumulated evidence from this evaluation program thus confirms the basic assumptions of the progressive development model and the expected impacts of project interventions in the housing markets in the cities where the evaluated projects were located. This is a significant substantive step forward in urban project design. This evidence also suggests areas for further improvement, such as in the design of credit programs, the administration of construction loans and in approaches to cost recovery. Such questions have been addressed at the project level as the problems became apparent and, in most cases, have affected the design of similar projects in other countries.

CHAPTER I

PROJECT IMPACTS

The four urban shelter programs studied emphasize different features, but all have served to demonstrate the viability of the progressive development model. Specific objectives have included the provision of additional dwelling units to cities' existing housing stocks, with the units constructed with better quality materials; the increase of living space per person in such housing; the extension or improvement of coverage in neighborhoods of water supply, sewerage, electricity, and roadway services; and the provision of additional community facilities. The evaluations have gauged impacts of the projects in six areas: (1) achievement of physical objectives, (2) accessibility to target populations, (3) improvements to housing, (4) access to services, (5) employment and income generation, and (6) broader impacts on national urban housing policies and on urban areas. Each of these will be presented in turn below.

Comparisons of Physical Objectives and Achievements in the Four Projects

With respect to achievement of physical objectives, the evaluated projects have made significant strides toward the attainment of stated goals. In El Salvador, for example, the $15.5 million project sought to increase by almost 50 percent the annual production of public housing, as well as to achieve the acceptance of the progressive development concept and the introduction of lower service levels. The following major components comprised the project design:

a. Serviced plots: the provision of 6594 serviced plots of approximately 75 square meters, with all plots to have individual water connections, electricity and water-borne sanitation. Plots were to vary in terms of the level of above-ground construction provided by the project contractor, with either no construction, a toilet and shower, or a partially completed dwelling unit being provided.

b. Building materials loans: to be provided for all participants.

c. Infrastructure:

1) Trunk water supply in 6 communities
2) Sewage collection system in 2 communities
3) 1 contingency well
4) 5 sewage outfalls
5) Storm drains for direct river discharge in 5 communities
6) 7 schools
7) 2 health clinics
8) 10 community centers
9) 1 market
10) Foot pathways in 8 communities.

The serviced plots and building materials loans were to be provided by the private implementing agency, the Fundacion Salvadoreña de Desarrollo y Vivienda Minima (FSDVM), whilst responsibility for infrastructure was divided between the FSDVM and appropriate government agencies.

As of July 1980, 4348 dwelling units had been completed and another 2246 were in progress; 3540 of the houses were occupied. Although house construction suffered delays of more than two years due to problems in acquiring land in the major cities, sufficient land was finally purchased for successful implementation. Virtually all project participants received materials loans. With respect to the FSDVM's

responsibility for infrastructure, the contingency well was in process of construction as of July 1980; four of the five storm drains were installed; and five of the eight foot-paths were completed. It was decided not to finish building the market, due to the community's questioning of the need for the facility. Regarding the government agencies' responsibilities for infrastructure, five of the six trunk water supply systems were completed and one of the two sewage collection systems was installed. Shortfalls, however, have occurred in the provision of schools, clinics, and community centers (see Table 1).

Comparing aims and attainments, then, the majority of physical objectives was achieved. In the process, it was demonstrated that reduced service levels and staged construction of housing were acceptable to the target populations. The average cost of basic housing units was kept to roughly $1350 each. The second urban project in El Salvador, moreover, continued to implement the progressive development model for lower income housing. As will be detailed below, the quality of the housing provided was as good or better than the alternatives offered by the formal and informal housing markets, with the sole exception of floor quality as against certain options.

Another comparison can be made betweeen the El Salvador project's achievements and concurrent activity in other public housing programs. The latter have been devoted to building substantially more expensive housing for a considerably wealthier segment of the urban population. In the period 1973-1978, for example, the Salvadorean Housing Fund (FSV) constructed 5000 units, costing between $4000 and

Table 1: PHYSICAL IMPLEMENTATION: COMPARISON OF OBJECTIVES AND ACHIEVEMENTS
FIRST EL SALVADOR URBAN PROJECT
JUNE 1980

Component	RESPONSIBILITY OF FSDVM			REPONSIBILITY OF OTHER AGENCY		
	Target	Completed	In Progress	Target	Completed	In Progress
Dwelling Units	6594 1/	4348 built 3540 occupied	2246			
Infrastructure						
Trunk Water Supply				6	5	
Sewage Collection				2	1	
Contingency Wells	1		1			
Sewage Outfall				5	4	
Storm drain for direct discharge into river	5	4				
Schools				7	3	
Clinics				2	1	
Community Centers				10	2	2
Market	1					
Foot Pathways	8	5				

1/ Original objective was 7000 units but due to switching of subprojects between the first and second loans the estimates were revised downwards.

$6,000, expressly for those employees covered by the country's social security system. These houses were hence available only to the wealthiest 30 percent of El Salvador's employed workers. Although the national housing policy can obviously embrace a range of programs, the FSDVM model demonstrates that an integrated housing strategy should provide and expand lower-cost options for the poor majority of the population, especially given the fact that the Bank-supported project added about $30 million to the value of the national housing stock.

The First Lusaka Upgrading and Sites and Services Project in Zambia constituted an even more ambitious effort. As in El Salvador, the Zambia project was viewed as a pilot venture to scale down housing standards, at the same time improving the housing conditions of nearly 40 percent of the capital's population. Specifically, the $42 million project sought (1) to construct communal standpipes, roads and security lighting for 17,700 families; (2) to allocate and develop 4600 sites and services plots; (3) to allocate and develop 7000 plots in "overspill" areas 1/; (4) to provide primary infrastructure for these areas; and (5) to build community facilities for the target population, including 20 schools, 3 clinics and health centers, 17 markets, and 17 multi-purpose community centers. The sites and services areas were to be allocated to families earning less than 70 kwacha, the poorer strata of Lusaka. Core units were expected to be erected for nearly 12,000 families in both

1/ "Overspill" areas are upgraded zones adjacent to improved squatter areas. The overspill areas provide residential lots for households displaced by the project, at the same time that they demarcate sites for future urban growth.

sites and services and overspill areas, and building materials loans were to be provided to both those groups as well as those in the upgraded areas.

Many of these objectives were in fact met. By March 1981, 98 percent of the infrastructure had been completed; over 19,900 families, some 2200 more than anticipated, had been served by standpipes, roads, and security lighting. In overspill areas, 7775 plots had been developed and 5500 allocated; in sites and services areas, 3660 plots had been developed and 2590 allocated. The relatively small shortfalls in both types of plot development were again due, as in El Salvador, to delays in project implementation, particularly in land acquisition. In some cases, it took as long as four years to obtain land, whilst it had been thought that all land required could be obtained within 12 months. Cost overruns, moreover, significantly affected the project unit's ability to provide the planned community facilities and core units. Delays affected the completion of over half the overspill plots and two-thirds of sites and services plots, and less than half the schools, clinics, markets or community centers could be built. 1/ Nor could all building materials loans be provided, due to the extent of cost overruns (see Table 2).

The magnitude of the achievement, particularly in upgraded areas, was however highly significant. In addition, nearly 8000 families were convinced to leave their homes and move to overspill areas, where they proceeded to begin to build new houses at their own pace and expense.

1/ Additional funds nevertheless have been approved for completion of these community facilities.

Table 2: PHYSICAL IMPLEMENTATION: COMPARISON OF OBJECTIVES AND ACHIEVEMENTS
FIRST ZAMBIA URBAN PROJECT
MARCH 1981

	Objective	Achievement
A. Physical Implementation		
1. Infrastructure	100% at 12/77	98%
2. Provision of communal standpipe, roads and security lighting	17,700 families	19916
3. Plots in overspill		
(a) Plots developed	7000 at 12/76	7775
(b) Plots allocated	7000 at 12/76	5500
4. Plots in Sites and Services		
(a) Developed	4601	3664
(b) Allocated	4601	2588
5. Community facilities		
(a) Schools	20	8
(b) Clinics/health centers	3	0
(c) Markets	17	6
(d) Community centers	17	7
B. Socio-Economic Improvement		
1. Allocation of sites and services plots to the target groups:		
(a) Families earning less than K70 (50%)	2170	484
(b) Families earning less than K300		2240
(c) Families earned more than K300		174
2. Core units erected:		
(a) Overspill areas	7588	3817
(b) Sites and services	4339	1230
3. Building material loans:		
(a) Upgrading (No. of loans)		1678
(b) Overspill areas		5081
(c) Sites and services		2392
TOTAL NO. OF LOANS	28,851	9151
VALUE OF LOANS	K 5,609,000 ($ 8,728,000)	K 2,874,000 ($ 4,081,080)

Very little resistance accompanied this massive relocation effort, even in settlements with histories of social and political unrest. As will be noted at greater length below, grassroots participation in the project, particularly in the form of the committees created to help plan the intra-community roads system, worked so well that these groups sustained themselves as community organizations after their initial functions had been successfully executed. 1/

In addition to the completed El Salvador I and Zambia Urban Projects, the two ongoing shelter projects have also had success in meeting physical objectives: In the Philippines I Project in Manila, Bank-supported investments aim to (1) upgrade the Tondo Foreshore area, through the "reblocking" 2/ of some 15,000 structures and by servicing them with basic urban infrastructure, and with health, education and other social services; (2) provide about 1000 sites and services units on vacant land in Tondo and about 2000 residential units with a similar package of urban services in the new low-income residential community of Dagat-Dagatan, with a similar package of urban services; (3) offer housing materials loans to the Tondo and Dagat-Dagatan residents; (4) promote employment through specific small business and industry

1/ Further details on the achievement of physical objectives can be found in the Main Report on the El Salvador Project, Bamberger, Sae-Hau and Gonzalez-Polio, op. cit., and in Bish Sanyal, Nelson Valverde and Michael Bamberger, "Evaluation of the First Lusaka Upgrading and Sites and Services Project," World Bank Staff Working Paper No. 548, September, 1982.

2/ "Reblocking" refers to the process of regularization of plot locations and boundaries. In the Tondo this process has meant marginal adjustments of boundaries and, in most instances, some movement of structures.

components; (5) improve road and transportation linkages in the project area; and (6) give technical assistance to the implementing agencies.

To date, the pace of housing investment in the Philippines case has been dramatic, and tightly linked to the land entitlement process prompted by the project. As soon as infrastructure was provided, definite lot assignments were awarded, and sufficient funds amassed, improvements to housing occurred, across all income levels. The Housing Materials Loans Program, as detailed below, has not been able to keep up with families' needs or desires to use higher-quality building materials. Although delays in inter-agency co-ordination have made some implementation bottlenecks unavoidable, no fewer than 97.5 percent of sampled households have undertaken some kind of housing improvement. Approximately one-eighth of all sampled households have built completely new structures in the upgraded areas. Although reblocking has reduced the average lot size in the Tondo area from 65.2 to 53.9 square meters, the range of lot sizes has been made considerably more equitable. The housing size range has shifted from a minimum of 13.7 and a maximum of 400 square meters, to one concentrated between a minimum of 32.9 and a maximum of 88.4 square meters. 1/ Despite contrary trends in the early period of implementation, rental space in reblocked areas has now increased. An average increment of 10.5 square meters has been added to sublet space, and the number of families offering rented rooms has increased by

1/ The trade-offs in the Philippines "improvements to housing" are further detailed below in this chapter.

10 percent. 1/ The upgrading concept has proved so acceptable that subsequent Philippine housing projects supported by the Bank have been modeled on the reblocking program established in this first loan project. 2/

As for the Senegal Sites and Services Project, the first project in the Bank's urban lending program, an ambitious series of physical and policy objectives was envisioned at the time of appraisal in 1972. The project proposed to (1) provide and prepare land for 14,000 dwellings on a large site seven miles from downtown Dakar, and for another 1000 units in Thies, Senegal's second-largest city; (2) equip the sites and services area with roads, power, water, and sanitation systems; (3) construct and equip 14 primary schools, 4 secondary schools, and 5 health centers; (4) provide sites for commercial, small-scale industrial, recreational, cultural and future educational facilities; (5) lend technical assistance for project engineering, management, and training for the formulation of a national sites and services program; (6) build extensions of primary infrastructure to the project areas; and (7) assist in the identification of squatter settlements for "upgrading" improvements and of a squatter area in central Dakar for a pilot community improvement project.

1/ This finding provides an illustration of the importance of timing in evaluating such programs. In the early stages of reblocking, the number of renters appeared to have dropped substantially, apparently as many were obliged or chose to move out while improvements were being made to the houses.

2/ "House Consolidation Study", Tondo Foreshore Dagat-Dagatan Development Project Report Series 80-2, RAD, National Housing Authority, Philippines, 1980, p. 49.

Four major problems hindered timely execution of the project for several years. First, the design standards initially adopted by the government were too high to be realized by the designated project agencies and/or by the majority of low income target families. Second, implementation delays in the provision of services made the sites uninhabitable for a lengthy period. Third, inflation raised the costs of building materials and associated project features. Finally, the considerable distance from the city center made the progressive development process more difficult for the target population to execute than elsewhere. Additional costs were incurred in materials transportation and time devoted to travel and house-construction and families were pressed to absorb costs of simultaneously maintaining inner-city residences and building new homes at the project site. During 1980, however, the population living on the Dakar site tripled. The acceptance of a more affordable basic design and core construction method by participant families, in a redesign of the project which includes construction loans and the use of project-approved small contractors, has significantly increased the rate of house construction. Nevertheless, the project has not worked out as foreseen: provision of additional water supply, lighting, and security services continued to lag, and the rates of construction and, particularly, site occupation have remained slower than hoped for.

In summation, the additions and improvements to the housing stock have been significant in the three projects where significant barriers did not exist. This has been true in terms both of quantity and the quality of investment undertaken. Despite delays in land acquisition and inter-agency coordination, project participants have quickly

followed up on the installation of infrastructure to begin constructing or improving their homes. Although the progressive development process has occasionally been snagged by the lengthiness of mutual or self help procedures, materials shortages, or cost escalations as detailed in subsequent chapters, project families have generally seized the opportunities to increase the consumption and investment benefits inherent in their new housing opportunities.

Accessibility to Target Populations

Although the four projects covered in the evaluation varied in the extent to which they sought to encompass low-income urban populations, the efforts have been broadly successful in their targetting. Nevertheless, the principal finding of the evaluation with respect to accessibility is that, in both sites and services and upgrading projects, the participating populations span a wide range of incomes and tend to be more representative of median income groups than of the poorest urban households. In El Salvador, for example, at least 85 percent of sites and services participants came from the lower 65 percent of the country's urbanites, extending down to about the 17th income percentile. 1/ The majority of participants, however, are from the third, fourth, and fifth income deciles. The project's success in remaining accessible to the target group, despite sharply rising costs, is even more impressive when compared to public housing ventures such as the FSV's program for formal sector workers. The latter, and other programs like it, have seldom reached even to median income levels (see Table 3).

1/ One (unconfirmed) view is that, when total costs--including all subsequent construction costs--are compiled, the project may not have reached below the 24th percentile. This analysis, however, did not consider the roles of transfers and rental earnings in the calculus.

Table 3: ACCESSIBILITY OF FORMAL AND INFORMAL HOUSING PROGRAMS TO THE URBAN POOR. SAN SALVADOR. 1977

Institution	Type of Housing	Lowest percentile who can afford this option
Tenement housing (mesones)	Poorest quality	6
Extra-legal subdivisions (colonias ilegales)	Poorest quality	10
FSDVM	Basic core unit	24
Tenement Housing	Adequate quality	24
IVU (Instituto de Vivienda Urbana)	Marginal housing in squatter areas (discontinued)	27
Extra-legal subdivisions	Adequate standard	42
FSV (Fondo Social para la Vivienda)	Normal program (1975-1978)	48
IVU	2 bedroomed houses	52
IVU	4 bedroomed houses	Beyond 60th percentile
IVU	Apartments	Beyond 60th percentile
FSV	Normal program (1978-1982)	Beyond 60th percentile

Source: Jim Richard and Michael Bamberger, "Economic Evaluation of Sites and Services Programs and Their Accessibility to Low-Income Groups in El Salvador", Table 2.15, FSDVM Report Series on the Evaluation Program, No. 16, July 1977.

Although initial project stages entailed a substantial dropout rate, 1/ once occupied the project sites have revealed little turnover, notably less than that in the "market" or non-project areas. The evaluation has also determined that the poorest households are not overrepresented amongst the families who leave. Rather, the departures come more or less proportionately from all income strata, and departees do not appear to be replaced by consistently higher income families. The fact that only 2.3 percent of the loan portfolio is in arrears (and that the FSDVM has the highest repayment rate of any World Bank shelter program) implies that project participants can meet housing payments.

The Zambia project has fared even better in reaching the lowest income groups. Sixty percent of the population of George, a typical upgraded area, come from the poorest 20 percent of the urban population; 58 percent of the population in Lilanda, a standard basic sites and services project, are representative of the poorest 30 percent of urban families. And, although cost recovery problems have arisen in the Zambian project, and more than 50 percent of the families are in arrears, studies reveal nonetheless that affordability problems are not the source of the poor repayment performance. Defaulting is not related to income level, and delinquent families at all income levels are observed to have paid higher rents previously to landlords capable of evicting tenants. Rather, a lack of political will on the part of government appears to have deterred effective collection. As discussed further in Chapter III below, the government's reluctance to press aggressively for repayment must be viewed in the light of the fact that higher income groups have historically enjoyed public housing subsidies not available

1/ This attrition is mainly attributable to mandatory participation in the mutual help program, as will be discussed in Chapter III below.

to Bank project participants. Still, the collection rate for the project is higher than that for other programs administered by the Lusaka City Council.

