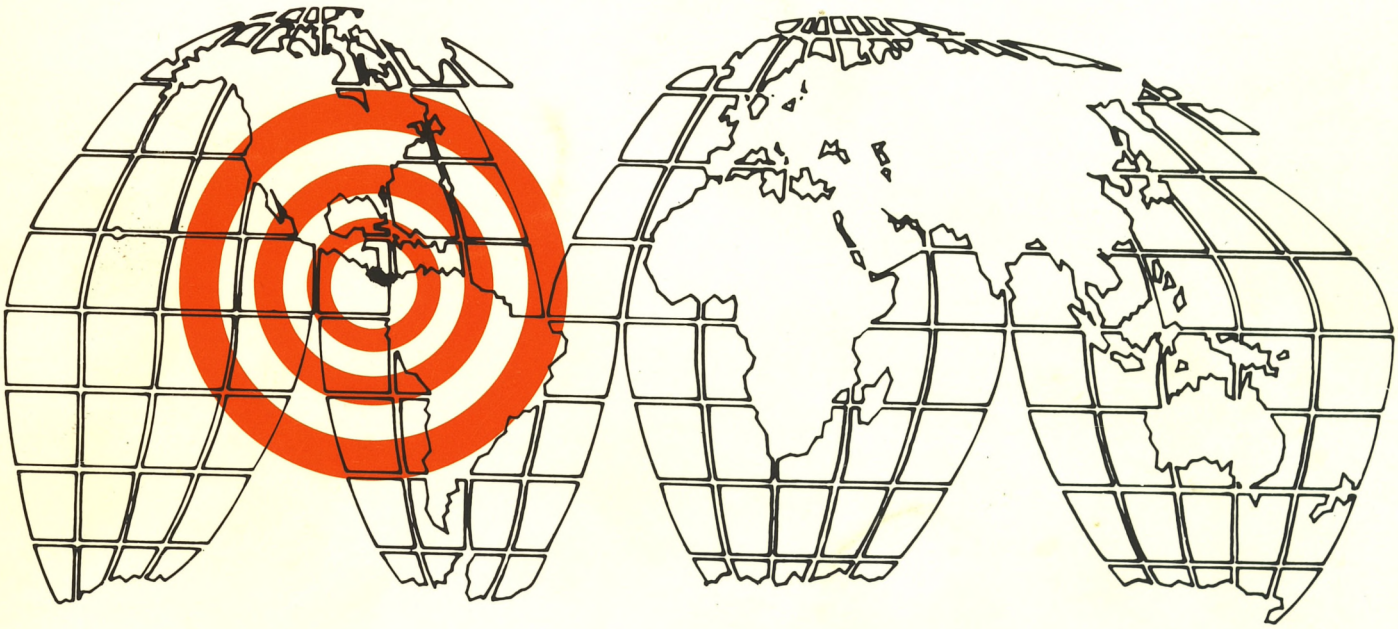
A.I.D. Project Impact Evaluation Report No. 41

Housing Guaranty Programs in Panama



March 1983

U.S. Agency for International Development (AID)

PN-AAL-008

IMPACT EVALUATION OF HOUSING GUARANTY PROGRAMS IN PANAMA

A.I.D. Project Impact Evaluation No. 41

by

Ann W. McDonald, Team Leader
(Bureau for Africa)

Margarita Sorock, Housing/Sociology Consultant
(Resources for Action, Inc.)

Carlos Luzuriaga, Economist/Architect
(USAID/Ecuador)

Victor Rivera, Engineer
(USAID/Panama)

Randy Roeser, Design Specialist
(AID/Washington)

U.S. Agency for International Development

March 1983

A.I.D. EVALUATION PUBLICATIONS

A complete list of reports issued in the A.I.D. Evaluation Publication series is included in the back of this document, together with information for ordering reports.

TABLE OF CONTENTS

FOREWORD

In October 1979, the Administrator of the Agency for International Development (AID) initiated a series of impact evaluations focusing on the impact of AID-funded projects. These impact evaluations are concentrated in substantive areas of the Agency's overall program. Procedures are followed which ensure that the findings and lessons learned are useful to AID and others in the development community.

The Panama Housing Guaranty evaluation was conducted as part of a worldwide assessment of the Housing Guaranty (HG) program. Also, the 20-year experience of this program provides important lessons to the Agency's effort to assess the effectiveness and impact of private-sector initiatives. Although the worldwide assessment has been delayed, this excellent study highlights key issues in the design and evaluation of shelter programs that should prove useful to those in charge of formulating urban policy.

Richard N. Blue
Associate Assistant
Administrator for Evaluation
Bureau for Program and
Policy Coordination

SUMMARY

Unlike other programs which use appropriated funds, AID's Housing Guaranty (HG) program underwrites private sector loans. The HG program is considered an effective way of getting maximum development leverage with minimum expenditure and risk of U.S. Government funds. As part of an effort to assess the impact of the HG program worldwide, Panama and several other countries were selected for evaluation.

Panama is at the upper end of the income scale for less developed Latin American countries and enjoys relatively high standing in such quality-of-life indicators as level of education, health, and nutrition. Thus, a large and growing housing deficit is one of Panama's most pressing development problems, and HG-financed housing programs take on considerable importance in the overall assistance effort.

In 1974-1975, in response to the "New Directions" policy, the Government of Panama (GOP) and USAID/Panama began to reorient HG projects toward the poor majority and away from the middle- and lower middle-income segments of society. The Panama HG impact evaluation conducted in November-December 1981 focuses primarily on two projects within the program: HG 008 which provided $3.4 million for homes to be built by the Nuevo Chorrillo Housing Cooperative, and HG 009 which provided $15 million for slum upgrading in the San Miguelito squatter district. These projects were selected because they were the first completed activities intended to reach a significant number of low-income beneficiaries.

The team found that evaluation of beneficiary impact was especially difficult, because HG planners had tended to treat outputs, i.e., housing solutions, as project purposes. Project Papers and other documents made little reference to anticipated effects on beneficiaries, and baseline data were essentially nonexistent. The evaluation report recommends that future HG Project Papers include selected short-term indicators, such as reduction in human densities and cost-efficiency of housing solutions, which will enable designers and managers to gauge the real value of a project to beneficiaries and to compare the relative merits of various housing solution alternatives. Standard indicators often used in other AID projects would seem inappropriate here. They may be too costly to monitor with funds obtained at commercial rates, and it is difficult to link such long-term changes with improved housing.

As far as the beneficiaries are concerned, improved housing seems to be an end in itself. According to beneficiary interviews, important sources of satisfaction were improved environment for self and children and a perception of enhanced

social status. Low-income households appear to have a nearly universal tradition of progressive home upgrading as security and resources permit. The HG program accelerates this existing social process considerably and provides important improvements, such as water and electricity, which individual households could not obtain on their own. Interestingly, the HG program seems to do little to enhance beneficiary financial standing. Low-income homes typically are not improved for investment or for sale at a profit as they generally are in other areas, and local banks do not regard such homes as collateral for loans.

The GOP has made significant efforts to reduce the cost of housing solutions and to provide more cost-efficient solutions to the greatest number of low-income beneficiaries. However, very rapid escalation of construction costs and interest rates make it doubtful whether the GOP can continue to satisfy target group needs. To help combat this serious threat to HG program effectiveness, the evaluation report recommends more precise definition and identification of actual beneficiaries, increased early beneficiary design participation, and incorporation of knowledge of beneficiaries' actual needs and living patterns into the design of project and housing solutions.

Mechanisms are also needed to protect the financial integrity of the low-income housing program. Several possible measures are recommended in the report to ensure that beneficiaries can carry the full cost of housing solutions and to prevent recurring decapitalization which jeopardizes the future of the program. Even with the suggested refinements in financial management, however, experience has shown that subsidies in some form will still be required to keep even the most economical of housing solutions within reach of low-income beneficiaries. It is recommended that steps be taken to analyze actual subsidy requirements and to distribute the subsidy as equitably as possible along the beneficiary spectrum.

Finally, there is a question as to how much planners should continue to look on the HG program as an important source of jobs for Panama's surplus labor. Given the highly cyclical and unreliable nature of Panama's construction sector, it is doubtful whether attracting unskilled labor into work on HG projects is an appropriate long-range solution to the unemployment problem. HG projects must continue to move rapidly toward lower cost shelter solutions which require less labor input. Therefore, it is recommended that planners continue to focus on developing other employment alternatives, such as light manufacturing, which will make it possible to unhook the HG program from employment concerns.

PROJECT DATA SHEET

Project Title: Nuevo Chorrillo Housing Cooperative

AID Guaranty Number: 525-HG-008

Borrower:

The National Housing Bank of Panama (BHN). The project was implemented by the Nuevo Chorrillo Housing Cooperative.

Guaranty Amount:

Original--$3.4 million

Supplement--$1.5 million in funds allocated by the BHN from proceeds available under 525-HG-007

Other Contributions--	$750,000	BHN construction loan
	$650,000	Downpayments of Cooperative members
	$734,000	Grant from the Inter-American Foundation
	$ 85,000	GOP contribution
	$ 45,000	Private land donation
	$ 50,000	Powerline right-of-way
Project Total	$7,214,000	

Terms:

HG assistance consists of loans from private U.S. investors at prevailing market rates guaranteed by AID. The funds are sublent by the borrower to the project implementor(s) at prevailing interest rates in-country.

Date of Guaranty Authorization: 1976

Purposes:

-- To assist the Nuevo Chorrillo Housing Cooperative in construction of low-cost houses for members.

-- To develop a viable institutional model for self-sustaining cooperative housing program financed through the BHN.

Project Title: Nuevo Chorrillo Housing Cooperative (cont.)

Accomplishments:

The first phase of construction (700 low-cost units) was completed along with 200 units projected under the second phase. Almost all units appear to be occupied by the original owners.

Office Responsible for HIG Projects: USAID/Panama
Regional Housing Office

* For AID Evaluations of HIG projects, see Appendix C, "Bibliography", page 6

PROJECT DATA SHEET

Project Title:

Slum Upgrading and Home Improvement (San Miguelito)

AID Guaranty Number: 525-HG-009

Borrower:

The National Bank of Panama (BNP). The project was implemented by the Ministry of Housing (MIVI), the Ministry of Public Works (MOP), the water and sewer utility (IDAAN), and the electric utility (IRHE) in coordination with the High Level Commission for the Development of San Miguelito (DUISMI).

Guaranty Amount:

	$15.0 million
GOP Contribution	4.3 million
Total Project Value	$19.3 million

Terms:

HG assistance consists of loans from private U.S. investors at prevailing market rates guaranteed by AID. These funds are sub-lent by the borrower to the project implementor(s) at prevailing interest rates in-country.

Date of Guaranty Authorization: 1977

Purposes:

-- To provide basic infrastructure, services, and low-cost housing in the squatter settlements of the San Miguelito District.

-- To provide an example of a development program in marginal urban areas by mobilizing and coordinating resources to meet the housing and social service needs of San Miguelito.

-- To test a model for self-financing slum upgrading programs.

Project Title:

Slum Upgrading and Home Improvement (San Miguelito) (cont.)

Achievements:

Services and infrastructure were provided as planned. Low-income housing was provided after significant revisions in type and number of units, plus expansion of the target group.

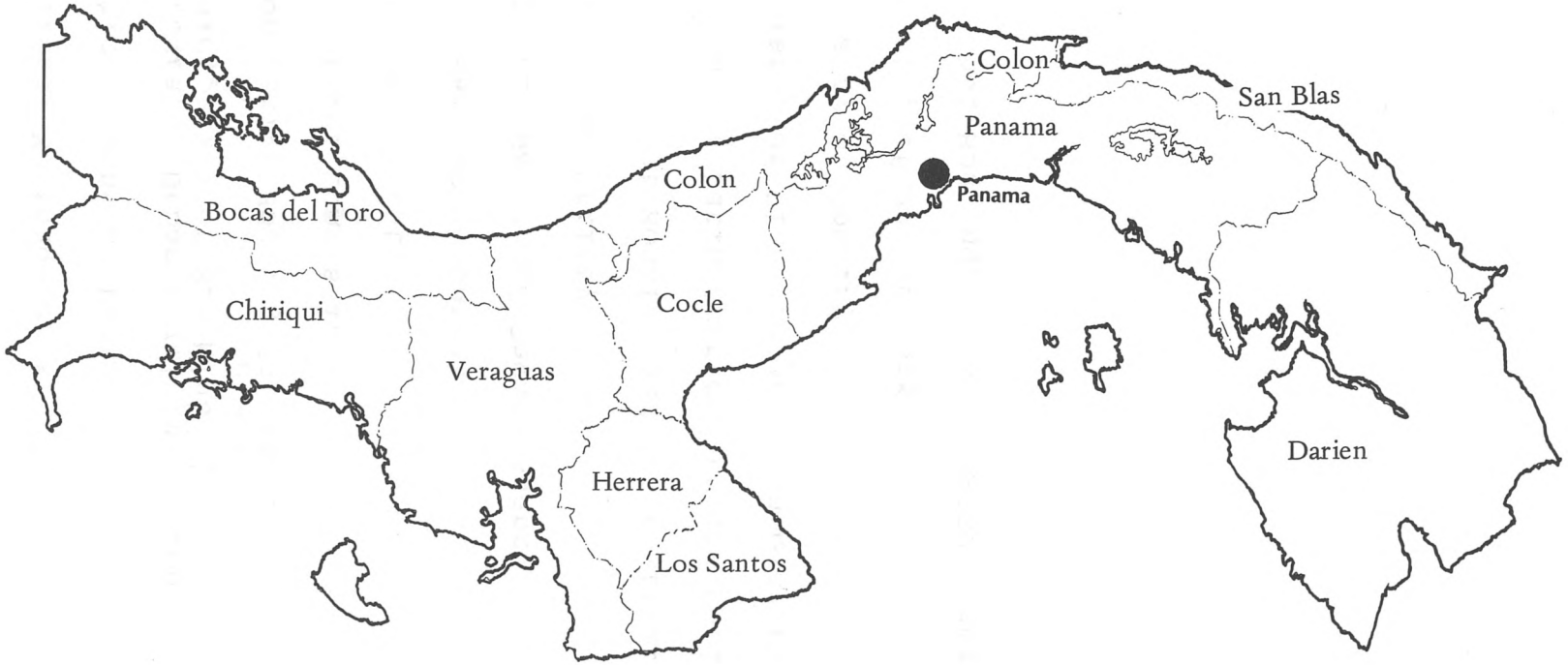
Office Responsible for HIG Projects: USAID/Panama
Regional Housing Office

* For AID Evaluations of HIG projects, see Appendix C, "Bibliography", page 6.