In the Philippines project, as noted in Table 4, over half the population in upgraded areas comes from the lower four income deciles. To date, moreover, the turnover rate of legitimate, direct project beneficiaries has been estimated at only four percent which compares favorably with non-project areas. These two findings, on the one hand, indicate that the project will prove both affordable and accessible to targeted low-income groups. On the other hand, a number of cases of illegal selling of rights to tagged (censused) dwellings in the project area has been observed, and some other interim reports have suggested that a significant proportion of families may not be able to meet regular payments for reblocked housing. 1/ As for the Senegal project, increases in costs and the fact that incomes have not risen commensurately with costs, have discouraged applications for participation from low-income households, according to the project's Bureau of Evaluation. 2/ These interim results from both ongoing projects point to the need to continue observing the socio-economic characteristics of families entering and leaving projects, and to evaluate selection criteria and procedures in this light.

1/ See "Preliminary Estimates of Project Turnover", Report Series 80-4, and "Interim Report," Report Series 80-1, Tondo Foreshore Dagat-Dagatan Development Project, RAD, National Housing Authority, Philippines, 1980. [As the analysis for this preliminary report does not comprise a full appreciation of transfers in participant families' finances, the report may overstate the possibility of affordability problems].

2/ Bureau of Evaluation, Report on Dakar Sites and Services Project, 1980, Part II, p. 7.

Table 4: URBAN SHELTER PROGRAM
(In Percent)

National Urban Income Percentile	SITES AND SERVICES				UPGRADING	
	El Salvador		Zambia			
	Sonsonate (1977)	Santa Ana (1976)	Lilanda (1980)	Matero (1978)	Philippines (1979)	Zambia (1976)
(a) 0 - 20	6	11	28	18	27	38
(b) 21 - 40	38	32	26	38	24	22
(c) Upper 60	56	57	46	44	49	40
(d) 41 - 60	37	38	16	14	23	17
(e) > 60	19	19	30	30	26	23
TOTAL	100	100	100	100	100	100

Table 4 summarizes the available evidence on accessibility across the three projects for which data are available. Using data collected in the three countries -- El Salvador, Zambia, and the Philippines -- it has proved possible to determine the relative positions of project beneficiaries in their respective urban income distributions, matched against national income statistics.

The project income profiles are meant to reflect the situation prevailing before project implementation. Attempts at an ex ante portrayal thus try to abstract from any income-augmenting impacts which the projects themselves may have had. The table presents the percentages of beneficiary households which fall within specific quintiles of the national urban income distributions. Specific magnitudes must be treated cautiously, as both measurement errors and methodological limitations constrain the accuracy of any given number.

Line (c) of the table presents the percentage of beneficiary households lying above an arbitrarily selected "poverty line" drawn at the 40th percentile. The six projects reviewed tend to have nearly half their households belonging to this upper 60 percent. This finding leads to the conclusion that median income households are representative of beneficiary populations. The only exception to this conclusion is the Zambia upgrading project, which clearly serves the poorer strata of Lusaka's population.

The three characteristics of these findings that are perhaps most surprising are the similarity in the income profiles between sites and services and upgrading projects; the extent to which the bottom 20 percent of the income distribution was reached; and the substantial percentages nevertheless from the top 40 percent of the distribution.

Line (a) indicates that, relative to sites and services, upgrading projects reach a larger percentage of the poorest urban residents. This outcome was anticipated by project designers, but the extent of the differences may have fallen short of expectations. At the opposite end of the income spectrum, according to line (e), all projects tend to benefit a sizeable number (19-30 percent) of families with incomes above the 60th percentile. For sites and services projects, this accrual of some project benefits to a less needy group, suggests that more attention should be paid to upper bound eligibility criteria. 1/ For upgrading projects, the presence of a larger upper income group than expected illustrates the income heterogeneity of squatter community populations. 2/ It suggests that informal housing is synonymous not with low incomes but rather with low rents, and that inadequate shelter may not be solely due to constraints imposed by absolute poverty.

These empirical results are at the same time intended to reveal the distributional aspects of project benefits. The findings are analogous to what has been learned about employment in the informal sector, namely, that failure to belong to the formal sector is not a robust indicator of poverty status. The results further recommend that housing objectives and poverty objectives be distinguished when justifying particular interventions into housing markets. If poverty alleviation is a project's primary goal, it may be that the types of urban shelter programs experimented with to date are not the most cost effective mechanisms for

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1/ For sites and services it is useful to compare all the lines of the table. If distributional objectives within a project are important, then attempts should be made to increase the proportions of beneficiaries falling into each successively lower income stratum.

2/ In fact, families in the fifth and sixth deciles from the bottom figured in the plans for the Zambia project, which was based on a very thorough survey of Lusaka's residential areas and their populations.

satisfying such objectives. 1/ If improving efficiency in the housing market is the primary goal, then existing intervention schemes can be more easily justified. The point is simply that housing and poverty objectives may not be easily achieved with the same interventions and that these goals should be individually addressed during project design and implementation.

Against this background, it is instructive also to look at more specific aspects of accessibility. If, on one hand, the focus is on maximizing access for the lowest income deciles, then the Zambian upgrading project is very successful (with 38 percent below the 20th percentile) compared to the El Salvador sites and services project (with only 6 percent). If, on the other, high income exclusion is the primary criterion, the El Salvador project scores higher (19 percent above the 60th percentile vs. 30 percent in Zambia).

The foregoing comparison suggests elements of a new perspective on sites and services as opposed to upgrading approaches. Hitherto, squatter area upgrading has been viewed by some to be an unambiguously superior approach to reaching the poor. In part this rested on difficulties encountered in gaining acceptance for and implementing the sites and services approach. 2/ At one point in the late 1970s (1978-1979) the difficulties encountered in practically all countries in obtaining

1/ It may also be found, of course, that relative to other basic needs programs -- nutrition schemes, health care centers, etc. -- housing programs are as effective or more effective in reaching the urban poor. In other words, alternative basic needs interventions may also be unable to exclude high income groups from receiving project benefits.

2/ For example, the reluctance of policy-makers to accept suitably low standards, as well as their equivocation on the provision of land for sites and services development compromise this strategy in most countries, whereas experimentation in a few cases with simple surveyed plots with minimum services indicate that this can be a very low-cost option.

suitable land for low-cost sites and services development prompted operational management in the Bank to ask the evaluators to address the question whether the Bank should concentrate primarily on this approach. The available information suggests that the Bank has been wise to stress the complementary nature of the approaches, as it has from the outset. What one then emphasizes will depend upon how the objectives are defined and upon one's appreciation of the constraints. If the principal goal is to achieve maximum penetration of benefits into the lower income deciles, then area upgrading may be the superior approach, even though it permits substantial benefits to go to higher income groups. If the primary goal is to concentrate benefits within a narrowing range of low (but not the lowest) incomes, then the sites and services approach, with improved targetting, looks more promising. Borrowing governments must themselves decide, in the choice of upgrading and sites and services programs, to what extent they wish to blend the two options to meet these and other objectives: increasing housing stock, "intercepting" squatters, guiding land development, etc. Obviously a more elaborate model will have to be devised to answer such questions even if objectives are clearly and precisely specified. The determination should involve an explicit weighting of benefits to various income deciles, and of the costs of their achievement.

Improvements to Housing

In the effort to quantify improvements to housing, estimations of housing quality and value have been undertaken in El Salvador and the Philippines. In both countries the evaluations have attempted to employ measures which incorporate families' assessments of dwelling quality along with non-subjective means, such as direct observation of building

materials, estimations of housing's monetary value, and professional appraisers' value assessments. In El Salvador, a scale was used to combine three-point ratings of quality of walls, roof, sanitary facilities and water supply with values converted to percentages to simplify interpretation. 1/ Three types of informal housing were ranked on this scale at the time of project initiation in 1976 and again in 1980. Table 3 below demonstrates that in 1976 very little difference in total housing quality was found between mesones and colonias ilegales (67 and 71 percent, respectively), whereas tugurios ranked much lower according to all indicators and on average (22 percent). 2/ By 1980, housing quality in the colonias ilegales and tugurios had registered some improvement, whilst no such change is indicated for mesones.

The 1980 results comparing project participants with residents continuing to live in mesones, colonias ilegales, and tugurios provide a good indication of the housing quality they could have had if they had chosen not to participate in the project. In addition, given that nearly 83 percent of project participants in Santa Ana formerly resided in mesones, a simple comparison with the figure for mesones provides a good indicator of the changes in the physical environment of the participants. The weighted comparison in Table 5 indicates that the move to the project has yielded a 21 point increase. Had the participants moved from a meson to a colonia ilegal, housing quality would have improved 12 points, and

1/ The scales are offered as a tentative but useful measure of summarizing quality tabulations; nonetheless, the figures represent only a relative order of magnitude rather than a genuine interval scale.

2/ For definitions of these housing types, see Bamberger, Sae-Hau, and Gonzalez-Polio, op. cit.

Table 5: QUALITY SCORES IN PERCENTAGE FORM FOR LOW-INCOME HOUSING IN SANTA ANA - 1976 AND 1980

	Roof	Walls	Floor	Water	Sanitation	Light	Average
1976							
Meson	98	51	76	50	36	92	67
Colonia	88	79	57	66	50	87	71
Tugurio	28	17	1	32	9	42	22
1980							
Meson	99	55	53	47	47	95	66
Colonia	93	79	41	84	76	96	78
Tugurio	48	37	2	49	34	40	35
Project	100	99	48	100	100	100	91
Change 1976-1980							
Meson	+1	+4	-23	-3	+11	+3	-1
Colonia	+5	0	-16	+22	+24	+9	+7
Tugurio	+20	+20	+1	+17	+25	-2	+13
Project	+1	+46	-32	+51	+55	+6	+21

Note: The percentage scores are based on the frequency distribution given in Table 4.1 of the main report on El Salvador. These were transformed into percentages where 100 percent indicates all families had good quality and where 0 percent indicates all families had bad quality. The scores are intended as a simple way to summarize the results; the figures only represent a relative order of magnitude rather than a genuine interval scale.

Source: Bamberger, Sae-Hau and Gonzalez-Polio, op. cit.

again would have remained roughly the same if they had stayed in a meson. The only feature for which the move from a meson to the project has involved a decline in quality, and that a small one, is that of flooring. 1/ As for satisfaction with lot size, living area, housing materials, and overall quality of construction, the project ranks higher than the other options.

Attempts were also made to estimate changes in housing value. These cannot be measured directly at market values, given the project stipulation that houses cannot be sold within a five-year period following completion. As shown in Table 6 below, five possible indicators of housing value in 1979 were used as proxies: (1) construction cost, (2) owner's estimate of sale price, (3) owner's estimate of rental value, (4) comparison of value and cost, and (5) comparison of rent (multiplied by 100) 2/ with value. The table reveals that the mean cost of colonia houses is more than twice that for project housing; there is, however, very little difference in cost between the two options in the lowest quartile range. These findings indicate that the colonia covers a much broader spectrum of housing units (types and values). Using owners' estimates of value, the value/cost ratio is considerably higher for project housing than for that in colonias, suggesting that a higher rate of return on investment is obtained in the project. A similar conclusion is derived from the comparison of rent and value. In the

1/ Project management has eschewed cement floors in order to keep costs down. This appears, however, to coincide well with families' priorities as they have been observed in all the projects studied to voluntarily postpone the completion of floors while attending to other structural features.

2/ In a well functioning market it is often observed that monthly rent equals approximately one percent of a house's value.

Table 6: COMPARISON OF COST, ESTIMATED VALUE AND RENT FOR PROJECT AND INFORMAL HOUSING SANTA ANA 1979.

	Estimated Cost Value (1)						Rent (2)	Value/ Cost	Rent x 100/ Value
	$\bar{X}$	Interquartile Range		$\bar{X}$	Interquatile Range		$\bar{X}$	$\bar{X}$	$\bar{X}$
Owners									
FSDVM	7,639	5,718	8,743	10,800			83.3	1.41	0.77
Colonia	19,811	5,690	20,491	20,728	1,200	25,000	136.8	1.05	0.66
Tugurio	617	276	800	616	350	800	17.8	.99	2.88
Renters									
Meson				3,317			33.2		
Colonia				5,122			51.2		

Note: (1) For Owners, Value = Estimated Sale Price
For Renters, Value = 100 x Rent

(2) For Owners this is their estimate of Rental Value

project, rent is equal to 0.77 percent of value, whilst the ratio is 0.66 in the colonias, again suggesting that a higher proportion of value is recouped in the project. 1/

Estimates were also made of changes in value. A comparison was made for participants between the rents they were paying in 1976 and the imputed rental values of their project houses in 1980. If it is assumed that rent is proportional to value, the changes can give an indication of the changes in the value of the house. The mean value of imputed rent in 1980 is 3.41 times the 1976 rent (adjusted for inflation). In contrast rent only increased 1.45 times for families renting in colonias ilegales and 1.22 for families remaining in mesones. The methodology used for these estimations is not completely precise, but the figures would again seem to suggest that the move to the project is associated with an increase in the real value of housing.

Although shelter in various types of informal housing (including that in mesones, colonias, and tugurios) can be cheaper than in FSDVM projects, cost-benefit analysis investigating internal rates of return has demonstrated that the Fundacion's projects yield higher rates of return than any other type of formal or informal housing accessible to low and middle income groups in El Salvador. For a family living in a meson, from which most participants do come, the move to the project in fact triples the rate of return. The projects also rank favorably

1/ It is interesting to note that in tugurios rent is 2.8 percent of value, indicating that people are prepared to pay for the favorable location even though lack of security of tenure makes the sale price relatively low. It should also be noted that, due to the strong demand for the first projects in San Salvador and other major cities, it had originally been assumed that a standard project design could be used everywhere. Projects in smaller cities, however, encountered less substantial demand, particularly where plentiful land was available for extra-legal subdivisions.

when the options are scaled according to net present value, and net present value as a fraction of total costs. It appears that a family can acquire more housing services (that is, receive more benefits) for a given sum from the FSDVM than under any of the other available shelter market options. 1/

In the Philippines, hedonic pricing techniques have been used to determine which attributes of squatter dwellings contribute most to housing value and to obtain price-consistent measures of change in housing quality. Hedonic techniques presume that a reasonable, well-fitting relationship exists between the prices of housing features (or those of any good) and the characteristics of those features or good. This relationship can be expressed as:

$$V = f\ (C_1, C_2, \ldots, C_n)$$

where

V = price (or value) of the house

C = characteristics of the house.

The exact relationship between housing characteristics and their prices is not known. It is assumed, though, that this functional relationship can be expressed in the linear form:

$$V = p_0 + p_1C_1 + p_2C_2 + \ldots + p_nC_n + \text{error terms}$$

1/ Bamberger, Sae-Hau and Gonzalez-Polio, op. cit., Chapter 13 provides a summary of the analysis by Marisa Fernandez-Palacios and Michael Bamberger in "An Economic Analysis of Low Cost Housing Options in El Salvador," which is currently being revised for eventual publication.

Hedonics have been demonstrated to be useful in measuring changes in housing quality over time. In the Philippines, observations of housing characteristics were taken twice: before structures were affected by reblocking and again six months after reblocking. Data from the first period (containing information on the houses' estimated values) are used to estimate a hedonic equation of the form:

$$V^0 = \hat{p}_0^0 + \hat{p}_1^0 C_1^0 + \hat{p}_2^o C_2^o + \ldots + p_n^o C_n^o$$

where the superscripts refer to the initial period. The above equation is estimated for the full sample, and assumes that p_1 captures the market price of the ith characteristic at that time. From it, V^0 can be generated, representing that part of the sample which has actually moved; V^0 gives the estimated value in the initial period of a house which was subsequently affected by reblocking.

In the second period, housing value would be V^1, which, strictly speaking, would not be comparable with V^o as a measure of quality change since prices may have altered in the meantime. Because housing prices are difficult to measure due to the indivisibility of the good, housing cannot simply be "divided out." If however the estimates of hedonic coefficients from the above equation are substituted into another equation using characteristics in the second period, one can obtain an estimate of V^1 in terms of the initial period prices, or:

$$\hat{V}^1 = \hat{p}_0^o + \hat{p}_1^o C_1^1 + \hat{p}_2 C_2^1 + ,,, + \hat{p}_n^o C_n^1$$

This equation can be estimated using linear regression analysis.1/ The coefficient of each characteristic can be interpreted, moreover, as the shadow price of that characteristic; for example, if C_1 denoted the number of rooms, p_1 measures an additional room's contribution to the total price (or value) of the house. The relative change in housing quality (Q) can then be estimated as:

$$\Delta Q = V^1/V^o$$

The measures used in these equations in the case of the Philippines were drawn from two sources: (1) estimation by 96 household heads of their structures' worth and the value of individual housing characteristics (floors, walls, etc.) and (2) the valuation of the structures by a trained independent appraiser under contract to the National Housing Authority (NHA) 2/. Results with respect to housing value indicate that owners' assessments of their houses' worth (average 14,145 pesos) were on average extremely close to those of the appraisers (average 14,902 pesos). In addition, the two (sets of estimates are highly correlated with one another and yield similar results when used as dependent variables in the hedonic price equations. The determinants of squatter dwelling value tend in general to be similar to those for "formal sector" dwellings. A house's external appearance and quality of materials used in construction are among the most important variables, especially the use of concrete walls and some sort of finish, such as

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1/ Assuming that the errors are randomly distributed and are not correlated with one another.