GLOSSARY

BHN	National Mortgage Bank
BNP	National Bank of Panama
DUISMI	Integrated Urban Development Program for the Municipality of San Miguelito
FUNDAVICO	Cooperative Housing Foundation
HLC	High Level Commission
HG	Housing Guaranty
IAF	Inter-American Foundation
IDAAN	National Water and Sewage Agency
IRHE	Electrical Utility Company
IVU	Institute of Housing and Urban Affairs
LAC	Bureau for Latin America and the Caribbean (AID)
MIPPE	Ministry of Planning and Economic Programs
MIVI	Ministry of Housing
MOP	Ministry of Public Works
RHO	Regional Housing Office (USAID/Panama)

Panama


Colon
San Blas
Panama
Panama
Colon
Bocas del Toro
Cocle
Chiriqui
Veraguas
Darien
Herrera
Los Santos

I. INTRODUCTION

Since 1974-1975, with the installation of the New Directions policy in the Agency for International Development (AID), Panama has been in the process of orienting the Housing Guaranty (HG) program toward its poor majority. The Government of Panama (GOP) has found this to be consistent with its own social priorities, and HG programs undertaken since the 1974-1975 period have focused on progressively lower income groups. The Ministry of Housing (MIVI) has taken seriously its mandate to address the housing problems of Panama's poor and is to be commended for its efforts to date. Results of Impact Evaluation team interviews indicated that beneficiaries were, by and large, very satisfied with the range of housing solutions provided (a "solution" being a type of house, lot, and/or service).

At the same time, Panama is faced with the widespread problem of rapidly rising costs of land and construction and extreme tightness of commercial long-term credit for housing. This puts in question the GOP's ability to continue to follow past housing program patterns and still effectively reach significant numbers of the low-income target population. The team looked at selected housing projects[1] not solely in terms of impact on beneficiaries to date, but also to identify lessons which could be drawn or inferred from past experience to help the GOP and AID in their efforts to adapt to new realities.

II. PROJECT SETTING

The Nuevo Chorrillo Housing Cooperative project (HG 008) and the San Miguelito Slum Upgrading and Improvement project (HG 009) were undertaken in 1976-1977 in the wake of nearly two decades of rapid, uncontrolled urban growth in Panama. A high rate of natural increase (over 3 percent per annum in the 1960s) and a weak agricultural sector resulted in a major shift of

---

[1]HG 008, Nuevo Chorrillo Housing Cooperative, and HG 009, San Miguelito Slum Upgrading, were completed projects and were examined in depth. HG 011, Shelter and Community Upgrading, was a relatively recent project; therefore, beneficiary impact could not be assessed. The team did consider whether the 011 design was responsive to certain lessons learned from previous projects. Other non-HG low-income housing projects were also examined for comparison with HG 008 and HG 009, e.g., "Nuevo Veranillo," Cabo Verde, Nuevo Tivoli, and the World Bank-sponsored Puerto Escondido project in the city of Colon. See Appendix B for a description of all projects examined.

population toward Panama City and other urban areas. Since 1960, Panama City and its adjacent district, San Miguelito, have absorbed about 60 percent of the total population growth.[2] As much as 40 percent of the increase was attributed to migration.[3]

The effects of these demographic pressures on the housing stock were most evident in two areas. In the downtown areas of Panama City, such as Chorrillo, wooden structures (which 80 years ago served as dormitories for the Canal construction workers) had deteriorated beyond acceptable living standards as a result of severe crowding. GOP condemnation and rent control policies have removed landlord incentive to keep the buildings in repair. Meanwhile, rural migrants squatted on lands in outlying areas such as San Miguelito, some 12 miles from downtown Panama City. From a population of 13,000 in 1960, San Miguelito grew by 18 percent a year over the next decade, six times the national average. By 1977, it had become Panama's second largest city, a sprawling squatter settlement of 120,000. Of 22,000 housing units in San Miguelito, 30 percent lacked direct access to pure water, and 64 percent to sanitary or sewer facilities. Sixty percent of water and electrical services were communal.[4] In 1970, it was estimated that between 117,000 and 164,000 households were in serious need of improved housing, with some 38 percent of these located in the Panama City Metropolitan area.[5]

Throughout the 1960s and early 1970s, the Panamanian housing sector had remained largely unresponsive to the growing housing problem. Private sector housing was only affordable to the high- and middle-income groups. Rent controls, dating back to the end of World War II, discouraged private investment in smaller, less expensive rental units.

Public housing construction was primarily carried out by the Institute of Housing and Urban Affairs (IVU). Its projects consisted largely of completed one- and two-bedroom units affordable at the lower middle-income level. In 1973, the present Ministry of Housing (MIVI) was created from IVU, and the orientation of the public housing program was shifted toward

---

[2]Contraloria General de la Republica, "Panama en Cifras," November 1980.

[3]USAID, "Project Paper AID-DLC/P-2262."

[4]USAID, "Project Paper AID-DLC/P-2262."

[5]USAID, "Shelter Sector Assessment for Panama, December 1977.

low-income groups.[6] MIVI finances its activities through the National Mortgage Bank (BHN). These public sector efforts are complemented by two cooperative organizations: FUNDAVICO,[7] which sponsors a series of urban and rural cooperatives, and the Nuevo Chorrillo Housing Cooperative, which focuses on the needs of the Chorrillo slum area.

AID's involvement in housing in Panama through the HG program began in 1965. Over the next eight years, seven HG loans were authorized for a total of $22.8 million.[8] The purposes of these programs were primarily to construct single-family units in the lower middle-income price range and to strengthen private housing institutions, such as the savings and loan system.[9] The HG 008 guaranty represented AID's first effort under the New Directions mandate to address low-income housing needs in Panama (with the exception of some non-HG-financed low-income units built in the Nuevo Veranillo section of San Miguelito in the 1970s).

Unlike other poorer nations in Central and South America, Panama enjoys a relatively high standing in basic quality-of-life indicators, e.g., health, educational level, literacy, and national income levels. The principal problem areas are, in fact, a substantial shortage of adequate housing (particularly in the urban areas) and rising unemployment. For this reason, the HG program assumes considerable importance in the overall development assistance effort.