2/ A more detailed discussion of the hypotheses concerned and the results of the estimation can be found in Emmanuel Jimenez, "The Value of Squatter Dwellings in Developing Countries", Economic Development and Cultural Change, July 1982.

paint, on those walls. 1/ Likewise, lot size is an important contributor to value. Interestingly, age of structure appears in this sample to be positively correlated with value; it can be hypothesized that age represents a house's demonstration of durability (and reduced risk), a visible token of the accumulated resources invested through progressive development. 2/

Examined over time, most measures indicate some degree of improvement in housing quality, summarized in Table 7 below. The changes are especially evident in the greater proportions of households with solid walls and concrete foundations; lot and building areas are also somewhat larger on average, as is the average number of floors. The proportion of structures with water connections declined slightly, probably due to the short period between observations coupled with the aforementioned delays in providing water. The hedonic equations also reveal that overall housing quality in Tondo has increased from 60 to 85 percent; or, in monetary terms, the absolute increase in housing value following reblocking ranges from 6200 to almost 8000 pesos (approximately US$800 to $1000). Within a short period the project has stimulated housing investments which have in turn raised dwelling quality and value by a substantial magnitude.

1/ Improved materials in this project are probably indicative of cost effective improvements in housing quality. In other instances, however, they may not be: Zambia, for example, lacks an efficient market offering a broad range of choice amongst building materials. This subject will be treated in Chapter III.

2/ The average structure in Tondo is nearly 12 years of age, a measure of foreshore residents' ability to survive numerous threats of eviction and razing.

Table 7: HOUSING CHARACTERISTICS IN THE TONDO AREA 1/

Variable	Description (Averages)	Mean Before Reblocking for Affected Sample 2/	Mean After Reblocking for Affected Sample 2/
AGE	Age of the structure in years	8.58 (4.25)	10.2 (4.45)
CMNTWALL	Proportion of dwellings with solid (cement or brick) walls	.16 (.37)	.47 (.51)
FINWALL	Proportion of dwellings with wall finish (e.g., paint)	.03 (.28)	.05 (.16)
SOLIDF	Proportion of dwellings with concrete foundations	.08 (.27)	.26 (.45)
LOT	Average lot size in square meters	61.3 (64.5)	72.2 (146.3)
BUILD	Average building area in square meters	32.1 (16.3)	53.4 (15.3)
STORY	Number of floors	1.4 (.50)	1.6 (.50)
TOILET	Proportion of dwellings with bucket-flushed or other water-sealed toilet	.29 (.46)	.50 (.51)
WATER	Proportion of dwellings with sink (and water connection) installed	.92 (.27)	.84 (.37)
RICH	Proportion of dwellings in neighborhoods (super-blocks) with monthly average incomes above 1,000 pesos	.26 (.45)	.26 (.43)
	Number of observations	38	38

1/ A six month period elapsed between the two measurements.
2/ Standard deviations in parentheses.

Not all households, nevertheless, have so far invested in their housing following reblocking. In fact, some 34 to 37 percent of families have so far been unable to upgrade their houses to the level existing before reblocking. This observation may not be as pessimistic as it appears at first sight, since averages tend to understate the magnitude of the investment response, perhaps substantially. 1/ It is not yet clear, moreover, how many families have simply been constrained by time and not been able to organize their building response, as opposed to those who, due to resource constraints, may never be able to capitalize on the opportunity. Nor is it known how socio-economic characteristics intersect with the results. But further research on these questions is proceeding. It is evident, however, that improvements are still being made, and that squatter housing markets behave as economically rational entities which value dwelling units in much the same way as formal markets do.

Some measures of changes in housing quality were also sought in Zambia; thus far these informal measures suggest a high level of housing investment and high standards relative to pre-project levels in low income neighborhoods. Walls are constructed of concrete block or burned brick in 89.5 percent of the Matero houses, of concrete block in 92.2 percent of the Lilanda houses, and of sun-dried brick or concrete block in 91.4 percent of the George houses. Roofs are made of asbestos cement in over 95 percent of houses in Matero and Lilanda, and of corrugated iron in over 87 percent of George houses.

1/ It is assumed that progressive development will continue for many over long periods, such that initial measures will understate the improvement which eventually will take place. A testing of this hypothesis over time is built into the evaluation design.

As for satisfaction with plot allocation, over 96 percent of residents in Matero and Lilanda were satisfied with their plots. Regarding project infrastructure, over 71 percent of Lilanda residents thought it was of good quality; over 92 percent believed that, on an absolute scale, the quality of their housing was good, with less than 1 percent thinking it was poor. While these percentages drop somewhat when participants are asked to compare their housing to other options provided by the Lusaka City Council (LCC), still over 75 percent profess to believe that their housing is superior.

The evaluations have also indicated that housing improvement is and ought to be considered an investment as well as a consumption good. As originally conceived in the early 1970s, the shelter programs were intended to increase the consumption of housing rather than concentrating on the packages' investment potential. Housing was and still is considered to be a basic need in relatively short supply in many developing countries. To insure that shelter benefits accrued to low income populations, then, the Tondo upgrading project prohibited resale of developed plots for five years; the action was taken to minimize speculative encroachment on the plots by higher income groups, particularly by absentee landlords and developers. The projects of the FSDVM in El Salvador included a similar stipulation. In addition, in El Salvador and Zambia subletting of units or renting of rooms was also prohibited, partly to discourage absentee landlords and partly to prevent elevated densities in projects and thus avoid compromising health standards. Realization of investment benefits in housing were also limited by the projects' emphasis on small housing materials loans programs as the primary capital market intervention. Such loans represent a limited credit facility for improving dwelling

consumption benefits, but do little to facilitate the achievement of investment objectives.

Observation and evaluation of early generations of Bank-funded urban shelter projects have indeed found housing to be a profitable investment item, potentially constituting a major outlet for private household savings, generating employment at low foreign exchange cost, and yielding a flow of income. 1/ The evaluations have found that leasing is one of the most effective ways of increasing incomes, attracting new sources of finance and hence making or keeping projects affordable. 2/ This finding appears to apply with particular force to participants in the lowest income categories: during the study period the poorest 20 percent of Zambian project participants were deriving about 25 percent of their total incomes from rentals, whereas only 5 percent of total income was being drawn from rentals by the wealthiest 10 percent. In their previous accommodations in El Salvador, participant families in the lowest income deciles were devoting up to 40 percent of their incomes to housing, whilst higher income groups consistently allocated less than 20 percent of their incomes to shelter. Analysis of the differential between these two sets of figures in conjunction with data on house configurations

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1/ The following chapter will discuss the marked differences in propensities to incur housing expenditures between owners and renters. Although the attempt to quantify the determinants of these differences is only now underway, it is obvious that a portion of the difference is accounted for by the construction of additional space or rooms for rent. This finding has been clearly demonstrated for the control areas in Senegal, and appears to be an important factor in other markets as well. In the colonias ilegales of El Salvador, for example, the investment motives can be plainly seen in the fact that a high proportion of houses or parts of them are rented.

2/ This and other means of income-generation through housing (i.e., industrial or commercial use of part of the structure) are almost certainly related to the ability to induce transfers from the extended family and other informal sources to finance the initial construction. This relationship, too, is the subject of current analysis.

and use suggests amongst other things that many poor families, particularly those in colonias ilegales, do view housing as an investment rather than simply as a consumption good and, as outlined above, are willing to solicit funds from relatives to help cover investment costs.

It does not necessarily follow,however, that renters inevitably become the target of owners within projects to sustain an ever-increasing proportion of the owners' housing costs, or that a rentier class is being either created or sustained. Preliminary evidence from the Philippines suggests that, although rents have increased by 11 percent since project initiation, this increase did not keep pace with inflation. Furthermore, the incidence of benefits does not appear to be in the process of being shifted from the intended beneficiaries. There is so far no evidence of richer renter or owner families from non-project areas entering the project, even though concern about long-term affordability of the shelter package has been voiced.

Access to Services

Attempts to improve access to social and other urban services through the projects have so far yielded mixed results, though in many instances environmental quality and integration with urban services have clearly been improved. In El Salvador, land scarcity and cost have compelled projects to be located towards the peripheries of cities. This places them, at least initially, farther from such basic services as health facilities, schools, security lighting, telephones, markets, recreation areas, and public transport, than most mesones. The projects, however, lie no farther from the services than tugurios, and are nearer to them than most colonias ilegales. In the secondary cities of El

Salvador, where all services enumerated are within a half hour's walk from the project, distance is not yet a crucial factor; however, it is a much more important factor in the capital, San Salvador, where the relative locational advantage of the meson is more pronounced.

Project participants benefit particularly from uninterrupted water supply and a private toilet. Residents in the other forms of housing are often obliged to queue for hours for water or have it available only on a restricted basis, and in mesones residents complain of having to share a toilet with as many as 10 other families. Project participants expressed overall satisfaction with services, though less than 20 percent felt that access to medical assistance was sufficient and under 2 percent were satisfied with their access to public transport. Families in mesones and tugurios recorded comparable or higher levels of satisfaction with access to services, whilst those in colonias ilegales felt more pleased with health and transport facilities but less satisfied with access to schools, water and public lighting.

Perhaps the most important consideration in these findings is that a trade-off is involved between improved sanitation and access to a children's playground, on the one hand, and distance from work, particularly for people who are self-employed small traders, on the other. One of the advantages of the meson is that families can easily operate an informal sector business from the house. For example, mothers can operate small stores or carts while being able simultaneously to look after their children. A move to a project site on the periphery, even though it may not represent a very substantial increase in distance, may mean a loss of customers generally clustered near the city center. Nonetheless, it is to be expected that the distance disadvantage of the

project sites with respect to a market where household necessities can be purchased, if in fact it exists, will not persist. 1/ Similarly, it is possible that the dynamism of the communities will generate an eventual reduction in differences in access to places of employment and to transport, such that access to remaining services is also improved.

In Zambia, installation of roads led to better supply conditions for the project areas' small businesses. Demand for transportation has exceeded public supply, prompting the private sector to provide transportation for its employees. There are complaints, however, of insufficient lighting. While satisfaction has been expressed with the water supply system, complaints do arise when interruption in the collective service is caused by certain families' failure to keep up with their payments. Inadequate provisions for the maintenance of garbage collection may have contributed to greater unwillingness of families to pay the charges for all services.

Agency delay in supplying water resulted in the Philippines in only slight improvements to toilet facilities; a larger degree of improvement has been registered in both electrical servicing and drainage. Roadways within project areas have also been greatly upgraded. General satisfaction has been expressed with the reblocking process to date.

Delayed access to services in the Senegal project has been one of four major problems of the Dakar site, which is located some seven miles from the downtown area. Problems still exist with provision of electricity, public toilets, schools, markets, and security arrangements.

1/ The large number of small shops which spring up very quickly in project sites attest that such disadvantage does not, or will not, last for long.

Although 20 businesses conduct operations on the site, more will be required and have been planned. Further discussion of access to services will be found in Chapter III below.

Employment and Income Generation

Projects have also sought to stimulate employment and income generation, which is often viewed as an ancillary justification for projects intended for the low income urban residents. It was anticipated that this stimulation would occur in three ways: (1) through use of hired labor during construction; (2) via induced effects; 1/ and (3) through specific, project-designed employment and business components. The evaluations have found to date that it is the first method which has produced the best results. In El Salvador, housing construction will yield $4.2 million in wage income and 3700 person-years in employment, compared to original estimates of $3.5 million in income and 3500 person-years of work. 2/ Some 667 person-years of labor and over $1 million of wage employment have been generated in the Zambia project, which contains significantly smaller sites and services components than the El Salvador project. Furthermore, as stated, families, chiefly those headed by females, have been able to increase their own incomes by substantial amounts by renting space in their new or upgraded accommodations.

1/ It is hypothesized that: (a) the opportunity to own a better, more secure home will stimulate families to offer more labor, and (b) improvements affecting the project area and particularly its physical accessibility will bring families' labor and the major employment demands of urban areas closer together.

2/ As previously noted, baseline overestimates of use of self and mutual help do not so much challenge the progressive development model as indicate that families often find it rational to hire labor rather than expend their own alone. Seeking remunerative tasks appropriate to their own skills enables them to pay for the skilled labor necessary for efficient housing construction.

In the ongoing programs, statistics collected to date merely reveal that labor is being hired to help complete housing construction. Preliminary data from the Philippines show that the ratio of the number of paid to unpaid person-days is 2:1, with some 30 percent of households relying exclusively upon hired labor for construction, and another 49 percent supplementing their own unpaid labor with that of remunerated workers. It appears that Tondo dwellers also find it rational to hire laborers to participate in construction activities rather than use family labor alone. In Senegal too, it has become clear since the end of 1977 that households prefer to hire small contractors to aid in housebuilding, a principle adopted and developed by the project management since 1979. At the end of 1980, seven small contractors were at work on the site and over a period of six months had completed 118 two-room core houses, for about CFAF 85,000 per dwelling. 1/

There is no clear evidence to date concerning the induced employment and income effects of these projects, or whether they tend to operate principally through the supply or demand sides of the labor market. Some limited evidence exists that a positive impact on labor force participation may be generated: the high proportion of hired labor used in construction (59 percent in El Salvador and roughly two-thirds in the Philippines) suggests that willingness and capacity of at least some households to expend their labor market participation and earnings. 2/ Studies of income and expenditure and affordablity have shown that the housing expenditure/income coefficients are greater for non-labor income

1/ This figure, though a considerable improvement upon those implicit in earlier hopes or expectations, is still relatively high for Senegal. Houses costing this much are unlikely to be affordable to the lower half of the population.

2/ It is in this connection that possible "multiplier" effects on benefits can be expected eventually

than for wage earnings, and greater for the earnings of secondary workers than for those of the household head. Finally, there is some suggestion from studies in El Salvador that labor force participation and earnings, specifically amongst secondary workers, improve for participant families relative to control groups. It will require further estimation, however, and data sets encompassing longer time spans to determine whether or not this describes a stable relationship. Progress in this area is also conditional on the development of reliable models of the household economy, which is currently a top priority research topic of the Bank's Urban and Regional Economics Division (DEDRB). 2/

As for specific employment components, as many as 14 cooperative organizations have been formed in El Salvador to create employment, including a building materials shop, a bakery, and a dress and rug-making craftshop. The first two have proved economically viable, but with little growth potential, whilst the third has encountered serious administrative problems. Because only a small proportion of all project participants are able to work in these organizations, moreover, they have been viewed as an attempt to foster the development of an economic elite and hence have encountered some resistance within the egalitarian ambit of the FSDVM. Other ongoing cooperatives, aimed at savings and loan arrangements or satisfying widespread consumer needs, may prove to have a broader appeal and be more acceptable in future projects.

Out of 100 commercial plots advertised in three areas in the Zambia project, only 31 had been developed and construction is underway on another 13 businesses. The reasons for this relatively low

1/ Emmanuel Jimenez op. cit., has formulated one such model, which has been applied so far to the family decision whether or not to use its own labor in housing construction and may have future relevance in this regard.

response seem to have been fourfold: (1) the absence of business loans to support the components has obliged small enterprises to rely on (limited) external funds for commercial plot development; (2) the high building standards have discouraged many people, especially those without access to materials stores, from participating; (3) the plot locations are remote, making access difficult; and (4) advertising campaigns have been insufficiently detailed to stimulate interest.

In the Philippines program, five different employment generation efforts have been tried. Jobs for some 500 residents were provided in the firms selected for initial construction activities. Because the nature of these jobs was not closely monitored, however, little is known about what kind of work was actually performed, or for how long. Information is also lacking concerning the number of workers who might have been hired for construction industry jobs outside the project area. A second component, a small business loans program, was originally not well publicized and required a rather cumbersome application process. Over 230 loans have nevertheless been granted, mostly to manufacturing and trading activities, and a larger stream of applicants (and workers) is being slowly brought into the program. Cost recovery problems in this loan program have been significant. A third, vocational skills program has been executed but has not led to large-scale job placement. Fourth, a cottage industries program, including shellcraft projects and conversion of garment scraps into toy and pillow stuffings, has proved unmarketable. Popular interest in seeking to stimulate new ventures nevertheless remains high. Finally, the larger-scale commercial/industrial estates, have also failed to attract workers in the numbers projected, and rent payments due on the buildings are lagging. The National

Housing Authority (NHA), which to date has overseen this component, may yet seek technical assistance to help estates operate more efficiently. 1/

Finally, expenditures for food, medicine, and other necessities do not appear to have been significantly affected by participants' housing expenditures. As noted in Table 8 for Santa Ana (El Salvador), a greater increase in per capita spending on housing was registered by participants than by the control group; no observable difference, however, was found between the groups with respect to changes in expenditures on food, medicine, or transport. In the case of Zambia, sufficient plot size has permitted families to satisfy basic needs directly by growing much of their own food, 2/ and residents surveyed believed they could not have satisfied their food needs without having been able to grow crops themselves. Some scholars have claimed that urban agriculture can free households from the vagaries of international food markets, allowing city dwellers to supply some of their own consumption needs and to seek small profits through the sale of surpluses. This practice may also extend to African urban women a measure of autonomy not achievable in other ways.

1/ "Interim Report," Tondo Foreshore Dagat-Dagatan Development Project Report Series 80-1, Research and Analysis Division, National Housing Authority, 1980, pp. 38-44. It has become clear, however, that the range of assistance provided and the portfolio of businesses qualifying for support have to be broad enough to reflect the fact that geographical areas designated for shelter upgrading are not necessarily economic units. Support programs, moreover, should not focus exclusively on micro-scale entrepreneurs nor on new entrepreneurs alone.