---

[6]Other public institutions participated to a limited extent in housing construction and finance. The National Savings Bank provided mortgages and has financed some construction of middle-income units. The Social Security Bank has extended loans to low-income households and recently undertook its own low-cost housing project. The National Bank of Panama also contributes to the housing sector.

[7]Fundacion de Vivienda Cooperativa: An organization that provides technical assistance in financial matters and management to Panama's housing cooperatives.

[8]Throughout this report, monetary values will be expressed in dollars. The Panamanian currency unit, the Balboa, is equivalent to $1.00.

[9]The middle-level range is still the weakest part of Panama's housing sector ($10,000-$20,000 unit cost). The savings and loan system is not meeting this group's demand. Therefore, there is continual pressure on public institutions to meet this demand, and they are charged with serving the low-income group.

III. PROJECT DESCRIPTION

A. HG 008--Nuevo Chorrillo Housing Cooperative

The Nuevo Chorrillo Housing Cooperative grew out of local concern over deteriorating housing conditions in the Chorrillo slum area. The Cooperative began in the 1960s as a community health committee; later, a group of residents guided by a local priest re-directed its efforts toward repair and maintenance of the slum area's existing dwellings. When the group was unable to mobilize broad community support, its members began to think in terms of building a new community with the help of interested Panamanian professionals, including architects, engineers, and lawyers. A low-income, private housing cooperative--the first of its kind in Panama--was formed and received legal recognition in 1973. After a long and fruitless search for an affordable site, the Cooperative was offered a rural tract of land at less than the market rate. Fifteen miles from downtown Panama City, the land was owned by one of the architects who helped found and guide the Cooperative. In return, the Cooperative agreed to employ the architect's firm to design and construct the new community, to be named Nuevo Chorrillo (New Chorrillo). The Cooperative membership--which had grown to include residents from other slum areas--participated in planning and community layout. The Cooperative had a savings plan that set aside members' money for downpayments on their new houses, but the bulk of financing came from external sources. A grant from the Inter-American Foundation (IAF) financed three Cooperative factories which produced doors, windows, and cement block for the houses. A second IAF grant helped finance initial housing construction.

AID saw in Nuevo Chorrillo an opportunity for a pilot project which could help establish cooperatives as a channel for private sector involvement in low-income housing and contribute toward the housing sector goal to increase the availability of housing units for low-income families in urban areas in Panama.[10] Therefore, in 1976 a $3.4 million HG loan guaranty was authorized, and the BHN added another $750,000 at

---

[10]Availability of new housing units probably was an inappropriate measure. Figures provided by the MIVI-AID Coordinator show a sharp decline in new low-cost units from 5,894 in 1977 to 848 in 1980, or a drop of 85 percent. The reasons cannot be identified with certainty, but it appears that the number of low-cost housing units varied according to such factors as levels of external financing and public sector emphasis on alternative shelter solutions.

less than market rates to complete the first phase (700 housing units) of construction. It was believed that the Cooperative could generate sufficient private financing to cover the remaining two phases of construction, without further HG support.

The purpose and output levels of the Nuevo Chorrillo project were not clearly distinguished in the Project Paper's Logical Framework. The three stated purposes were (1) to develop the capacity within Government and housing-finance institutions to plan, administer, and finance low-cost housing and cooperative programs; (2) to develop an approach that uses commercial-rate financing for unsubsidized low-income housing programs to achieve program replicability; and (3) to develop the cooperative approach to reduce the initial cost of housing and facilitate administration and management of the low-income housing program. Achievement of these purposes would be indicated by construction of 700 low-cost housing units built at an average cost of $5,980 each, and the institutionalization of a cooperative, low-income housing program, with continued availability of market-rate interest financing from domestic sources.

The stated outputs included development of (1) a new means of financing low-cost housing, (2) a demonstration project, (3) institutional linkages between cooperative and Government finance institutions, (4) a socially and economically viable cooperative organization of low-income families, (5) a housing prototype in a social and physical environment affordable by low-income families and conducive to their upward development (administratively, financially, etc.), and (6) experienced organizations (FUNDAVICO, BHN) to promote similar programs. HG 008 outputs were also to be measured by the completion of 700 low-cost housing units under the first phase, development of a cooperative organization with the capacity to complete two additional phases with local financing, and the potential of the BHN and FUNDAVICO to undertake additional cooperative housing projects.

B. HG 009--San Miguelito Slum Upgrading and Improvement

As in Chorrillo, community demands for improved housing conditions in San Miguelito were the first step in a process that eventually led to approval of a HG project. In 1970, San Miguelito was recognized as an independent municipality. The new municipal government tried to cope with continuing public disorder by purchasing land that had been taken over by squatters and allowing the squatters to erect permanent housing structures. After a series of violent confrontations with the residents of San Miguelito in 1975, the GOP announced an integrated urban development program (DUISMI) for the municipality,

including the provision of basic services. A High Level Commission (HLC) was appointed to implement the program and a committee was formed with representatives from AID; the HLC; the municipality; the Ministries of Planning, Housing, and Public Works; and the public electric and water utilities. On the basis of the committee's plan, a $15 million HG guaranty was authorized in 1977.

In agreeing to support the host-country initiative, AID sought to test a pilot program for the continuing redevelopment of marginal urban areas in Panama. According to the Project Paper's Logical Framework, the goals of the project were (1) to forge cooperative links between national planning and implementing agencies and local coordinating bodies and (2) to demonstrate that housing and basic services could be provided to marginal areas on a cost-recoverable basis at commercial rates of interest. The purposes, as enumerated in the Project Paper, were to install the basic infrastructure missing in San Miguelito, rationalize land occupation patterns, strengthen local and national administration support for such programs, increase civic responsibility, and transform the HLC into a model for dealing with urban poverty at the local level.

The outputs were to be provision of water to 7,800 households; sewerage lines to 5,980 households; electricity and street lighting to 6,045 households; and paved streets, sidewalks, and storm drainage to 4,000 households. The water and sewerage targets were reduced to 4,210 and 4,890, respectively, due to an overestimation of the number of households in the affected areas and to unexpectedly high excavation costs. (See Appendix A, Table A-7 for an analysis of the outputs.) Concurrently, the authorities would demarcate and title the lots on which San Miguelito residents had built their dwellings in a haphazard manner. It was expected that the upgrading and titling activities would displace about 2,500 households, which were to be relocated in a new housing development nearby, also financed under the project. In all, about half the low-income population of San Miguelito was to receive one or more benefits under the project.

IV. FINDINGS AND ANALYSIS

The team found that project impacts had to be viewed from two perspectives: that of the explicitly stated objectives contained in the Project Papers' Logical Frameworks (and largely couched in terms of outputs) and the implicit objectives that could be inferred from statements by the beneficiaries themselves, project designers, and others.

A. Explicit Objectives

1. HG 008--Nuevo Chorrillo Housing Cooperative

In terms of physical outputs, the Cooperative actually exceeded the original project targets by completing 749 housing units complete with streets, electricity, septic tanks, and partial water service. Another 266 units were also constructed in the second phase. In addition to three small factories producing construction supplies, the Cooperative operates a few small food stores and a transport service consisting of six buses which take residents to and from Panama City at a lower fare than public transport.