2/ It has been estimated by a member of the evaluation team that some 70 percent of the urban poor in Zambia have been able to grow their own staple (maize) and other vegetables. Though activities of this kind may be desirable where feasible, no claims are made for the generalizability of this result. There are certain idiosyncracies in Zambian policy which make this a much more likely result there than elsewhere. These will be discussed briefly in Chapter III.

Table 8: CHANGES IN PER CAPITA EXPENDITURE ON HOUSING, FOOD, MEDICINE, AND TRANSPORT BETWEEN 1976 AND 1980 COMPARISON OF PARTICIPANTS AND CONTROL GROUP, SANTA ANA

	Per Capita Monthly Expenditure of Participants (Colones)			
	1976	1980	Percent Increase	Statistical Comparison With Control Group
Housing	3.95	5.7	+144	Participants have greater increase.
Food	24.6	55.0	+223	No statistical difference between the two groups.
Medicine	0.83	3.03	+365	No statistical difference between the two groups.
Transport	1.14	2.50	+219	No statistical difference between the two groups.

Wider Impacts on Urban Housing Policies and Urban Areas

Turning to the broader impacts of the shelter programs on urban housing policies and on urban areas in the participating countries, perhaps the most important ones have derived from demonstrations that low cost housing can be built and made affordable to the urban poor. As much as 70 percent of the population in a normal upgrading project in Zambia may be classified among the poorest 30 percent of urban households, and even the more complete houses constructed in the Zambian overspill areas cost less than 20 percent as much as the cheapest contractor-built

government housing. Upgrading as a form of progressive development has been fully incorporated into that country's Third National Development Plan, and a new effort in Kalingalinga funded by the German government follows the model developed in the Bank's Lusaka project.

In El Salvador, similarly, some 14 to 18 percent of the third, fourth and fifth income deciles of the total urban population of the nation's secondary cities have been successfully incorporated into the project. Again, even the relatively more elaborate housing constructed in the program costs less than half as much as the cheapest alternatives among other public housing schemes, and as noted above yields a better return on each dollar invested according to cost benefit analyses. One response of the government has been to accept advice to launch a complementary program of upgrading.

The uncommon, and to a degree unexpected, success of the large--but still experimental--Tondo Project, has given rise to replication on a national scale in the Philippines. This marks a very important advance in a country where for the past two decades the numbers of squatter families in cities and towns has increased far faster than the government's capacity to deal with these pressures and where, with no viable alternative at hand, a number of experimental, short-term measures had been applied with little success.

A second set of impacts involves recognition that, while low cost shelter can be provided, the projects make burdensome demands on cities' capacities to provide services to the upgraded or newly developed areas. These demands range from the lengthy process of legitimizing purchases of the land on which squatters stand or projects are to be built, to the actual provision of water, lighting, and sewage and garbage removal services. Some planners suggest that to achieve control projects

must assume broader responsibility, whilst others take the opposite view, saying in effect that projects should be viewed as a series of still more limited interventions in the "urban system." It is quite possible that each view has its place in appropriate circumstances.

Urban projects staff in the World Bank are now typically selecting less complex projects for initial interventions on a country. The experience with problems of cost recovery in the Bank's (and in other) Zambian shelter projects, point to the need in relevant future cases to examine all the factors creating housing subsidies for poorer sectors. The use of a comprehensive public finance framework to evaluate approaches to more equitable housing subsidy policies has been proposed. The Bank has already begun to design interventions which integrate housing programs with improvements in urban utilities and fiscal policies. In Zambia as well, current attempts to improve project cost recovery are reflective of the invigorated drive to handle city management more effectively.

A third type of impact which is related to the second has to do with each project's influence on the nature and direction of urban growth itself. Preliminary results in Zambia indicate that greater social that the private market has responded by providing commutation between ingration of richer and poorer neighborhoods has been attained, with residents cooperating for achievement of mutual objectives. As stated, demand for transportation has been so large in the new developed areas that the private market has responded by providing commutation between project and downtown areas, thus indirectly strengthening access to services. The general sentiment among project officers is that the project has increased political awareness in Zambia without inflaming political tensions, an accomplishment in itself in the once highly-charged and still dynamic atmosphere of the squatter communities.

Comparable social results have been perceived to date in the Philippines project. The Tondo area has clearly benefitted from legitimization of its land claims; the disruptiveness implied in the reblocking efforts has not led to increased social instability; the barangay appears to have been strengthened as a socio-political unit receptive to development efforts; cooperation between families in the project has been evident; and crime in the area, according to informal surveys of police activities, appears to have dropped. There is, however, a danger that social stratification may arise in the formerly quite homogeneous Tondo area as a result of differentials in housing investment which appear to be quite substantial, running in some instances to conspicuous consumption and investment in housing properties. While this consequence may not be economically negative, the social repercussions of the associated wealth differentials may foreshadow future tensions and, perhaps, exclusion of less well-to-do families. This category of impacts will require continued investigation, as has already been proposed for the Philippines.

In sum, the shelter projects have demonstrated a great and somewhat unanticipated diversity of families' preferences, even within affordablity limits, for tenure arrangements and for location, for service levels and for the size and quality of housing units. Evidence from all four projects thus indicates that effective housing strategies must not only be efficient and affordable. They must be desirable to a wide range of consumers in the housing market, including both renters and owners.

CHAPTER TWO

AFFORDABILITY CRITERIA: METHODOLOGICAL AND OPERATIONAL ISSUES

A key issue in determining the appropriateness of urban services to low income populations is whether or not a project is affordable. The concept of affordability in urban development projects is important for two basic reasons. One is that the projects must be "replicable", i.e., they must be able to be repeated by the country with little or no subsidy involved. 1/ The second, and perhaps more important, reason is that urban development projects are generally meant to be accessible to a certain portion of the low-income population. One of the goals of the special evaluation study has been to ascertain whether the projects are reaching the target income groups and to make the appropriate recommendations if they are not.

Affordability can be defined as follows: a certain level of urban services is affordable to a low-income beneficiary household if the amount from monthly income that a household is willing and able to pay for shelter-related expenditures is sufficient to cover the monthly costs of providing these services. In symbols, affordability can be estimated as follows:

$$C \leq aY$$

where C = monthly project cost, 2/

Y = monthly family income, and

a = the proportion of income the family is willing and able to spend on housing.

1/ Replicability does not hinge only on whether or not a project is affordable. Even if it were not and even if a project does not recover its costs, a government may choose to subsidize and still repeat the project. The question then becomes whether the subsidy involved is replicable by the government.

2/ The cost concept here is one of "occupancy costs," and is ideally represented either by rental charge or total housing costs, fully amortized to a monthly basis.

Most of the issues regarding affordability are concerned with examining the parameters "a", "Y" and "C". In particular, it is crucial to determine if they have been measured accurately, and if the assumptions made by the policy makers in performing their calculations are valid. If the assumptions do not hold, it is then important to investigate whether there have been any developments external to the project (such as inflation) which have affected these assumptions or if the discrepancy is due to faulty project design. Evaluating the accuracy of the measurements and the assumptions behind them is a key element in assessing the overall success of a project.

An alternate method of assessing affordability is to monitor certain developments such as population turnover in the project area or the rate of default. This latter method traces indicators of a project's ability to meet affordability criteria. The method discussed above examines in fuller detail the reasons why such developments occur. In order to have a complete evaluation of affordability, both types of investigation should be carried out. This chapter concentrates on the former method, and appends relevant data on turnover and defaulting rates as prescribed by the latter.

Evaluation of the Estimates

Experience to date in the four projects demonstrates that considerable variability exists in the values of "cost, "income" and

"affordability". 1/ Actual monthly project costs, for example, consisting of fixed mortgage or loan repayments and services payments, plus the added amounts invested by families to purchase materials and/or hire labor, vary greatly in terms both of total amounts and the periods over which they are expended. Families meet these costs not only through utilizing differing proportions of their salaries and savings, but also through borrowing (on the terms of which cost schedules also depend in part) and through income transfers from members of the extended family. Design costs, moreover, affect affordability in that they may be based on the minimum amount "required" to build an "acceptable house," or on the amount which families choose to pay for the housing they need or prefer. Costs are also recovered according to disparate payment methods; some families repay gradually, while others offer larger sums at greater intervals. 2/

As for income, programs have differed in terms of how they have regarded earnings, credit, and transfer inflows. In some, such as the Zambia project, income has been defined as comprising solely the earned (labor) income of the household head; in others, the earned (labor) incomes of all family members have been included; and still others have counted total income from all sources of the family. The distinction is important, in that total income can be twice as great on average as the

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1/ This finding strongly questions the propriety of continuing to apply an average figure of 20 to 25 percent of income as an indicator of affordable design "across the board." This, however, does not imply that the practice to date of accepting ratios ranging from 8 to 50 percent is justified. What is suggested instead is the development of a consistent set of definitions (as is done here), comparable data sets based on them and enough calculations to develop "rules of thumb" for applying them in widely varying circumstances.

2/ Designs for recovering project costs are discussed below and compared graphically in Figure 1, on p. 58.

labor income of the household head. 1/ Failure to adjust for or consider these differences could inadvertently lead to the exclusion of families deriving more income from transfers than others. 2/ Income, moreover, fluctuates significantly during the year and over the family life cycle, and these fluctuations influence the perceptions that families hold regarding their access to resources for housing investment. There is also the problem of measurement accuracy. The evaluation program has established that, in addition to the sources of error typically associated with income estimates from socioeconomic surveys, some families distort reported income. Some claim less than actual income, so as not to be considered too well off to join the project, and others exaggerate income, in order not to be considered financial risks.

These findings suggest that willingness to pay for housing is not a fixed proportion of income. Rather, it varies with total family income, type of tenure (ownership vs. renting), the package of services being purchased, perceptions about the investment potential of the shelter package (especially through sub-letting), and certain household

1/ This variation in definitions implies that estimates of "a" in the previous equation will differ by at least a factor of 2, depending on the definition for income that is chosen. Obviously there is a strong case for consistency in this regard.

2/ Such exclusion can be very important in terms both of its overall magnitude and its distribution vis-a-vis the total pool of project participants.

characteristics. 1/ Intersecting these affordability concerns are those of accessibility, wherein selection criteria may work against inclusion of certain groups even if they are at first financially able to participate. Exclusions can occur if project regulations require participants to have certain verifiable kinds of employment, as in the formal sector alone, or mandate participation in house construction, having access to credit, or legal title to property ownership, all of which may limit disproportionately the participation of female-headed or minority households.

Program affordability definitions, based as they are on particular sources of income, have affected the degree to which low income households can participate in the project. Evidence from the evaluations in El Salvador, the Philippines and Senegal shows that a primary source of unearned income for households is interhousehold transfer payments within the extended family. In Santa Ana, El Salvador, for example, recurrent transfers have been found to augment the incomes of roughly one third of the families living within the "informal" housing sector. Transfers, in that city, represent a stable source of nearly 10 percent of household income for the total sample. 2/ Total income, therefore, rather than

1/ It is also hypothesized that willingness to pay will vary with certain city and country characteristics. See Gregory K. Ingram, "Housing Demand in the Developing Metropolis: Estimates from Bogota and Cali, Colombia", Paper prepared for presentation at the Annual Meetings of the Eastern Economic Association, Philadelphia, Pa., April 1981, where Ingram finds an unambiguously lower willingess to pay for housing in Cali, attributable in part to smaller city size (lower land rents) and in part to a milder climate.

2/ The sample consists of 181 participant and 320 control group households in Santa Ana. The information on these families is consistent with that from other surveys undertaken for the evaluation in Sonsonate, El Salvador, and Manila, the Philippines, as well as from an earlier survey in Belo Horizonte, Brazil. See, for example, Anna Maria Sant'Anna, Thomas W. Merrick and Dipak Mazumdar, "Income Distribution and the Economy of the Urban Household: The Case of Belo Horizonte," World Bank Staff Working Paper No. 237, June 1976.

the earnings of primary and/or secondary household members, may be a more useful measure of the sum of a household's disposable resources and inherent purchasing power. This is particularly so because, contrary to earlier assumptions, these flows are apparently regularly received. Hypotheses as to the motivation for the transfers include the proposition that an underlying "contract" exists by which the better-off households provide resources to less well-off households until basic needs criteria are met. These "exchangers" might reverse roles, moreover: transfer givers may become transfer receivers if income or wealth among extended family members is shifted. In general, the motivation for transfers does not seem to be restricted to the conventional utilitarian framework, which would posit a more continuous transfer relationship across the income spectrum; nor does it appear to be based on altruistic motives, since the income differential between givers and receivers is at times very small.

The transfers themselves appear to be sensitive to various features of household composition and employment status, as well as to shifts in individual incomes. Female-headed households receive transfers more frequently and in larger measure than male-headed ones; 1/ households headed by unemployed workers are likewise more apt to receive transfers than those headed by working members. The progressive redistributive aspect of these transfers is seen in the fact that the direction of the net transfer flows is into the lowest

1/ In the Santa Ana sample, 60 percent of female-headed households, as opposed to but 25 percent of male-headed ones, received transfers. These transfers constituted more than 40 percent of income for more than a quarter of female-headed households. See Bamberger, Sae-Hau and Gonzalez-Polio, op. cit., Chapters 6 and 9.

65 percent of the income distribution. The relatively few net givers falling in this lower segment of the population were concentrated between the 40th and 65th percentiles from the bottom, with transfers again flowing toward poorer families. Evidence exists of "earmarking" of these funds for expenditures for basic needs, a further reflection of the "social contract" understanding attached to the transfers between kin-linked households.

The significance of transfers prompts important considerations for policymakers. While these supplements to earnings strongly suggest the utility of basing shelter program selection criteria on total income rather than on labor income alone, they ought not imply that private transfer schemes are substitutes for public programs. 1/ Interhousehold transfers within the extended family will always be limited by the often restricted resources of that extended family; and the risk-pooling ability of even the most extended family will clearly be inferior to that available to the public sector. Not all extended families, moreover, participate in income redistribution among their constituent households; nor is there any assurance that, as social and economic development progresses, such transfer mechanisms will be maintained. The very existence of the transfers and the characteristics of receiving households, nonetheless, provide added demonstration that social equity objectives may not be served by shelter programs if eligibility is based on earnings alone rather than on total income.

1/ There is also the non-trivial problem of distinguishing between "normal" transfers (i.e., those which take place with regularity over extended periods) and exceptional ones directly related to plot purchase and house consolidation. Fortunately the evaluation data permit this distinction to be made with considerable confidence.

It is useful to reflect at this juncture on some of the distributional consequences of adopting the more appropriate total income concept for affordability calculations. In the Santa Ana project in El Salvador the pool of ineligible applicants would have been reduced by 28 percent if the lower bound criterion for selection had been based on total income rather than on earnings. Furthermore, as information presented above suggests, the decision not to consider transfers as income introduces a substantial bias against participation by female-headed households: of the households found ineligible for participation in the sample studied, 75 percent were female headed. 1/

Reconsideration of selection criteria might also be proposed on social efficiency as well as on social equity grounds. If society at large values a unit of basic needs expenditures and/or savings more highly than a unit of other expenditures, then it follows that selection strategies according to earnings levels will make ineligible a significant number of households whose expenditure patterns would be valued more highly than those of the selected participants. Income criteria, on the other hand, would make those previously excluded households eligible and consequently the expected social benefits per expenditure unit would be higher. When one moves beyond selection to project design, moreover, it is clear that both economic and social efficiency can be enhanced by permitting the freest possible rein for individual household behavior and by not

1/ The Foundation administering the project in El Salvador has pointed out that, even with the initial bias, 40 percent of household heads in the project are female, a high percentage relative to other housing programs.

in all respects treating all households equally. For example, the preceding paragraph indicated that not all families (of given characteristics and/or income levels) benefit equally from transfers within the extended family. This social differentiation, and particularly the situation of the least benefitted families, should influence the design of credit programs.

The principal evaluation finding with respect to demand and affordability is that the proportion of household income that a family is willing to devote to housing is not fixed across income levels. The housing consumption ratio (or the average propensity to consume: "a = R/Y") 1/ appears to decline systematically with income, reflecting an income elasticity of demand for housing that is less than one. 2/ The estimation of "a" is of critical importance for project design because of its place in affordability calculations. The accumulating evidence indicates that, whereas income elasticity does not appear to vary by much from situation to situation, the level of the curve (and hence the average propensity to consume) may vary considerably. Thus, on one hand, the estimates of income elasticity for Santa Ana in 1980 are .59 for owners and .70 for renters, compared to .75 and .78, respectively, for Bogota in 1978 and similar values for other cities in the same

1/ Where R is defined as monthly (explicit or implicit) rent.

2/ These findings from El Salvador confirm those of similar studies in the U.S., Korea and Colombia (see Mayo, S.K., "Theory and Estimation of the Economics of Housing Demand," Journal of Urban Economics, 10: 95-116 (1981); and Follain, J., B. Renaud and G.C. Lim, "The Demand for Housing in Developing Countries," Journal of Urban Economics, 7: 313-336 (1980).

and other countries. On the other hand, currently available comparable data sets indicate ranges of values for "a" which may vary by a factor of 2 or more. 1/

Since it is most unlikely that the extreme values have been recorded in the small sample analyzed to date, it may be that the range of values of "a" so far used by World Bank project designers 2/ is defensible. This argument has not, however, been advanced to date. In fact, the calculations used to date are subject to misinterpretation and error because they have frequently been based on socio-economic surveys which have used different definitions of income and housing expenditures. Thus, while two different values for this ratio may be interpreted as implying significant behavioral differences, they may in fact be simply the result of varying definitions and measurements.