The housing itself is an unquestionable success with the beneficiaries (see Section IV.B on Implicit Objectives). However, the project's success and replicability are less certain if measured in terms of financial and cooperative development.

In the first place, there seems to have been considerable delinquency among members in paying off their mortgage loans to the Cooperative. In an independent audit, the Controller General of the Republic found that in April 1981, 73 percent of the Cooperative members had arrearages with an average duration of four months, although the majority were delinquent two months or less. Cooperative records indicate that member arrearages increased in 1980, but were apparently diminishing in 1981 due to the more stringent collection and beneficiary selection measures recently instituted.

The Cooperative did not appear to have made the best use of its productive activities. At least one factory (block making) was doing well enough to subsidize operating losses in other areas such as transport service. While cross-subsidization may be needed to support activities through the uneconomical startup phase, it can obscure the need to improve the long-term profitability of each activity. The Cooperative prohibited the sale of community-produced goods outside of Nuevo Chorrillo on the grounds that the Cooperative would lose its nonprofit status and, hence, its tax exemptions. However, a lawyer specializing in cooperative law told the team that Panama's statutes allow a cooperative to make as much profit as possible, as long as it is distributed among the members (usually in the form of dividends). Thus, Nuevo Chorrillo's management appeared to be unnecessarily depriving the Cooperative and its members of possible additional sources of income and employment. This raises questions about the economic viability of the Cooperative model established under the project.

The Cooperative fell well behind in its repayments of HG loan funds to the BHN. A reserve fund, consisting of small percentage set-asides from members' subloan repayments, was hardly adequate to cover the Cooperative's arrears of $850,000, according to both the Cooperative's Controller and the BHN. In addition to internal delinquency, a reason for failure to repay the BHN seems to have been that Cooperative management decided instead to use members' subloan repayments to commence second-phase construction of houses.

About two years ago the Cooperative used HG loan funds to hire a bookkeeper/accountant to serve as the Controller and an architect to run the Technical Department. However, this did not seem to have resolved the Cooperative's financial problems. Thus, it would be difficult to assert that Nuevo Chorrillo provided a model for financially self-sustaining housing development for low-income groups.

In addition, the Cooperative does not seem to have arrived at a working system to help attain community development goals in Nuevo Chorrillo. A group of Cooperative members--many from the original Chorrillo organization--recently organized to protest the lack of services promised in the original plan for the community (for example, a health center and church) and to petition for a meeting of the General Assembly which had not convened in three years. A great deal of bitterness developed around this seemingly minor challenge to management's authority. Threats were made and some persons interviewed seemed to be afraid their houses would be taken away if they took sides against the Cooperative. The Cooperative responded to community pressure by converting an unoccupied house into a health subcenter and opening two more small food stores for the residents' convenience. The team was informed that a General Assembly meeting would occur in late November 1981; however, it did not. Management did permit the community to designate one spokesperson for every 80 households to provide a channel for airing grievances. It was too early to tell at the time of the impact evaluation whether this so-called "sectoral system" was successful. It appeared to lack the advantages of member decisionmaking and voting that a General Assembly would offer. Thus, it seemed that Cooperative management needed to be more responsive to the collective will (rather than relying on highly centralized and personalized leadership) in order to come closer to being an effective model for low-income community development.

Even the narrow function of delivering low-income housing, which the Cooperative seemed to perform adequately, may not be replicable due to rapidly rising costs and the seemingly high level of subsidization required. Although the average cost of $5,202 (at current costs) was under the expected design cost, concessional prices and donations amounted to an estimated $2,147,000 through 1980, or an average of $2,115 per house

completed so far (see Appendix A, Table A-5). In addition, the Cooperative benefited from an untold amount of unreimbursed technical assistance from Panamanian professionals over the years.

On the institution-building side, it was expected that the BHN would become a key financial intermediary, mobilizing private domestic resources for cooperative housing. The BHN 1980 annual report indicated that it had financed $7.7 million for such programs, of which $5 million went to Nuevo Chorrillo and the balance to three other cooperatives. This suggests that Nuevo Chorrillo may, in fact, have established a precedent for cooperative housing finance. However, as of December 1980, BHN had net assets of $33.1 million, a small amount with which to mount a nationwide attack on the housing problem, given that the BHN remains the only source of funding for cooperative housing in Panama. The BHN has not mobilized private domestic resources but rather has relied heavily on HG funds and contributions from the social security system. Its financial position has been further weakened by loan collection difficulties, notably with Nuevo Chorrillo. As a result, the BHN has been so seriously decapitalized over the past several years that the GOP agreed to pass on to the bank at no interest the first tranche of the HG 011 loan.

The HG 008 project was also intended to expand the capacity of FUNDAVICO to provide management assistance to housing cooperatives. However, the Nuevo Chorrillo Cooperative reportedly turned down the cost-reimbursable aid of FUNDAVICO and proceeded to manage the project on its own. FUNDAVICO has gone on to assist 18 other cooperatives, but this seems to have had nothing to do with the Nuevo Chorrillo project.

In sum, it would be difficult to say that Nuevo Chorrillo presently constitutes a replicable low-income housing model. The venture was supported by a variety of subsidies that cannot be guaranteed to similar projects in the future. The Cooperative was still trying to develop effective cost-recovery mechanisms, and, by its management decisions, was jeopardizing the solvency of the only present source of cooperative housing funding, the BHN. Nor did the Cooperative appear to be functioning smoothly as a cooperative or as a community developer. This does not mean that future cooperative activity should be discouraged. However, there may be a need for a higher degree of supervision, careful control over cost recovery, and technical assistance. It may also be advisable to limit cooperatives to the provision of housing and leave community development to the residents. The success of future cooperatives will depend on domestic financing, which does not seem to exist currently, or on continued external resources, such as the HG program.

2. HG 009--Slum Upgrading and Improvement

Like the Nuevo Chorrillo Cooperative project, the Slum Upgrading and Improvement project was intended to be both a demonstration and institution-building project. However, the Project Paper's logical framework objectives were not well defined.

The stated goals, which appear more to be purposes, were to create a pattern for coordinating several national and local institutions to carry out future marginal urban area redevelopment projects and to provide a model by which the housing and public service needs of such areas could be met through commercial rate loans with a minimum of GOP subsidy. One stated purpose, the creation of infrastructure, seems more accurately to be an output. The other stated purposes were to rationalize land occupation through titling squatter lots, to raise residents' sense of social and civic responsibility, and to broaden the focus of the HLC to deal effectively with the entire range of housing and social service needs of San Miguelito.

The Project Paper estimated that 5,460 lots would be titled, but no specific quantitative target was given. The records indicate that at least 3,300 titles were granted, although the process was still going on at the time of the evaluation. Many households refused to abandon their existing houses on small, irregular parcels, even when offered title to new lots elsewhere. The reasons for their reluctance seem to have been a desire to retain their hard-earned investment and location, and the belief that they would have to pay more to live elsewhere.