Given particularly that the average propensity to consume ("a") is found to vary with tenure type (ownership vs. rental), certain household characteristics (including household size and sex of head), city size and other local and national characteristics, it is imperative that consistent definitions for income and (occupancy) cost are used; that appropriate techniques of data gathering and statistical treatment are employed; and that the data are appropriately stratified. Two significant findings to date are that the appropriate income variable is total household income and that observations for renters should be separated from those for owners.

1/ The currently available evidence is summarized in one exhibit by Ingram (see Gregory K. Ingram, op. cit.)

2/ This ratio has varied from 8 to 50 percent over the past five years or so; however, the bulk of observations has fallen within a range of from 12 to 33 percent.

Empirical results for Santa Ana confirm those for other cities in El Salvador, the Philippines, and Senegal by demonstrating that variations in housing consumption can be partly explained by variations in income variables other than the earnings of the household head. In fact, for the Santa Ana sample, other income sources are allocated to housing expenditures by low income households in larger proportions than is the labor income of the head. 1/ These observations confirm that total income is a more reliable determinant of housing expenditures than earnings alone. As for tenure status, the El Salvador data, some of which are assembled in Table 9, show that owners and renters differ greatly in their allocations of funds to housing, with owners exhibiting a markedly greater average propensity to consume housing than renters. 2/

Evaluation findings thus indicate that considerable care must be taken in estimating the proportion of incomes spent on housing. The definition of income should include the household's total income, as well as accounting for market conditions and the effects of other variables. Then, for a given population, once "a" and "Y" have been established, the range of desired rents or imputed costs ($\hat{R}$) for that

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1/ In the permanent income calculations, the coefficients ranked as follows: other income > labor income of secondary earners > labor income of household head.

2/ These results confirm Ingram's findings for Bogota and Cali, Colombia; see Gregory K. Ingram, "Housing Demand in the Developing Metropolis," op. cit. While calculation of renters' ability to pay for housing is not a focal concern of Bank shelter programs per se, it is a legitimate general concern in the design of flexible alternatives for low-income urban housing. It is thus acknowledged that, although renting may not necessarily be a factor in all current and future Bank projects, consideration of renters' options and constraints in seeking housing does constitute an important area for research into urban populations' capacities (and preferences) in paying for shelter.

Table 9: THE AVERAGE PROPENSITY TO CONSUME
(SANTA ANA, EL SALVADOR)*
OWNERS AND RENTERS, 1980

Housing Expenditure as	Whole Sample**	Renters	Owners
Percentage of wage income of household head	20	17	39
Percent of wage income of family members	12	9	27
Percent of total income	11	9	22

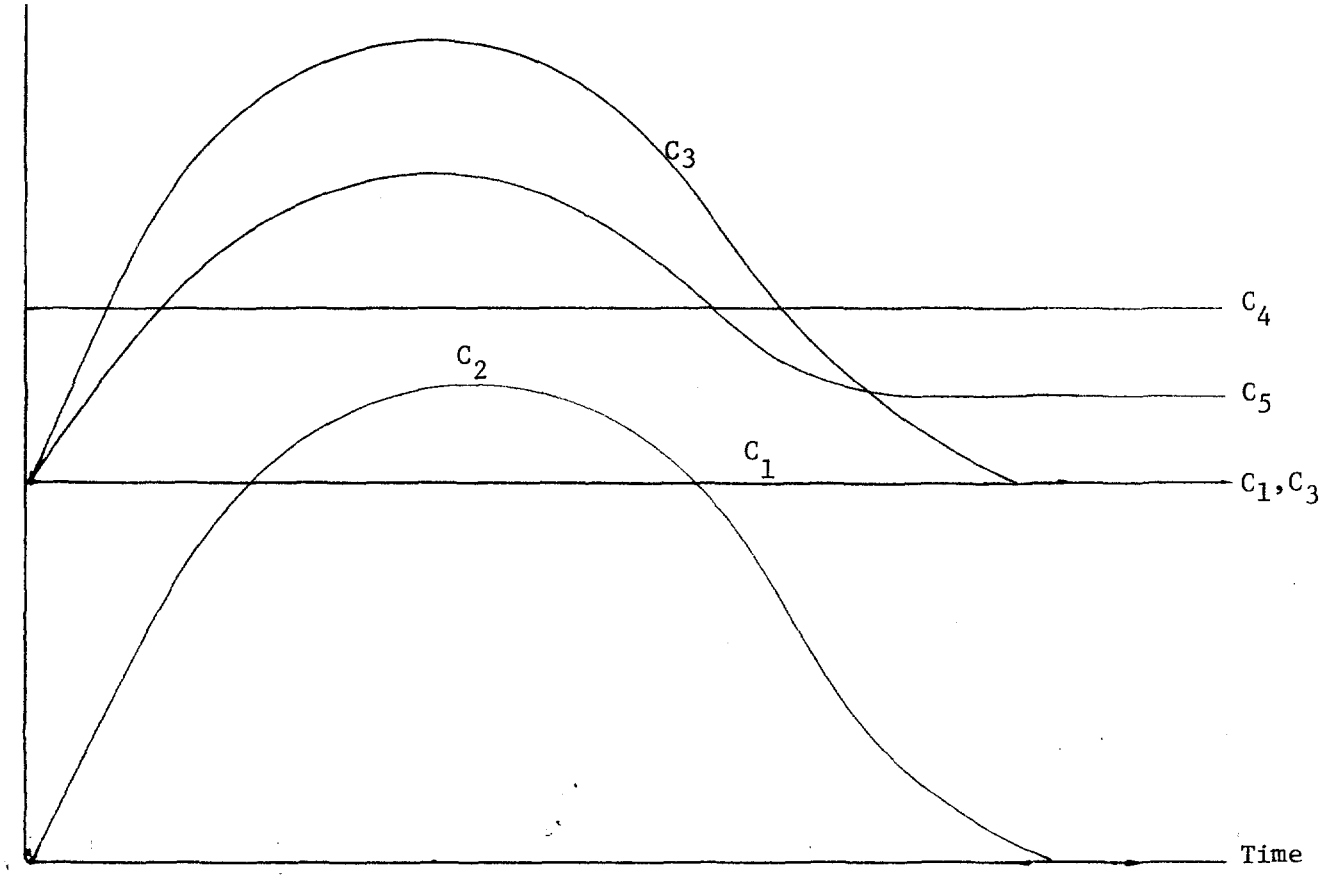
* For Owners, an imputed rental value is used
** Weighted

project should be estimated: $\hat{R} = aY$, where all three variables are vectors. For renters, $\hat{R}$ represents a monthly rental charge; for owners it represents either implicit rent or occupancy costs, where the latter should account for the existence of a credit mechanism to smooth out the expenditure schedule to a constant stream of monthly installments. In both cases, design costs (C) should accommodate, or not exceed, desired rents or occupancy costs (R). Put simply,

$$C \leq R$$

The task for project designers can best be represented graphically as in Figure 1.

FIGURE 1: THE DESIGN OF PROJECT COSTS



where

C_1 = Project Costs (payment for land, services, core house, etc., not including credit components).

C_2 = Added Materials and Labor Costs (still no credit components).

C_3 = Total Costs ($C_1 + C_2$)

C_4 = Amortized Costs ("True" C, with "ideal" credit system fully amortizing total costs to a constant monthly payment).

C_5 = Project Costs (Actual costs, with actual credit scheme that does not fully amortize all costs). 1/

1/ The difference between C_5 and C_4 may be thought of as due to "inadequacies" in design.

It must however be kept in mind that, particularly since "a" varies with so many factors and broadly with some, an average value of "a", such as has been used to date, is at best a very rough guide to approximate project design: it will pose different problems at the same time for a household with adequate income but low "a" and one whose high "a" would, in an unrestricted situation, offset a low income. What is desirable, if achievable, is to develop the capacity to generate for a given population's income distribution an expected "rent" profile. What the data show, particularly at low levels of income, tends to be obscured by the use of averages: some families spend very little on housing, whereas others spend a great deal. As much as possible of this broad range of desired expenditures should be accommodated. Since true measures of demand are dealt with here, the feasibility test should be only that incomes and project credit components should make possible amortization and full repayment of the costs incurred. This analysis argues in favor of projects with very low entry costs, but also with the opportunity to add substantial amounts of (unsubsidized) investment.1/

Here it is important to reflect also on the differences between households in different "rent distributions", e.g., renters vs. owners. Until more is known about these distributions, it would appear to be unwise to follow them strictly. Specifically, families should neither be constrained indefinitely to abide by their relative priorities (their "a's") of the moment, nor forced to adopt new priorities (different "a's") precipitously. For example, in attempting to design a project for a target population

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1/ It is worth noting that this is precisely what the private market provides, albeit -- for low income households -- usually only in illegal or quasi-legal settlements. On the other hand, because these houses are predominantly in quasi-legal settlements with impaired tenure rights, or squatter settlements with at most very tenuous de facto rights, the attendant risks of fines or eviction will suppress housing investment. This will tend to extend the observed range of values of "a" at the lower end.

consisting of large numbers of renting families with appropriate incomes but low (ex ante) "a's", the use of standards based on owners' behavior (i.e., much higher implied "a's") will result in large percentages of these families being unable to participate in the project. 1/ 2/ There are essentially two ways of avoiding this outcome:

1. considering these families as potential new owners and allowing their participation by setting base standards much lower; or
2. considering them as continuing renters by setting standards higher but permiting their participation by providing specific rental components and/or incentives.

It is furthermore necessary to be wary of measures taken at only one time, as there is great variation from year to year. Until reliable measures of permanent income become part of the routine household survey, it is advisable to transfer "good" data (especially estimates of "a") from comparable environments rather than to generate and/or utilize "bad" data from a particular site. 3/

To accomplish this strategy of designing a variety of shelter options fitted to participants' incomes and preferences, four research a areas would require the highest priority in future investigation. These are:

1/ There is evidence of this exclusion from studies of the overspill areas in Zambia. See Sanyal, Valverde, and Bamberger, op. cit.

2/ There would appear to be very little danger, particularly with the flexibility in standards that is advocated above, of forcing the opposite result, i.e., an "underconsumption" of housing by assuming too little change in the "a's".

3/ This point should not be interpreted as indicating that further work to improve estimates is unjustified. To be sure, such work should not be pursued indiscriminantly in a large number of countries; however, reliable and comparable estimates for at least a moderate number of additional sites are needed. Without them there are insufficient baseline data to execute successfully the strategy advocated here.

1. To improve measures of income at all levels.
2. To explore in detail the lowest income ranges (the lowest two or three deciles). What are rental and occupancy costs, and the resulting "a's"? What are the major characteristics associated with high and low values of "a"? Which of these factors may be disregarded -- and which must be attended to -- in project design?
3. Similarly, to explore further the differences between owners and renters.
4. To study carefully how these measures change, if at all, over time.

Indicators of Affordability

Because of the difficulties described in estimating the exact values of "Y," "C" and "a" in the affordability equation, it is also important to document the symptoms of possible affordability problems and then diagnose why they might occur. These symptoms, are not always the consequence of lack of affordability. Rather they are necessary but not sufficient conditions for establishing that a project may not be affordable. They may be caused by other factors.

One possible indicator of affordability problems may be the rate of population turnover in the project. This would only be so, however, if there was evidence that households opt out as a result of financial hardships imposed by the project. Households may leave for

a number of other reasons, including selling to realize a capital gain. The best way to verify the cause of turnover in this case would be to ask households why they are leaving.

Another possible indicator is a relatively high rate of default. Presumably, for households whose payment lags persist, this problem could be manifested in population turnover as the project management evicts them. Again, however, default rates may be caused by other factors. Chief among these may be the unwillingness (or inability) of the government or project agency to collect payments.

The speed of housing consolidation can be severely affected by affordability problems. One must be cautious here, because the projects in question were designed to encourage gradual, step-by-step development which is consistent with the participating households' income streams. Thus, the building rate -- though slow -- may in fact be proper. If, however, the speed of development is so slow that households are actually in a worse position environmentally after entering the project than before (for example, living in partially developed houses), then it is likely that affordability problems exist.

Finally, differences in income and expenditure patterns may be a reflection of affordability problems. Households may, for example, be obliged to cut down on consumption of other necessities, such as food or medicine, in order to meet housing payments.

Evaluation Results: Indicator Studies

To date, it appears that serious affordability problems -- which are defined strictly as the original target population's being

unable and unwilling to pay for the project -- have clearly arisen in only one of the four countries covered by the evaluation. In Senegal, as noted, the lack of clear guidance and technical assistance directed to building homes consistent with the means of the target population appears to have biased construction toward homes larger and more costly than originally envisioned. In addition, delays in project implementation have raised the costs of participation in the project, as inflation -- which especially affects prices of housing materials -- has increased faster than participating families' earning power. The problems hence seem to have stemmed mostly from the "supply side." They have been reflected in a relatively high dropout rate from the project and in lengthy delays in house building and plot occupation, although the situation has improved recently.

For other countries, the findings are much more positive. Participants in the El Salvador sites and services projects have not experienced turnover rates higher than those for the control groups. The record of collections for development charges and loans is extremely satisfactory. Although concern has been expressed about the projects' suitability for the lowest income groups within the targetted population, the project seems to be affordable to present occupants.

The Lusaka project, at first glance, appeared to be a classic case of affordability problems. The rates of default (upwards of 80 percent in some cases) are especially high. Evaluation findings indicate, however, that these high default rates are not significantly related to income. Rather, the problem appears to be due, as noted,

to the lack of an efficient collections system and also of political will on the part of Zambian government leaders. This is a good example of a case where the symptom (default) was present, but bears no apparent direct relation to affordability. 1/

Because the project is still underway, it is perhaps too soon to evaluate the affordability of the Tondo upgrading project in the Philippines. Based on its surveys, nevertheless, the evaluation team has cautioned that project designers may have underestimated the costs to participating families by concentrating solely on public sector development charges and ignoring private capital costs in the affordability calculations. The team has also warned that the original assumption, that 20 percent of household income should be devoted to housing, may not be valid. For the poorest Tondo families, income-expenditure surveys reveal that the amount available for housing is significantly lower, and that increasing it would impinge on households' ability to afford other necessities. However, turnover in the project has not exceeded the low rate of four percent; nor, as stated above, have real rental rates within the project increased. A full documentation of the interim symptoms of affordability -- population turnover, rate of default, etc. -- is now available, and is projected to be updated through the project's completion. 2/

1/ See Richard Martin, "Cost Recovery: Management, Affordability, and Preliminary Results of the Lusaka Upgrading Project," cited in Sanyal, Valverde, and Bamberger, op. cit., Chapter 9.

2/ See "Preliminary Estimates of Project Turnvoer," op. cit., and "The Reblocking Process: An Integrated Report," Report Series 80-7, Tondo Foreshore Dagat-Dagatan Development Project, RAD, National Housing Authority, Philippines, 1980.

It is well, in conclusion, to place affordability concerns in proper perspective. Neither of the methods discussed for assessing project affordability are definitive. They are best thought of as guides to translating estimations of affordable housing into project designs which can stimulate the construction of new and improved housing amongst the target populations. The record of efficiency achievement to date in pursuit of this objective is explored in the following chapter.

CHAPTER THREE

THE EFFICIENCY OF PROJECT IMPLEMENTATION

Although differences exist amongst the goals and operational procedures of the four shelter programs studied, there is sufficient comparability among them to warrant preliminary investigation of their efficiency according to a single set of criteria. Eight project aspects appear to be of particular financial, economic and social importance in all four cases: (1) project planning and design; (2) selection of project beneficiaries; (3) construction methods; (4) materials loan programs; (5) housing completion and occupancy; (6) maintenance of housing and infrastructure; (7) cost recovery; and (8) community participation. A number of criteria appear to be useful in gauging the efficiency of these components, including speed of implementation, cost, quality (of housing or services), accessibility (to target populations), replicability, and flexibility of implementation.

As will be noted below, there are tradeoffs between the evaluative criteria. Higher quality of house construction, on one hand, may involve both higher costs and less accessibility to low-income target groups; greater flexibility in selection procedures, on the other, may increase target group accessibility but raise costs of identifying appropriate families. These sometimes conflicting objectives have to be reconciled according to a crude relative weighting of each, as determined by project management and other policymakers, and no precise model is applicable. The discussion below briefly summarizes the constraints and options involved in applying the criteria to each project aspect, and then reports on initial results from the four projects in that sphere.

Project Planning and Design

Regarding project planning and design, the speed of implementation can affect the cost of both house construction and services provision. If progressive development proceeds too slowly, on the one hand, administrative costs per plot will rise and intended benefits will be delayed and possibly reduced. On the other hand, pressure to effect house construction too rapidly can result in affordability problems for individual families. Project designers must similarly gauge accurately the relationships between design standards and housing costs. High standards for quality housing are inexorably linked to higher costs. However, as has been pointed out, certain reductions in capital costs may produce only illusory gain, being offset (or more than offset) by increases in operating and maintenance costs. Alternatively, though costs can sometimes be reduced by the use of domestic rather than imported materials, families may prefer to build with more expensive materials and recoup the additional outlays through renting or eventual re-sale of their housing. As for accessibility, high design standards may limit participation by low income families. Furthermore, if methods require designs to be rigidly executed, they may severely limit the flexibility of households' responses. Complex designs, for example, can render replicability of the housing program excessively costly and difficult, especially if materials and equipment requirements are inflexible.

The evaluation teams have so far unearthed no evidence to the effect that, on balance, design standards have been intolerably high; as noted, studies of turnover do not reveal a higher than normal incidence of departure from project sites amongst the poorer participants. 1/ Two facts do, however, seem clear: the first is that scope remains for

1/ It has not yet been possible to analyze whether present levels of project costs and standards systematically contribute to under-representation of lower income households in the first instance.

reducing entry costs in at least some of the projects or sub-projects in each program in ways which will facilitate accessibility for poorer households without adverse consequences for others or for overall physical results; the second is that, even at unchanged cost levels, some changes in the mix of components and services offered in housing packages are called for. In particular, the evaluation program has recorded that the observed projects have to a degree placed too high a premium on services levels; at the same time, they appear not to have emphasized housing space enough for some families. Although families in El Salvador have on the whole been satisfied with FSDVM housing design features, for example, demand studies have revealed that they also view favorably the larger lot sizes (and lower services levels) of colonias ilegales if this option is available in a particular city (Table 10 provides some crude information to this effect). 1/ Similarly in the Philippines, where lot sizes in Tondo have been constricted by existing densities, families have responded following the reblocking process by building additional floors to increase living space; at the same time, improved services, especially toilet facilities, have as mentioned been less highly valued than anticipated by upgrading families.

In Zambia, plot sizes have been sufficiently large to satisfy families. However, since they have discovered that they can seize the opportunity of renting out space despite project prohibitions, even larger lots would apparently have been preferred. Here, however, several factors are at work: First, as in a number of other African countries, participants are not charged for land. 2/ This feature helps to account

1/ In some interior cities of El Salvador lower population densities, combined with good access to well water, have made the larger plots and fewer services of the colonias more attractive than the options designed by the FSDVM based on its earlier experience in the larger cities. Additional details are available in as yet unpublished evaluation studies.

2/ National land policy in Zambia goes even further. It assigns land a value of zero, and attempts to proscribe trading in land; thus, if a participants wishes to sell his house, he may do so legally, but the sales price is supposed to capture only the value of the structure, and efforts are made to regulate this process.

Table 10: SATISFACTION WITH HOUSE DESIGN AND ACCESS TO SERVICES. A COMPARISON OF THE FSDVM PROJECT, MESONES AND COLONIAS ILEGALES

Sonsonate, 1979

	PROPORTION OF FAMILIES WHO ARE SATISFIED		
	FSDVM Project	Mesones	Colonias Ilegales
Area of Lot	79.5	n.a.	92
House Area	74.4	51.8	72
Materials	89.2	32.5	60
Toilet	66.5	48.2	22
Drinking Water	89.9	61.4	30
Access to Medical Services	55.7	79.5	42
Access to Schools	90	80	50
Public Lighting	5.7	94.4	34.7
Public Transport	56.3	84.3	24
Garbage Collection	15.9	17.6	2

Source: FSDVM Socio-Economic Survey of Sonsonate, 1979.

for the preference for large plots of both planners and participants. The consequences are potentially serious both for project costs and replicability, and for the allocation of a scarce factor of production -- land. Two additional features are the primitive status of the building materials industry and the excess demand for good housing in Zambia. These help to explain Zambian families' preferences for constructing houses made of imported rather than domestic materials: trading off added costs for higher quality, and recouping those added costs by renting out space. In these circumstances, efforts to encourage participants to use local materials (e.g., by producing their own soil-cement blocks), thereby reducing costs and potentially increasing long term efficiency, have so far lacked appeal. In Senegal, a similar desire for additional space rather than highly serviced facilities has been demonstrated by the low income control groups in Guediawaye and Grand Yoff, who build in precisely this fashion; as for project families, the relatively expensive standard designs were presented in such a way that the time and monetary costs to families of obtaining approval for simpler designs were both perceived to be substantial. This belief may well have led to families' accepting higher than desired housing standards as their objectives.

Finally, as noted above, problems in inter-agency coordination and services delivery have frequently hindered the processes of project implementation. Delays in land acquisition and preparation held up construction in the El Salvador, Senegal and Philippines programs; and, in an inflationary situation, the resulting time overruns led to higher materials costs. Once a certain momentum has been built up, however, and with the exception of Senegal, the programs have operated relatively smoothly and encountered few additional problems.

These findings point once more to the advisability of providing a wider range of building options to participant families than hitherto considered. Households appear to demand substantially different combinations of plot size, contractor construction, and service facilities; they also wish to have the option of adding to or further upgrading their homes, and of renting out space. Despite the counter-arguments of some national housing planners, it appears that scaled-down housing standards are a precondition for affordable (and still desirable) housing for low income populations. Rental arrangements, too, appear to be both desirable and feasible for target populations, although strict enforcement of cost recovery is mandatory in order to avoid the creation or undue subsidy of rentier groups within the projects.

Selection of Project Beneficiaries

The handling of selection procedures also affects the efficiency of sites and services programs. 1/ Project managers are typically concerned about both the "upper" and the "lower" income bounds to be applied to selections from the applicant pool. Care must be taken, on the one hand, to avoid including too many high income families in the project, some of whom may attempt to falsify income statistics in order to participate. On the other hand, there is a clear need to ensure that low income families can afford project costs. The speed of the selection process itself also involves trade-offs. If the screening program takes too long, households may become dissatisfied and withdraw from consideration. If it is carried out too rapidly, more selection "mistakes" are likely to occur.

While computerizing the selection process may accelerate matters and facilitate project replication, such a step can be both costly in itself and also potentially biased against those cases which require

1/ This observation pertains almost exclusively to the sites and services option; since area upgrading projects deal with pre-existing populations, explicit selection does not occur within these projects.

individual consideration, i.e., the high risk households. Finally, as discussed in the previous chapter, restricted definitions of income may lead to biased selection standards. If selection is based just on earned income, rather than total income from all sources, projects may exclude large numbers of households which, by virtue of the combined resources of their extended families, can afford the programs. Furthermore, the criterion will be biased against female-headed households, as they rely more on transfer payments from kin than do male-headed households. It must be noted, however, that verification of the true incomes of applicants, involving visits to applicants' homes, would be a very costly (quite possibly an unacceptably costly) procedure, in terms both of time and money. Thus, statistical sampling procedures will most likely have to be used and the inherent errors accepted.

Whilst the income distributions within projects do seem to be affected by selection processes, sometimes lengthy delays in the processing of applications apart, the evaluations have not discovered seriously anomalous situations in any of the four projects. An acceptable range of income groups appears to have been incorporated into the programs. 1/ Some problems have arisen with under-reporting of incomes in the Dakar project, but a more general finding has been that some families, particularly female-headed households and those employed in the informal sector, initially suffered from a measure of unintended discrimination in the selection stage, due to problems in verifying income

1/ In El Salvador and Zambia, where the genuine concern of project administrations to reach the lower income groups pre-dates any involvement by international agencies such as the World Bank, the selection procedures appear to have had a particularly good record of selecting families from within prescribed income ranges.

from nonformal sources. 1/ On the other hand, a number of the El Salvador sub-projects have gone so far as to include higher proportions of female-headed families than exist in the population at large. All four country projects have in fact included families with a greater range of incomes (and more diverse sources of those incomes) than had been foreseen. Consequently, future programming efforts may well have to come to grips with assessing both household and extra-household incomes (and characteristics) before determining an appropriate range of income bounds for project participation, rather than necessarily modifying selection processes per se. 2/

Construction Methods

The projects have placed a substantial premium on identifying those construction methods which would reduce costs and contribute to efficient implementation processes. Among these are: construction through mutual help; self help in which families hire a contractor; self help in which families themselves contract, hire and supervise individual workers; self help in which families build their homes themselves; and project-provided, contractor-built housing. Each of these methods involves different rates of construction, different costs, and different implications for housing quality, replicability, and accessibility; and the number of trade-offs involved is considerable. The mutual help method may be

1/ This discrimination has been corrected insofar as possible in Senegal.

2/ There has also been a continuing debate as to whether participation in mutual help construction should be a requirement for participation in projects. Whilst the logic of the FSDVM program in El Salvador is based on community participation, there is strong evidence that a substantial number of otherwise eligible families may be excluded by this requirement. This is a difficult, and largely country-specific, issue which nevertheless deserves further consideration.

slower (though not necessarily less expensive) than certain self-help methods, which may in turn be slower (but cheaper) than contractor construction; mutual help may also indirectly discourage participation by female-headed households, as those women are expected (but might be less inclined) to participate in construction procedures. 1/ The scheduled timing for self and mutual help methods can either attract or discourage families with varying formal and informal work schedules; thus, scheduling is a serious issue, and as much flexibility as possible in building methods is a desirable feature. Similarly, housing quality will be affected by the amounts of supervision or technical assistance provided by project authorities. Use of skilled builders can raise project costs in the short run; however, their participation in project design and execution might also contribute to replicable plans which scale down costs over time.

As already stated, family-based construction methods using progressive development have proved viable in sites and services and upgrading projects. It has been estimated that certain families in El Salvador have saved up to 30 percent of costs by building their own houses rather than hiring contractors; and these houses have been judged to be of comparable quality to those constructed by skilled builders. Combinations of self and mutual help can likewise produce housing of acceptable quality at costs similar to or lower than those charged by contractors. Yet such methods can absorb a great amount of time -- particularly supervision time and elapsed time. In El Salvador the mutual help phase of the first projects, while producing good results,

1/ It has also been pointed out that single-adult households -- and not just female-headed households -- might be a more apt description in explaining differential levels of mutual-help participation. See Bamberger, Sae-Hau and Gonzalez-Polio, op. cit.,Chapter 10.

lasted more than 40 weeks, since work was carried out only on weekends. The original design also underestimated the opportunity costs of labor, and it found out that skilled workers and other small businessmen could have been much more profitably employed elsewhere during these work periods. 1/ "Sweat equity" does not appear to have been available in the relatively abundant quantities assumed; whereas financial resources, especially income transfers from relatives, appear to have been much more readily available than anticipated. As many as 51 percent of households in the Santa Ana and Sonsonate projects used hired labor alone to bring their core housing up to habitable levels (see Table 11 for a comparison of housing construction methods in El Salvador).

These findings imply that "market solutions" for housing construction, such as seeking income transfers, hiring labor, and "balancing accounts" through the household's own greater labor force participation and/or rental of part of the structure, ought to be considered in estimating housing costs and other aspects of project design in future shelter programs. Pure self-help, it seems, should be envisioned as only one of a set of diverse methods employable for efficient housing construction and consolidation. As the El Salvador data demonstrates, the amounts of self construction undertaken will depend, for each household, on the productivity and the opportunity costs of family members engaging in the associated activities -- and, hence, inter alia, upon the level and sources of household income and its members' skills in construction.

1/ What is more, contrary to what one might expect from experience in developed countries where formal sector employment predominates, for the majority of participants in the El Salvador projects evaluated weekends were the least favorable times to participate in mutual help as this was when their (informal sector) earnings were typically the highest.

Table 11: HOUSING CONSTRUCTION METHODS IN EL SALVADOR: SANTA ANA AND SONSONATE

	(1) Hired Labor Only	(2) Unpaid Family Labor Only 1/	(3) Hired and Unpaid Family Labor	Total
Proportion of Participants	.51	.27	.21	1.00
Average Number of Person-days of Hired Labor	46.0	-	33.2	42.4
Average Weekly Wage (in Colones)	124.	120.	155.	130.
Average Number of Household Members with Construction Experience	.03	.41	.12	.16
Average Number of Person-days of Unpaid Labor	-	44.3	45.0	44.6
Weekly Non-Wage Income	14.	9.	6.	10.8

1/ Regression analysis indicates that wage rate and proxy variables (such as technical experience, number of adults between ages 17 and 60, and the male/female mix within a household) best measure a household's ability to build its own dwelling. There is also some evidence that households who use self-help labor have lower elasticities of housing demand than others.

Source: FSDVM data.

Materials Loans Programs

In the projects under consideration, loans for housing construction have been limited to materials credits. Efficiency evaluations must thus gauge if the materials thereby purchased have been appropriate and affordable for housing consolidation and have been distributed speedily enough to participants, and also whether other forms of housing loans might have been advisable. The credits have not infrequently been tied to purchase of materials from project stores. Though they are designed to compensate for supply failures and/or to capture for participants the savings inherent in bulk purchases, there are a number of potentially serious problems with newly-created project stores: They may have high administrative costs, encourage overly high building standards, and fail to recommend the use of local materials which, though acceptable for use, do not fall under the control of the stores. Whilst sheer mechanical replicability may appear to be facilitated through this relatively simple "tied" credit option, the technique can be compromised if the materials are too costly in themselves, or too difficult to acquire and distribute.

Despite such difficulties it appears that materials loans have been instrumental in enabling households to undertake housing consolidation, but that the administration of materials stores has run into difficulties. In Zambia, for example, problems in stocking on-site stores led to considerable delays in distributing materials, with families queuing for as many as 20 hours per week to receive items. Thefts of materials have also occurred. Furthermore, restricting purchases of materials to project stores may have compelled families to buy higher quality supplies than necessary or desired. It appears that in the El

Pepeto and San Jose del Pino projects in El Salvador materials could have been purchased directly at wholesale prices, thus reducing or obliterating the expected cost-reducing advantages of the stores' bulk purchases. The project stores in the Philippines, moreover, did not stock the cement, hollow blocks, or steel bars most desired by households; Tondo dwellers on the whole appear to have found cheaper (yet acceptable quality) materials elsewhere, with the Housing Materials Loans Program (HMLP) providing only 25 percent of beneficiaries with construction materials. In Zambia, where materials shortages exist and alternatives are seldom readily and cheaply available in the market, the stores constituted an imperfect substitute, and families still were frequently unable to obtain the types of supplies requested.

In addition, the credit programs themselves have been deficient in certain respects. The maximum sizes of loans available, for example, have been insufficient to cover the requirements of many households seeking credit to finance construction. Total funds available through the programs, moreover, have sometimes been exhausted before all requests have been met. 1/ Loan funds have had to be increased substantially in the Dakar program to meet requests. The 100 Kwacha loans offered to Zambian households contributed only marginally to meeting the rising costs of upgrading their homes, and after the original allocation had

1/ Use of the term "demand" has been avoided up to this point, for very little is known about it. This was true when these projects were designed, and though the research program has contributed materially to great advances in the understanding of the demand for housing in recent years, the (derived) demand for credit remains little studied to date. Research on this issue is commencing; and information on repayments is just beginning to be received through the evaluation program, which may make possible some advance on this important theoretical and empirical issue.

been taken up they were discontinued. In the Philippines the total loan funds have not yet been exhausted, but households have been obliged to seek funds beyond the 3500-peso maximum loanable by the HMLP.

In the face of grossly inadequate information on demand, it is understandable that project designers were loathe to contribute to families' overextending themselves financially and sought to avoid this outcome by restricting both the size of individual loans and the total funds available. It appears, however, that these restrictions have had their own undesired effects on some participants. 1/

Studies to date have concluded that families should be permitted flexibility in seeking housing materials "in the market," possibly excepting countries such as Zambia in which materials are in acutely short supply. The empirical fact that project families hire labor for a substantial proportion of housing construction argues for consideration of more general lending -- covering as well the acquisition of skilled building help where appropriate. Very little evidence exists as yet in the economic, financial, or even the sociological literature which may offer guidance as to the forms and amounts in which such credit might appropriately be extended. Some scholars contend, however, that the substitutability of labor for materials in housing construction may itself be limited, 2/ which implies that the tying of credit to

1/ Furthermore, the evaluation's findings about transfers indicate that the two types of restriction may be incompatible. That is, since families (which are alike in other respects) have very different access to transfers, they must be supposed to have commensurately different demands for credit. If this is so, a given loan fund (whether or not "adequate" in itself) will not be optimally allocated amongst families by "rationing" a small amount to each.

2/ The evaluation findings are so far consistent with this assertion. See Jimenez, op. cit.

materials generally -- as opposed to tying it to the purchase of particular materials from particular sources -- may not constitute an added constraint of great consequence. 1/ It is evident that research into both credit demands and the responses of credit markets is a prime necessity. Such studies, which are presently getting underway, will stress investigation of informal credit markets, particularly their linkages with household expenditures for basic needs. This should enable them to contribute to improving the design of urban projects concerned with shelter.

Housing Completion and Occupancy

Occupancy of plots in sites and services projects is another factor to be assessed in determining the efficiency of project implementation. Unless sites are occupied relatively rapidly, costs can escalate through added interest incurred during construction, through the real effects of inflation, and through the expense for families of maintaining one residence while another is being built. 2/ Arguments for replicability

1/ The administrative mechanism for ensuring this result may, however, pose its own restrictions and added costs.

2/ The initial sites and services projects financed by the Bank expected that families would quickly occupy vacant tracts of land. The initial structures would be temporary, made of light and easily transportable materials, and would eventually be replaced by more permanent structures. It did not take many experiences with delays, as for example in the Senegal project and some El Salvador subprojects, to bring about a realization that sites and services lot occupancy did not inevitably follow this pattern. Accuracy in design was required to "match" the demands of populations on the verge (or in need) of moving; distances between old residence and new plots were frequently too great to enable an easy transition; and the materials required for temporary structures at the site were not always economically available. In short, it could not be assumed that all, or even the majority of, families could move quickly to the site and there commence a process of progressive development. Some countries, furthermore, formally discouraged the construction of temporary structures.

are thus likely to be vitiated by slow inhabitation of project areas, as construction delays may cause affordability problems for poorer families and induce project managers to include more high income households than originally desired in order to achieve full occupancy within a reasonable period.