No measurable targets were given for achievement of raised social and civic responsibility. However, the San Miguelito area already had a long tradition of community action, including active opposition to the authorities. Almost 300 active community groups were created to fill perceived community needs in San Miguelito, apart from the elected corregimiento structure. As in Chorrillo, community organization and participation were catalysts for action by the authorities, as well as keys to project success. In short, a sense of community responsibility seems to have been a cause rather than an effect of the HG 009 project.

Creating an all-powerful agency like the HLC to oversee San Miguelito's development does not seem to have been successful. The HLC still exists in name, but responsibility for development has been turned back to the elected local government working with the national agencies involved in infrastructure delivery. Reasons for the demise of the HLC are shrouded in the mists of local politics. However, it is probably safe to

say that it could not survive, operating as it did outside the established system.

The goal of developing a pattern of institutional coordination did not evolve very far. From the start, IDAAN, the water and sewage utility; IRHE, the electrical utility; and MOP, the Ministry of Public Works responsible for road construction and maintenance proceeded with infrastructure installation in the customary fashion with minimal coordination.

Although further upgrading is planned in San Miguelito under HG 011, MIVI has now placed highest priorities on urban renewal for certain downtown slum areas. The Ministry of Planning and Economic Programs (MIPPE) is very interested in integrated development in San Miguelito, with itself in the role of overall planning coordinator. However, MIPPE has no capability for operational activities, and there seems to be a stalemate with MIVI concerning low-income housing sector priorities. Such institutional fragmentation within the sector is recognized in the HG 011 Project Paper which contains a suggested list of institutional responsibilities and mechanisms for coordination. The need to provide a large number and wide range of shelter options--transcending the capacities of any one institution--argues for the importance of better coordination.

The goal of a financially viable model was more nearly achieved in San Miguelito than in Nuevo Chorrillo. In accordance with a GOP policy decision, subloans to new housing beneficiaries in the "Roberto Duran" section of San Miguelito were made at 10 percent--the cost of the HG loan at the time of authorization, but at least 2 percent below the market rate during project implementation. There was no cost to MIVI for the land for the housing development. However, its estimated market value was $1.00 per square meter, representing a modest subsidy to the beneficiaries of about $180 per lot. Originally, it was planned that San Miguelito users would amortize the full cost of their newly installed water, sewerage, and electrical infrastructure. But early in the project, IDAAN and IRHE agreed to the innovation of distributing capital cost over all users in Panama City. This enabled the utilities to reduce the tariffs in San Miguelito while fully recovering their investments.

Project-financed infrastructure seems to have been delivered in timely fashion in accordance with the revised targets. All households with access to water and electricity have made connections, although only about a quarter have connected to sewerage so far, probably due to the high cost of installing bathroom facilities (estimated to be over $500 per home).

The housing component ran into greater difficulties. The Project Paper called for MIVI to make available 10 different types of solutions, ranging from a 200-square-meter lot with minimal services to a 35-square-meter piso-techo (floor-roof, with no walls) unit on a fully serviced lot. During the first year little construction occurred in "Roberto Duran," and only about 100 persons applied for housing solutions. Various misplaced assumptions accounted for this weak demand. Many households that were slated to be displaced by titling refused to relocate. Fewer households were displaced by upgrading activities than had been anticipated. Due to lack of communication between MIVI and HLC, there was little promotion of the lots, despite the complexity of this part of the housing component, and the fact that it was MIVI's first attempt to reach the lowest income groups in San Miguelito. In January 1979, the total number of solutions was reduced from 2,500 to 2,113, due to inflation and high earth-moving costs which had been underestimated by $1.9 million in the design. MIVI could not manage the administrative complexities of 10 different solutions; thus, the number was reduced to three: serviced lots (1,310), 24-square-meter piso-techo units (683), and a small number of 25-square-meter core units (120).

These modifications did not solve the demand problem. Local officials had greatly overestimated the number of displaced households that would want the new housing solutions. In July 1979, the housing was opened to all residents of San Miguelito. Applications nearly tripled, but the total remained well below the number of solutions under construction. At year's end, the program was opened to the entire Panama metropolitan area, and applications poured in. By March 1980, 56 percent of the planned piso-techo units had been sold. A severe imbalance remained, however, as less than 1 percent of the planned 1,310 serviced lots had been sold. This caused a second series of modifications to be adopted. MIVI decided to reduce the number of serviced lots to those that could be sold and to build more of the popular piso-techo solutions. In an effort to address the problem of rapidly rising costs, MIVI introduced an attached, or rowhouse, version of the piso-techo on smaller lots. MIVI also contributed to the modest subsidy for beneficiaries by maintaining a 10-percent interest rate on mortgages when commercial mortgage rates were at 12 percent. Under this revised plan, a total of 1,414 solutions (260 lots, 554 detached and 480 attached piso-techo units, and 120 core units) were finally delivered.

In order to meet cost increases which exceeded the amount of the HG loan, the GOP had to add $1.9 million to its initial cash contribution of $100,000 for the housing component. The water and sewer utility (IDAAN) also had to add $400,000 to cover unexpected excavation expenses due to inadequate subsoil analyses.

B. Implicit Objectives

The team found it difficult to determine what the intended impact of HG 008 and HG 009 on beneficiaries had been. Both Project Papers' Logical Frameworks tended to focus on outputs (number of shelter solutions) to be delivered and on purposes which emphasized institutional development. The same general pattern was noted in the Logical Framework for HG 011. This probably reflects the difficulty of establishing causal relationships between shelter solutions and improvements in beneficiaries' quality of life (the usual purpose and goal objectives of other AID projects). How, for example, would one establish a clear connection between a serviced lot and quantified improvements in health, educational level, and income, when so many other variables influence these changes over a long time span? Indeed, measuring project success in terms of outputs (shelter solutions) seems to be consistent with the way beneficiaries view shelter solutions: as end objectives in themselves. Such a viewpoint may be even more appropriate in Panama where incomes and quality of life are higher than elsewhere, making jobs and housing the top priorities.

In order to determine what the HG projects had actually accomplished for the low-income beneficiaries, the evaluation team had to identify the "implicit objectives" as drawn from Project Papers, implementation documents, various shelter sector studies, interviews with beneficiaries, and discussions with MIVI shelter project designers and USAID/Panama personnel. The implicit objectives could be defined as a set of untested assumptions as to what benefits should derive from shelter solutions.

1. Improved Quality of Life and Socioeconomic Mobility

The most dramatic, positive impact was an improved standard of living, particularly in Nuevo Chorrillo. Comparisons of previous and current housing conditions of Nuevo Chorrillo residents speak for themselves. In the previous living space, an average of six people had shared 23 square meters while today an average of 5.7 people share 57.4 square meters--an increase of 150 percent in available living space per person. Previously, one water faucet had been shared by an average of 30 people, and toilet facilities by an average of 29 people. Now, these are shared by the average 5.7 people who live under one roof.

The new houses in Nuevo Chorrillo are sturdily built of cement block and designed for privacy, good lighting, and

ventilation. Residents feel secure against fire and lightning, which had been constant threats in the slum environment.

Increased distance to work appears to be more than compensated for by significantly less crowded conditions, neighborhood peace and tranquility, a chance to have a garden, and the absence of a criminal element.

Residents of Nuevo Chorrillo saw themselves as significantly raised in status, from urban slum dwellers to home and property owners. Former residents of Chorrillo and San Miguelito deplored the teenage gangs there and the frequent accidents to which their children had been exposed. The fact that they were now able to offer their children a better life was especially noted as a key to high satisfaction with the new community. All respondents felt they could make plans for themselves and their children in a way that they could not do in their more precarious former environments.

According to Cooperative records, average home improvement loans were $1,000 per household. This amount seems rather high given the average income levels of the households and the known rate of delinquency of repayment of mortgage loans. However, it is evident even to the casual observer that a great deal of work and loving attention has been lavished on the houses by their owners, in the form of retaining walls, terraces and porches, extra bedrooms, paint, and exterior decoration. Many of the units now compare favorably with two-bedroom, lower middle-income housing being built by the private sector in the suburbs of Panama City for $20,000 and up. This kind of interest in home improvement is consistent with the long-term, progressive upgrading of lots and structures by beneficiaries noted by MIVI in its 1980 study of the "Nuevo Veranillo" section of San Miguelito.

There have also been improvements in the standard of living for all residents of San Miguelito under HG 009, although not as dramatic as in Nuevo Chorrillo. As noted, much of San Miguelito has been developing slowly and progressively since the 1960s, evolving from rough squatter areas into stable communities of solid, durable homes which are assembled slowly as their owners gain the resources. The upgrading effort under HG 009 essentially assisted this natural process by providing communities with services they could not provide for themselves.

Residents interviewed in the "Gelabert," "Parusia," "Fatima," and "Nuevo Veranillo" sections of San Miguelito were extremely pleased with what they regarded as a vast improvement in their circumstances following HG 009.

The existence of a new sewerage disposal network has meant that contaminated water is not running through the streets as

it did before. Families interviewed who had not yet connected to the sewerage system expected to join the system as soon as their resources permitted. Construction of streets and drainage under HG 009 eliminated standing pools of water which had been breeding grounds for disease-bearing insects and organisms. One family mentioned a noticeable drop in skin infections among their children, but other beneficiaries did not perceive improved family health as a consequence of the new shelter solutions.

Former squatters who acquired title to the lots they had settled felt pride of ownership and satisfaction with what they had achieved. They now had something of value to leave to their children, and they felt more secure about making plans for their childrens' education. No one was interested in relocating to obtain new housing (i.e., one of MIVI's piso-techo units).

All the people interviewed in San Miguelito, including those in "Roberto Duran," stated that they felt the area had definitely improved. People who had had to clear their own lots, leave their shacks at 5:00 a.m. to line up for water at the public tap, cross large muddy areas on foot, and read by candlelight, are very happy with the improved conditions. They feel that they and their community have achieved a heightened status in the eyes of others.

The team began with the tentative hypothesis that shelter solutions themselves could be a source of employment and income generation for beneficiaries. The theory was that houses or upgraded services could offer space and utilities that were not previously available for small, home-based enterprises such as dressmaking or repair of small household appliances, or for the rental of rooms to nonfamily members.

This hypothesis was not supported by the Nuevo Chorrillo and San Miguelito projects. Appendix A, Table A-1 shows a slight real increase in household income (2.3 percent per year) in "Roberto Duran" and a small decrease in household income for Nuevo Chorrillo (-2.3 percent per year). Beneficiaries interviewed by the team did not see any relationships between changes in household income and the acquisition or improvement of the unit. In 3 out of the 10 households interviewed in Nuevo Chorrillo, income-earning activity that had not taken place in the previous home was taking place in the new unit.

A fair number of these home-based enterprises seemed to operate in Nuevo Chorrillo, in spite of Cooperative regulations against them. These small service or retail operations probably do not earn much or create much employment. However, it is worth noting that many enterprises (child care and small retail snack stores) seem to be operated by women, especially female household members who are unable to go out to work.

All of the 16 households interviewed in San Miguelito had experienced some increase in income from the time they acquired either new units or improved services. However, they did not attribute their income increase to the new unit or improved infrastructure (except for two cases). One was a food store which the female owner calculated was netting $260 per month. The other, a combination food store and laundromat, took in approximately $700 per month according to the owner, also a woman. These people began their businesses as a consequence of having obtained their own houses and lots. Both businesses were dependent upon electric services (with electric bills well over $100 per month).

The team noted that incomes tended to remain pretty much the same in real terms, although in "Roberto Duran" some improvements were observed. A 1981 report on this area of San Miguelito revealed the median household income to be around $215 per month, as compared to $187 (in 1980 constant prices) at the beginning of the project.[11] In real terms, this is only a small increase (2.3 percent per year) and indicates that low-income groups in general probably are not keeping pace with national or urban growth as shown by other economic indicators. This increase is lower, for example, than real GNP growth in the same period.

This indicates that current methodology for defining the HG target group by taking every one below the current median income for Panama City may give a false impression of who the beneficiaries should be. Most of the people MIVI should be concerned with are not participating in the current economic upswing. Indeed, they seem to be falling even farther behind in real terms.

Table A-1, Appendix A, shows the same slow rate of income increase for the older, non-HG "Nuevo Veranillo" beneficiaries as for the more recent HG 008 and HG 009 beneficiaries. In "Nuevo Veranillo," the 1968 median income ($270 in 1980 prices for the beneficiaries of the lots and the core units) had increased to $300 for the lot beneficiaries and decreased to $265 for the beneficiaries of the core units. The period of comparison--12 years--was greater, particularly for those who entered the project as beneficiaries of the sites and services scheme.

The differences among the projects do not appear to be related to general economic trends. Real GDP in Panama grew at a 4.9 percent annual rate over the 1968-1976 period, and at a

---

[11] MIVI: "Seguimiento a los Proyectos Roberto Duran y Torrijos-Carter," Informe No. 1, Panama, Marzo 1981.

6 percent annual rate between 1977 and 1980. These results call into question another hypothesis often cited by shelter project designers: that beneficiary incomes increase very slowly over the first five years of a change in living conditions, and that increases accelerate as the process of resettlement gives way to increased stability. Clearly, this hypothesis needs testing by detailed beneficiary studies, especially because it relates so closely to beneficiaries' ability to pay for certain shelter solutions.

Owner payments for mortgages or home improvements are usually considered an important form of investment. In the United States, such investment leads to significantly increased wealth through equity in a valuable, salable commodity: a house. To the team's surprise, it appeared that among low-income housing beneficiaries in Panama, new housing units or improved services may not carry such an economic or cultural significance. Virtually none of the households interviewed in Nuevo Chorrillo or San Miguelito had even considered selling their houses. Most seemed to invest in improvements as a form of increasing their satisfaction with the appearance of the units and of expanding usable space. The use of their scarce resources to improve the houses over time or to pay off their mortgages (as has been done by 91 percent of "Nuevo Veranillo" home owners) may reflect the level of priority low-income households assign to these efforts, without thought of eventual return on investment.