To date, land acquisition and installation of basic services have proved to be the most serious hindrances to speedy project implementation in the early (infrastructure) stages. Whether due to difficulties in alienating public land, as in Zambia, or finding affordable and accessible terrain for lots, as in El Salvador, project managers have had to struggle literally for years to obtain land entitlement rights. These delays, and others outside project control, have exacerbated the already difficult problems of coordination with other agencies responsible for water, lighting, and other basic services. The National Housing Authority in the Philippines is obliged to negotiate with no less than 11 other agencies in order to deliver inputs in a mutually complementary fashion.

Though land acquisition problems will by definition have been resolved, delays in the installation and effective functioning of services, continue to plague implementation and may delay house consolidation and plot occupancy. 1/ Families in turn are confronted with deciding when, how and in what sequence to construct the house and move to the plot. If they can move immediately to the plot and there commence construction an

1/ This paragraph in effect encapsulates the frustrations experienced in the Senegal project.

individual problem will not exist. 1/ Several factors may however delay this move, forcing families into a situation where they are simultaneously paying rent on their current residence and charges on their new plot. The two principal factors which may be operating are non-functioning services and absence of a habitable structure on the site. Additional factors which serve to delay the creation of a habitable structure, and hence the move, are distance of the new site from the old (and the work place) and inadequate credit. 2/ Bank projects designers responded quickly to this situation and its potential repetition by adding some measure of core construction to most projects. Doubtless this method is one way of effecting earlier occupancy and avoiding certain costs; however, it also adds, sometimes substantially, to direct costs, and is generally a less flexible option. An urgent need of the lending program is to evaluate the trade-offs between this and more flexible approaches which may be sustained by more innovative credit mechanisms.

Maintenance of Housing and Infrastructure

Maintenance of infrastructural and housing facilities is another aspect of projects which must be designed and managed efficiently. Because these project features are often the responsibility of over-burdened and under-funded local government agencies, there is

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1/ A social problem, however, may still exist. If significant numbers of families, having moved to new sites, fail to build permanent structures within a reasonable period it may be difficult to obtain and sustain policymakers' support for the sites and services option.

2/ Another way of viewing this trade-off is that, if a family is forced into this situation and chooses nevertheless to construct a house using its own labor, the cost of this self-help method should include the cost of rent during the construction period -- which, in El Salvador, has run up to six months. This added cost may also be viewed as the opportunity cost of adding a larger or more flexible credit component or core house component.

potentially a problem of inadequate maintenance. However, since maintenance often depends upon, and in turn can affect, project cost recovery and active community participation, 1/ some flexibility does exist for project planners to devise long-term financial (and social) solutions for maintenance with city managers and community groups.

A related issue deals with the nature of maintenance costs. If these costs are too high, whether because of low capital investment or poor design, the benefits of low cost housing can be rather quickly dissipated; if design standards are kept unreasonably low and do not facilitate maintenance, project facilities will decline in quality. Though it is not entirely clear how the assignment of responsibility for maintenance can affect access to projects for certain groups (such as higher risk households with less steady incomes), it is apparent that inadequate planning for maintenance can affect government decisions regarding replicability. Projects which have not "paid for themselves" in terms both of cost recovery and continued social satisfaction are not likely to be reproduced on a larger scale.

Given that these evaluated projects have only been installed for two years or less, definitive statements on project maintenance cannot be offered. Yet problems with garbage collection have already arisen in the Lusaka project. At first view, these appeared to be due to difficulties in servicing the garbage trucks, and to the resulting deterioration of vehicles, which led to dissatisfaction with the trash collection services and negatively affected cost repayments from families.

1/ This process has been observed in Zambia.

On further investigation it appears that, although the foregoing factors were indeed central to the issue, they did not exhaust the analysis. In the attempt to ascertain how adequate maintenance of the trucks could be arranged and paid for, it was found that families generally had additional questions about the services: e.g., why weren't collections made closer to the houses? These doubts led to other questions about the adequacy of the general design of the project, including capacities of internal roads, and hence again to overall costs and charges. Project experience and evaluation have verified that these various features -- design, maintenance, cost recovery and community participation -- are inextricably related and, though it is difficult, better means of dealing with them simultaneously must be sought. In this connection, it is noteworthy that in the same project consideration has been given to vesting the responsibility for maintenance of communal standpipes, where similar problems have been experienced, in the community groups themselves. 1/

The FSDVM in El Salvador has likewise oriented participants toward accepting responsibility for keeping up the condition of certain community facilities. It has done so for some time, and has a record of considerable success. Because nearly all project services will require maintenance, planners will have to take additional steps in the future to ensure that both cities and their inhabitants are financially and institutionally prepared to continue maintaining facilities over time -- especially in the light of cost recovery problems already encountered.

1/ It has also been suggested that, if a separate garbage collection fee existed, garbage collection services might be improved. The adequacy of service would then affect -- and be affected by -- payment of this fee alone, and not the entire cost recovery effort.

Cost Recovery

Given the desirable scope and scale of urban shelter programs, cost recovery has been deemed a crucial feature of project design since the inception of these programs, because the inability to collect payments would doubtless prejudice projects' replicability. Delays and/or dissatisfaction with project services can make cost recovery more difficult; failure to recoup payments may in turn raise the costs of the project for executing agencies, and also for those families in the program who do pay for services. As noted, government reluctance to make defaulters pay may be a form of disguised subsidy to participants. Though such a tactic may permit lower income families to live in housing projects they might otherwise be unable to afford, that has not been the inevitable result. Subsidized programs typically have severely limited supply capacities; and, in such situations where output is artificially restricted, higher income families have proved very adept in capturing the "rationed" benefits. In any case, the costs will eventually have to be met, either directly or indirectly by others. Because the causes of default are complex - involving affordability concerns, the adequacy of administrative machinery and the roles of political pressure groups -- it is difficult to isolate the contributions of individual factors to cost recovery problems. 1/

As has been stated, cost recovery problems have in fact arisen in the Lusaka program: more than 50 percent of families in some upgrading projects are in arrears, and some households do not appear to have paid

1/ It will be necessary in future analyses to distinguish between "lack of collection" and "inefficient collection" from "late payment "collections." Only the latter has been attempted here, given available data.

anything at all. Furthermore, it has been possible in this instance to clarify causes to a considerable extent. The initial assumption was that affordability problems must have contributed to this result; however, evaluation studies have established that this is not the case. A more direct factor in the slow rate of collections appears to be weak political will on the part of the Zambian United National Independence Party (UNIP) to seek repayments. While the UNIP did help win acceptance of the project, including the potentially volatile transfer of some families to overspill areas, it stopped short of effectively prompting the communities to repay the costs of development to the Lusaka City Council (LCC), the project's administrative agency. As a result, the role of the LCC in the collections process was somewhat ambiguous at the start. More recently, however, it has taken steps to recover costs more systematically. Hindering efforts still is the absence of an efficient recordkeeping system to maintain up-to-date information on defaulters and amounts owed, as well as the lack of a flexible mechanism for collecting payments. Families, moreover, do not appear to have been kept well informed of repayment schedules or of the purposes for which the money is to be used.1/

The FSDVM program offers a counter example. Because of its non-profit status, which requires it to achieve cost recovery in order to remain operative, as well as its programmatic inculcation of social responsibility as a feature of project participation, the Foundation in El Salvador has achieved an excellent repayment record for its shelter

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1/ Additional details on project collection efforts and on the constraints on the LCC's handling of arrearages can be found in Sanyal, Valverde and Bamberger, op. cit., Chapters 9 and 10.

program. Through material help and collaboration on important community matters, families are brought to understand that repayments are necessary to the survival of project facilities. The FSDVM effectively uses a phalanx of incentives and penalties to achieve cost recovery. These have included the support of community organizations in return for their assistance in the collection of payments, careful screening procedures to select participants able to pay project fees, and the use of lawyers to visit families which have fallen more than three months behind in their payments, and visibly press them to pay. Eviction, though very seldom used, is still an option open to the Foundation. Technical factors, including a computerized system for monitoring outstanding debts, and the fact that the FSDVM is small enough to supervise financial matters closely, add to its success in effecting repayment.

These experiences reveal the usefulness of designing projects in a local public finance context, where the ability to operate and maintain infrastructure and services can be directly related to the resulting benefits, as well as to collections or cost recovery. Collection mechanisms ought to be designed with community participation in mind from a project's outset, with regular, relatively convenient payment schedules explained thoroughly. Participants must be made aware of the direct relationships between installment payments and loan repayments on the one hand, and goods and services being received on the other, as well as what the consequences of default will be, both for themselves and for the project as a whole. Methods for improving cost recovery performance, which have been developed in other Bank-financed projects, have included discounts

for early repayment and the withholding of consolidation loans from families defaulting on lot installments. Other means of collection, based on property values, have been used and could be extended. Further, it is highly desirable that the concept of full cost recovery installment payments, loan repayments, user charges and property taxes, etc. be extended. The objective should be that all projects should generate at least a modest surplus. This will aid replicability in two ways: by providing the necessary funding for continued investment; and by breaking down political resistance and eventually generating positive support.

Finally, community participation in project implementation, and particularly design, can have decided effects on achieving objectives, including maintenance and cost recovery objectives, efficiently. Although popular support and consultation may be sine qua non for eliminating resistance to project interventions, lengthy discussion of procedures or training of project promotors in organizational skills can delay implementation schedules substantially. In some instances, project acceptability can be improved and costs reduced if community groups accept direct responsibility for facilities' operation and maintenance; however, devising new administrative structures and procedures for such purposes can itself be costly. Effective community participation is itself a goal of certain projects, as for example those of the FSDVM in El Salvador. Hence, some project managers may be willing to invest more resources in developing community institutions than others who are more committed to attaining the physical goals of projects.

Community participation should not, however, be conceptualized as an indivisible, programmatic feature of project implementation. Some community institutions may not be representative of project populations as a whole, and those claiming to be so may in effect hinder the access of certain participants to project management and thence to project benefits; similarly, whilst community leaders may be nominal or titular heads of social groups, they may not consult their members on a regular basis and thus under-emphasize or ignore minority factions within their own groups. Because community structures vary greatly across cities and countries, particularly effective organizations in one setting may not achieve the same results in another.

The evaluated projects have witnessed both positive and negative effects of active community involvement and non-involvement in project implementation. Because of its commitment to stimulating and using community participation in achieving social goals, the FSDVM in El Salvador has compiled a generally noteworthy record of fostering populations' responsibility for project facilities and services, including payment collections. Required mutual help construction has also engendered collective action toward social aims. Yet there have also been several cases in which groups have organized themselves against the FSDVM, refusing to make payments until basic services such as water were provided. 1/ Community organizations, it seems, cannot be expected to be simply passive or neutral variables in project

1/ In one case, the FSDVM promoted -- or at least actively encouraged -- such a protest, which was directed against the recalcitrant state water utility. This demonstration inadvertently provided a "model" for organizing pressure upon the Fundacion itself at a later time.

implementation; for they can act as stimuli or deterrents to reaching objectives, depending upon the concordance of popular and program goals.

The Lusaka project, too, has in some cases used community involvement to its advantage and failed to employ it sufficiently in other instances. Consultation with groups in upgrading areas and those scheduled to be moved to overspill areas resulted in the avoidance of major disturbances. This accomplishment appears to have been a major one, in that squatter areas had traditionally been centers of unrest. Community groups, for example, were organized at the planning stage into Road Planning Committees, which made recommendations for modification in road layouts acceptable to all parties; the Committees have continued to be instrumental in other decision-making functions affecting community well-being. Other components, including mutual help, have met with less success. Whilst community resources were successfully applied to the provision of clinics, other efforts such as one to provide multi-purpose community centers have not met with popular support.

In the Philippines, it appears that consultation with barangay leadership and community groups has led, as in the case of Zambia, to the circumvention of major social disruptions during the reblocking process. It may also be that the Tondo organizations will be of use to project management in collecting service charges and deferred payments, although such an outcome is not yet assured. The Philippine evaluation team has noted that a marked passivity characterizes group meetings where project plans are discussed; Tondo dwellers seem regularly to follow

barangay leadership in declaring preferences for particular services or procedures, even when these involve significant physical disruptions in reblocking their homes. Though this form of hierarchical organization may in fact lead to the orderly recovery of costs from project families, the evaluation team has recommended that more comprehensive information campaigns be conducted prior to and during relocation, so that households understand as completely as possible what options are open to them. Such options may include actions which do not necessarily fit the preferences of barangay leaders, but inclusion of such choices may lead to a broader-based community participation than the estimable grass-roots movement already achieved.

The analysis of the eight project efficiency components presented above does not begin to exhaust the ways in which shelter programs might be evaluated concerning particular benefits derived from particular costs, or concerning the cost-effectiveness of any particular tactic in the housing strategy. Strictly comparable data have not been generated in every instance, given the wide variance in procedures and supply and demand features in the four country projects. This framework for gauging project efficiency, nevertheless, constitutes a useful tool to begin to assess cross-nationally the options and constraints acting in housing programs which attempt to serve the needs of low and lower-middle income urban populations, thereby assisting project authorities in sorting out what might or might not "succeed" in different circumstances. By applying the suggested program in a systematic manner, furthermore,

policymakers in different countries may start to determine how particular results were the products of the use of specific components or approaches, and how these were affected by the particular settings and the performances of project managers.

CHAPTER FOUR

SOME IMPLICATIONS OF EVALUATION FINDINGS FOR PROJECT DESIGN AND POLICY

Within the limits of freedom permitted by household economies, families exhibit widely varying behavior in housing markets. This diversity has been recorded for the projects under study in this program, and is generally corroborated by evidence from other projects. The planning and execution of the progressive development process, as well as the size, finish and use of houses, vary enormously. The range of preferences implied argues for solutions permitting substantial flexibility to households. The optimal degree of flexibility is not known, and may be unknowable. However, evaluation findings do suggest that project planners should resist temptations to build too many components into projects, seeking to internalize all important externalities at once. Rather they should try to be selective, thinking of projects as series of interventions which may eventually prompt the system to produce all the complementary components or services desired. 1/

1/ It is not yet possible to advance a model to guide practice in this regard, although high priority should be attached to developing one. In its absence a few illustrations may assist in identifying an optimal range of flexibility. Complete flexibility, involving no layouts for roads or utilities lines, obviously has unacceptable costs. Just as obviously, complete inflexibility -- requiring all participants to build identical houses on identical lots -- is also sub-optimal. Hedonics and other econometric analyses carried out under the evaluation program cast some light on the nature of the trade-offs between these extremes. Generally, in most but not all circumstances, families appear to require less to motivate them to construct or improve their housing than was supposed in the early years of the program.

In this view, then, projects should be kept simple, striving for realistic design and speedy implementation. 1/ Key elements, such as appropriate locations, reasonably secure tenure and efficient credit mechanisms, must be present in some measure. Beyond these elements, however, the set of needed components appears to vary greatly. The approach suggested here does not deny the complexity of urban problems; to the contrary, it requires complex and careful analysis, relating objectives to resources and constraints. This process should lead in turn to more accurate choices as to what to do first in a given set of circumstances. Along with continually improving provisions for maintenance, cost recovery and community participation, the approach may enable more rapid improvements in housing for more people and thus be more easily replicable.

Evaluation experience to date has shown that it is possible to produce housing that is affordable to at least a portion of households in the lowest quintile of most urban income distributions. 2/ If social equity as well as efficiency objectives are to be met as directly and as rapidly as may be desirable, efforts over the next decade will have to be more concerted than those already successfully undertaken. Though

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1/ It will be recalled that there were substantial delays in implementation in the projects evaluated. Putting aside the Senegal project as a "special case", the average delay in the other three projects has been approximately 35 months or about 95 percent of the planned period. This exceeds the average for more recent urban projects, which is comparable to an estimated 68 percent for all Bank projects audited during FY80 and FY81.

2/ This targetting to the poorest of urban groups, however, has not been an explicit objective of programs.

there are many potential ways to improve performance in each particular set of circumstances, evaluation findings suggest two principal ways to improve the general approach so that it is more conducive to this end: 1/ The first is to re-devise standards, and therefore unit costs, to lower levels. The second is to increase the opportunities for rental arrangements in projects. It is demonstrable that urban project designers in the Bank have been making considerable progress along both these lines in recent years.

These two approaches are not in all respects inevitably complementary, and hence need to be designed with sensitivity. Considering standards first, there are two crucial issues: the land density of settlement, and services levels. 2/ The first matter is closely tied to the question of plot size, though the two concepts are not identical. Given the scarcity of urban land, particularly in the very large metropolitan areas, projects in such locations should seek to achieve densities which are as high as possible -- consistent with the economic demands of the target populations and reasonable health

1/ These statements should not be taken to mean, however, that incorporating a portion of the bottom two income deciles into shelter projects should be the sole or even a primary aim of the entire program. Rather, it is one objective which must be set against concurrent goals, such as achievable cost recovery and finding "optimal mixes" of target populations across a range of low to middle incomes.

2/ The timing of the introduction of various services is in fact a third, if ancillary, consideration.

standards. 1/ Other things being equal, this strategy suggests small plot sizes -- smaller in general than were being considered during 1971-1975, when the projects evaluated in this program were being devised.

Such a strategy does not imply, however, that there should be less living space per household or individual, as optimal plot size will be arrived at as a result of a number of considerations, including land price and the incremental costs of constructing additional storeys. Such considerations, however, lead directly into the complexities of construction and housing markets. The relevant factors differ from location to location, placing varying constraints on the extent to which it is feasible and profitable to build vertically. The extent to which vertical construction can be carried out interacts in turn with plot size considerations, rental market conditions and the availability of credit to produce a range of options for the potential builder.

The early projects evaluated under this program did not do a great deal to encourage multi-storey construction. This is hardly surprising in that two of the four projects were in African cities of modest size where population pressures and resulting land prices were not yet at levels which forced concentration on vertical construction; this was also true, though becoming less true, in El Salvador. In addition, it was understandable that explicit multi-storey interventions would be eschewed in order to minimize risk in first projects. There

1/ The principle is also the same in smaller centers where land scarcity is less pronounced.

is considerable evidence, however, from the projects evaluated and elsewhere, that builders in the "informal" sector are capable of constructing to substantial heights. If appropriate incentives are present, they will do so in substantial numbers and amounts. The trique in future projects will be to keep such incentives at the right level: to increase incentives, or decrease disincentives, where appropriate and to avoid potential biases against multi-storey construction. 1/

Within the Tondo project in Manila, for example, analyses of available data on the first areas to be re-blocked show this kind of adjustment to have taken place in very short order. The average lot size was reduced by 12 percent (from 65.3 to 57.6 square meters), which did not deter households from increasing average constructed area by 34 percent (from 40.2 to 54 square meters), within the first three months following reblocking. To a substantial extent this was accomplished by increasing the amount of vertical building: a quarter of households (half those previously occupying single-storey dwellings) added a second storey for the first time, and the average number of floors increased

1/ In the field, one sometimes runs into reluctance to promote, or even to permit, anything other than single-storey construction on the grounds that a significant proportion of families would be unable to build "suitable" second storeys. Evaluation findings which point out the extent to which families hire others to do the building should help to redefine the risk. The tendency to equate owner-built with owner-occupied housing may also introduce a bias against rental housing. If present, this bias may serve to limit policy-makers' perceptions of opportunities to stimulate building vertically, as this would be seen as benefitting primarily the wealthier strata.

from 1.49 to 1.66. Projections based on early trends suggest that this figure may have reached about 1.85 when the next reading is taken later in 1982.

The most up to date information for a large urban housing market is provided by a recent study of Cairo. 1/ There, the character of the housing market has been changing rapidly as a result of increasing demand impinging upon an inelastic supply of land in a large metropolitan area. A very substantial share of the increase in housing has consistently been accounted for by the "informal" sector. 2/ The expansion has occurred both in extensions of the urbanized area and by the addition of storeys to existing buildings. As a result, informal housing which is initially constructed with one or two storeys eventually reaches two to five storeys, and the average number of floors per building has increased from 2.09 in 1976 to 2.45 in 1981. The economics of this process are reasonably clear. Presently, the cost of a medium-size informal lot in a medium-price location in Cairo is approximately two-and-one-half to three times that of constructing a 50 square meter dwelling. Thus, accounting conservatively for increased construction costs (foundations, bearing walls, etc.) occasioned by

1/ "Informal Housing in Egypt", Report submitted to the U.S. Agency for International Development under Contract NEB-0042-C-00-1008--00. January, 1982. Comparable information will be available shortly under World Bank Research Project 672-46 from one or more cities in Colombia, El Salvador, India, Indonesia, Korea, the Philippines and perhaps one or two other countries.

2/ Defined for the purposes of this study as that housing which has been constructed in the absence of official permission to convert land from agricultural use, without a building permit or in contravention of building codes, informal housing constituted about 90 percent of new starts in 1971-76 and 75 percent since 1976.

added storeys, the study finds that unit costs per square meter can be reduced by as much as a third by adding one storey, and by nearly half by adding two; furthermore, the incremental additional storey will cost no more than 75 percent as much as building a new single-storey house on the minimum-size lot at the periphery. 1/

The evaluation results indicate that an important objective of project design should be to bring (or keep) the unit price (and quantity) of land down within affordable limits for the target population -- so that the poor are not overstretched by participation, and the rich not over-encouraged to participate. 2/ 3/ Fortunately, there are signs that significant improvements are possible over practices of the recent past. That there is a sound basis for such a favorable outlook is

1/ This comparison abstracts from the likely higher infrastructure costs at the more densely constructed and populated central locations, as reliable figures for Cairo are unavailable. As such, it overstates to some degree the advantage of constructing multi-storey houses; it does not however alter the fact that a substantial advantage exists, as is reflected in the amounts of such construction.

2/ These recommendations acknowledge that plot sizes have been generally acceptable to the target populations; there is, however, very little information available as to optimal plot size distributions in projects. This is an important area of ignorance which should be reduced by research and evaluation on a priority basis, particularly in the developing world's largest and most rapidly growing cities. Such a study should, however, recognize that different groups have different preferences (income held constant) and the socio-cultural context may also have an important bearing on the calculus.

3/ Needless to say as with the unit prices of land, total shelter costs (land, services and buildings) have also to be kept within affordable limits.

illustrated most vividly from project experience in El Salvador, where both the programs of the FSDVM and the use of evaluation are of long standing.

These advances have been essentially of two kinds: improvements to layouts, which have increased the proportion of residential area to total area; and stimulation of two-storey construction. The former derive principally from significant reductions in the proportion of land assigned to vehicular traffic and parking by limiting these to peripheral areas, and grouping houses around mini-parks or green areas which both provide access to the interior plots and serve as semi-private recreation areas. This design results in families trading off some private area for a larger quantity of semi-private area, and the effect is maximized in large projects where the mini-parks can be most efficiently complemented by larger open areas. The success of these design choices is illustrated by the fact that residential area as a percentage of total area has increased from an average of about 50 percent in the earliest projects in El Salvador to 70-80 percent in the most recent ones. 1/

At the same time, there has been a steady increase in El Salvador in the number of units per hectare of residential area. To a degree, this figure has slowly increased as plot sizes have been reduced

1/ Such success has been one factor motivating the World Bank to develop small unit planning models, to deal efficiently with such trade-offs in project layout design. See, for example, "The Bertaud Model: A Model for the Analysis of Alternatives for Low-Income Shelter in the Developing World," Urban Development Department Technical Paper No. 2, PADCO and the World Bank, 1981.

on balance over time. 1/ However, the greatest increase in unit densities has come in a first, experimental project (Conacaste) in San Salvador where a two-storey design for some of the units has enabled the construction of 140 units per hectare, as opposed to an average of 80-95 units in other recent projects. Even allowing for the fact that this project had some special features, 2/ the cost-effectiveness of this result appears quite compelling, provided the focus is on inner areas of large urban centers where land prices are sufficiently high to encourage the substitution of capital (construction) for land. Based on this example, it appears that a two-storey unit (25 square meters of constructed area on a 32 square meter lot) cost on the order of 15 percent less than a 25 square meter single-storey house on a 60 square meter lot. Furthermore, rising land prices are inexorably shifting the balance further in favor of multi-storey construction where this is already advantageous and making this economic over an expanding urban surface. Still, of course, the Salvadorean cities are not yet sufficiently large to provoke the very strong incentives for vertical construction evident in the above examples for very large cities such as Cairo and Manila.

1/ In these projects, although neither encouraged nor helped to do so, significant proportions of households have added a second storey. In El Pepeto, for example, eight percent had done so within two years of project execution. Though no quantitative evidence has been gathered on total floor space, it appears quite likely that, as in the Manila project, reductions in lot size have not forced reductions in living space.

2/ It was, for example, designed for a somewhat higher income group of artisans.

Two other design considerations which can be used to reduce unit costs involve eliminating unnecessary construction costs and undesired services or service levels. Both aspects are best approached from the perspective of the great diversity of demand. Policymaking in these instances requires the preservation of a range of options, as well as flexibility with respect to their use.

The design of core units can be used to illustrate the choices involved. First, general judgments concerning the desirable extent of the core will depend upon the relative benefits and costs of this and other construction methods. 1/ Precise estimation of these costs and benefits is the subject of current research. When available, the findings should be factored into small unit models, such as the Bertaud model cited above, to produce the requisite planning guidance. A second consideration to be kept in mind, which is stressed here, is that what such calculations show to be desirable on average is not necessarily desirable for all concerned. For example, calculations might show that core housing has on balance an unfavorable benefit-cost ratio; yet a significant proportion of (potential) participants would benefit from the ability to choose a core-housing option. Conversely, whilst the overall benefit-cost ratio might be favorable, that result should not obscure the fact that a significant proportion of (potential) participants would benefit from options without core housing and the

1/ Such calculations will include the benefits, if they can be demonstrated, of providing some amount of core housing to minimize reticulation costs, encourage use of sanitation facilities or stimulate construction, by making it easier to move in at once.

corresponding financial obligations. Each of these issues must be confronted squarely in project design.

Regarding services levels, several types of considerations appear to be important. Using water supply in an admittedly simplistic illustration, the question is essentially one of whether to have individual household connections or some form of communal supply, such as standpipes; or, alternatively,of when to introduce individual connections in a particular area and thus for a particular populace. 1/ The problem is analogous to that for the question of core housing: whenever possible and economic, options should be offered. Not all households can afford individual water connections and should have access to some form of communal option. What proportion and what option are essentially empirical demand questions, though these are not easily assessed. 1/ The planning question is one of designing the economic total reticulation systems, including fire hydrant and wastes disposal systems, over time; this involves maximizing the presently evaluated return on the stream of investments implied by the plan.

Amongst the most critical issues for technical research in the field of urban development is that of finding and testing a range of

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1/ There are of course a large number of other factors which affect unit costs, such as capacity, hours of service, and quality of water; attention, however, is here limited to factors which directly affect project area design.

1/ Demand analyses from all four countries in the original evaluation program show that significant proportions of the target group are satisfied with communal water supply and pit latrines (i.e., Zambia project participants), choose low service level options if they are available (i.e., El Salvador and Senegal control groups) and place a relatively low hedonic evaluation on sanitation facilities (i.e., Philippines project participants).

methods of human wastes removal that cost less than those currently available, especially waterborne sewerage systems. 1/ Until there are substantial advances, the range of options available in particular circumstances can be quite limited. This scarcity of alternatives has been the case with the four projects evaluated in this exercise, even though pit latrines and privies were used in some instances. Thus, there has been no opportunity to date in the projects evaluated here to develop information on preferences among sewage disposal options, because of the limited range of choices offered.

Even with careful control of costs and attention to the provision of options, a substantial proportion of families, particularly among the poorest, will have access to shelter only to the extent that rental accommodations are expanded along with ownership opportunities. This assertion is based on the fact that, in all the countries covered by the evaluation, a significant proportion of households rents. 2/

1/ See, for example, John M. Kalbermatten, DeAnne S. Julius and Charles G. Gunnerson, "Appropriate Technology for Water Supply and Sanitation: A Summary of Technical and Economic Options," World Bank, December 1980.

2/ In housing market studies around the world renters usually make up a minority -- but a large minority nevertheless -- of households; in urban Areas they are typically in a majority. United Nations data are available for two countries covered by the evaluation program. For El Salvador, the latest (1971) statistics reveal that 47.9 percent of all households are owners of their dwelling units, 26.0 percent rent their units, and 26.2 percent have an unspecified tenure status. The urban count enumerates 35.3 percent urban owners, 53.3 percent urban renters, and 11.4 percent with another status. As for the Philippines, the country-wide breakdown shows that 83.3 percent of households are housing owners, 8.1 percent are renters and 8.6 percent have another form of tenure. Among Filipino city dwellers, 63.6 percent of households in the 1970 Census were owners, 23.7 percent were renters, and 12.7 had another tenure status. United Nations, Compendium of Housing Statistics,

This does not imply that all those renting in a particular place and time do so strictly from preference. The choice will result from a particular confluence of supply and demand, and will be biased towards rentals in a situation of restricted supply and overcrowding, such as is present in many (perhaps the majority of) developing country cities. Thus, the point is not that rental accomodation and ownership opportunities should be expanded pari passu, nor even that project planners should concern themselves with precise ratios, only that both should expand. 1/ The evaluation research does not indicate any particular need to stimulate the rental market, with the probable exception that appropriate improvements to credit systems (embracing loans for contractors as well as purchasers) would increase the elasticity of supply of rental accommodations. The most important action which can be taken, however, is to ensure against avoidable constraints on rental arrangements, such as the restrictions and prohibitions designed into some of the early projects.

It is worth mentioning in this connection that there is apparently some degree of resistance on the part of LDC policymakers to rental options. This reluctance remains to be overcome. The underlying notion that renting is not a suitable solution does not seem tenable, in face of the evidence that large proportions of households in all countries choose to rent. However, to the extent that this notion is

1/ Although this will be the normal expectation in the rapidly growing cities of developing countries, there may well be instances where the relief of housing "shortages" is so substantial as to reduce the absolute number of renting families.

based on perceptions of squalid rental housing in many LDCs, it expresses the fear of exploitation of the renting poor by a rentier class. This phenomenon exists to some extent everywhere. It can be minimized by expanding total housing supply 1/ ensuring that full cost recovery is enforced so that projects do not subsidize a rentier class, and monitoring for specific abuses. Successfully executed, such a strategy will avoid the feared pitfalls -- that low income renters will be exploited as renters and/or bought out by higher income families -- much more successfully than the rental restrictions and prohibitions designed into the early projects. Finally, it will be necessary to experiment with, and evaluate, means (other than renting out housing space) of enabling especially poor households to utilize their houses and plots as earning assets -- for commercial or small manufacturing enterprises or food raising.

To reiterate, in seeking improved mixes of project components to better serve target populations, flexibility appears to be crucial. Preferred solutions vary across countries because circumstances vary; and, even within countries and cities, optimal programs will offer a range of options and end results. A large measure of flexibility may be achieved most easily within rather simple project designs, since they do

1/ In order to guide this aspect of the program, analyses need to be performed, within evaluation programs, of the indirect effects in housing markets of changes in supply wrought by these projects.

not require so many components. 1/ The outlook for progress along these lines is encouraging. For example, at the same time that it adopted the sites and services concept, and realizing its limitations, the World Bank began to develop the complementary area upgrading approach. Recent years have also witnessed a significant broadening of options and modification of concepts under both approaches, leading for example to a change from materials loans to construction loans and acceptance of the need for rental components, as well as numerous other adaptations. The fullest illustration of such adaptability within countries has so far been provided by El Salvador, where the FSDVM has modified its mutual help program significantly and, in a number of other respects, pushed its already low standards still lower in some projects and developed the layout and design innovations mentioned above. 2/

In a related development, evaluation analyses aimed at assessing the "relative merits" of the area upgrading and sites and services approaches have suggested that, far from being distinct approaches,

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1/ There will continue to be instances where a project provides a particularly good opportunity to stimulate an advance in comprehensive planning and governance, suggesting a more complex project in part as a vehicle to these ends. The trade-offs between these goals and those furthered by simpler, more flexible solutions should always be made explicitly by project designers.

2/ Few specific examples can at present be cited for the other countries in the evaluation program. This is due principally to their later phasing. Nevertheless, a similar pragmatism has been evinced in response to problems encountered in first-project implementation.

these are really part of a continuum of countless nuances. 1/ Thus the processes involved in restructuring a wooden house on a Tondo lot, repositioning it within a new grid established by reblocking decisions, moving it to an adjacent overspill area, or even removing it to the Dagat-Dagatan sites and services area, are at least conceptually similar. To be sure, time, distance, cost and degree of retention of the old structure in the course of progressive development all vary. The point, however, is that they vary along a continuous frame of reference or response, frequently with very small differences. Leaving aside the extremes, the principal effort should be to focus policy-makers' attention on this continuum and on the scope for improving the total housing stock progressively over time, rather than on the fine-tuning involved in selecting particular types of projects.

This view leads to a final related observation: shelter program maintenance, collections and cost recovery -- and their interrelationships -- should be vital considerations for design and management. They should be dealt with from the outset, and projects should not be designed which do not fit readily -- in terms of the value of benefits delivered in relation to the revenues extracted -- into a general urban public finance framework. For replicability, programs must be designed so that they return, directly and indirectly, approximately as much to public revenues as they require in the form of

1/ The essential difference -- that sites and services development provides new housing, whereas area development does not -- of course remains. However, even this distinction is not completely fixed, as the upgrading projects evaluated have stimulated substantial increases in housing space as well as value.

expenditures, including operating and maintenance expenditures. 1/ But, beyond this, more must be accomplished towards making policymakers aware of the potential the projects offer for improving the local fisc, particularly as the projects are used to prompt fuller cost recovery: most notably in other locations and amongst other (higher) income strata; but also, if and as their improving circumstances permit, eventually amongst the target groups themselves.

It is not argued here that this will be an easy task. On the contrary, precisely because it is difficult, further experimentation is necessary, and planning should include considerable experimentation with various uses of community participation and contribution. Fortunately, the record on this issue is quite favorable and encouraging. Just as they have a desire and capacity to improve their own homes, the urban poor have a desire and capacity for greater participation in their own governance. In the past these capacities have been left largely untapped by program designers. It has since been demonstrated that these projects can make effective use of them. More, however, can be done to facilitate project implementation, improve the record on collections and articulate demands for specific components in future projects, within an overall strategy for progressive social change and development. Judicious involvement of the community at all these levels should be more fully explored in planning, in practice and in evaluation.

1/ This does not imply that there be no subsidy from higher income groups, either within projects or over a broader spectrum, but rather that the subsidy be on a scale that can be sustained in a large program over time.

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