Both the Nuevo Chorrillo Cooperative and the GOP impose strict rules governing the sale of low-income housing units. Owners in Nuevo Chorrillo are allowed to sell only to the Cooperative or to someone approved by the Cooperative. They receive only what they put into it with nothing added for appreciation in market value. While intended to control speculation, these rules also diminish the potential financial benefit of housing as an investment. To 39 Cooperative members who left the community,[12] the Cooperative paid between $1,000 and $1,300 each, representing amortization and cost of improvements to the date of sale. No inference can be made as to the market value of the houses based on resale data, because a new owner pays the same amount as the Cooperative paid to the previous owner. The Cooperative stated that most of the house appraisals run close to $5,000, although some units have been appraised for as much as $14,000.

Table A-2, Appendix A, presents a comparison of estimated increase in the value of housing provided under HG 008 and

---

[12]The Cooperative's management did not know the reasons for departure.

HG 009 from the time of purchase until sale. Unfortunately, so few sales had been made that it was impossible to establish reliable market values of those properties. The closest the evaluation team was able to come to an estimate was the case of a homeowner in "Roberto Duran" who considered his unit to be worth $6,000, representing a 25-percent gain in current prices over the amount he had put in (original value of the house plus improvements). "Nuevo Veranillo," which is an older, more established settlement, provides a little more insight. There, the owners of both piso-techo units and what were originally serviced lots appraised the present value of their units at a similar median value, $12,000.[13] Allowing for a certain amount of caution in accepting the value that people place on their own houses, that would mean that the units had increased in value by 115 percent (in current prices) since the late 1960s, as the original value of the units was around $1,100, and homeowners had invested an average of $4,500 in improvements through the years.

No data were available to support another team hypothesis that gains in value added should be evident from upgrading of basic services under HG 009. Existing housing units would be assumed to have increased significantly in value as a result of new or improved availability of public services, especially as most of the cost was and is borne by the rest of the City of Panama. Owners of units in "Nuevo Veranillo" were said to be paying $1.50 per month to amortize installation costs and service charges, although $5.00 per month was estimated to be a more realistic figure. While there is no doubt that the low-income beneficiaries could not have absorbed the full installation costs, the Government of Panama may wish to consider ways to improve value-added taxation to recover at least a portion of these public sector outlays.

Interestingly, although beneficiaries of both HG 008 and HG 009 perceived their social status as improved and believed that others also perceived the improvement, neither they nor the community at large recognized their enhanced financial worth or credit-worthiness. In other countries and for other economic classes, a house can be used as security for loans; but not, it seems, in Panama. This is a function partly of beneficiaries' failure to approach the formal credit system and partly of the fact that the system still relies on salaried employment or a cosigner as security for loans to low-income persons.

---

[13]Houses on what were previously serviced lots appeared over time to have sold for as little as $1,191 (in constant 1980 dollars) and as much as $8,500. Former piso-techo units sold for prices ranging from $2,767 to $12,443.

Finally, although the new or improved housing units themselves do not appear to generate much employment, housing projects constitute a potentially important benefit in the form of employment for unskilled, low-income labor through the construction industry. Employment generation is one of the highest priorities of the GOP and USAID/Panama, because unemployment in low-income groups has been running at very high levels.

According to the Panamanian Chamber of Construction Enterprises (CAPAC), new laws especially attractive to banks were creating a considerable influx of foreign banks and their personnel. Resulting investments in new construction in Panama City were estimated to have reached a record $104.0 million in 1981, of which the public sector accounted for only $48.5 million. Construction jobs also hit a new high of 34,000 in 1980, as a result of this private sector building boom. This building surge in Panama City, however, was preceded by a 1977 "bottoming-out" which had been preceded by yet another record surge in 1973. By contrast, construction in San Miguelito was financed primarily by the public sector (MIVI) until 1978. Total investment in construction in San Miguelito declined steadily from a 1977 high of $23.0 million ($14.0 million from the public sector) to its current low of $5.0 million (zero from the public sector).

CAPAC expected the current building boom to end by June 1982, when another major "bottoming-out" was expected, with a consequent impact on unemployment (an estimated 4,000 unskilled workers could be laid off). CAPAC was keenly interested in seeing a strong revival of activity under the HG program to help provide an employment buffer for unskilled laborers. The problem is that the most labor-intensive activities are construction of houses (piso-techo and core unit) or installation of water and sewer lines. Each generates an estimated 150-200 unskilled jobs in construction, paying $1.15 per hour, for every $1 million invested.[14] On the other hand, it is precisely these high-cost solutions which HG beneficiaries can now least afford. Decisionmakers will have to evaluate the tradeoffs implicit in building high-priced solutions to help buffer the expected drop in unskilled employment, versus the need to offer lower cost solutions to HG beneficiaries. For the long term, it would seem desirable to unhook employment generation from the highly cyclical construction industry and from dependence on public, low-income housing programs by continuing to develop more stable sources of employment, such as light manufacturing, perhaps as adjuncts to the HG program.

---

[14]Obviously, there is a multiplier effect on jobs in construction materials and related enterprises, but no data were available on this.

2. Affordability and Beneficiary Information for Selection and Design

Neither HG 008 nor HG 009 was designed with a clear idea of what constituted an "affordable" range of shelter solutions. The Nuevo Chorrillo Cooperative Housing Project Paper assumed that the proposed housing would be affordable if the monthly payment did not exceed 25 percent of the median income for Panama City. A further stipulation--reflecting the relatively low income of the Cooperative membership--was that half of the units be affordable at the 20th percentile, taking 25 percent of income as the amount to be devoted to housing. Income data presented for the Cooperative's membership showed that approximately the poorest 15 percent of member households (with monthly incomes under $140) would have to pay more than 25 percent for the least expensive model of house. Thus, it was suggested that a minimum monthly income of $125 (or about 32 percent of total) be required for participation.

Affordability was treated in even more general terms in the San Miguelito Project Paper. The various upgrading and housing components were designed to be affordable to households with incomes below the median "prevailing in the area" of the project, but the Project Paper specified neither the relevant area nor the maximum income percentage. Applying the 25-percent rule, the anticipated monthly costs of most of the proposed housing alternatives including full utilities would have been affordable at the median household income of San Miguelito, which was determined by a 1974 survey to be about half the urban median for Panama City. Neither project took into consideration the full carrying cost of new housing, including full services.

Beneficiary selection criteria were not specifically addressed in the Project Papers. Beyond the minimum income requirements, it was expected that the Cooperative housing would serve the needs of the Chorrillo slum area. In San Miguelito, the infrastructure was planned for areas where it was lacking, and the housing was intended for households displaced by the other project activities.

In spite of the relative looseness of affordability calculations, the housing delivered in the early phases of Nuevo Chorrillo and "Roberto Duran" in San Miguelito appears to have been affordable to low-income beneficiaries. However, both projects now face the double problem of rising construction costs and stagnant incomes among the target beneficiaries. The two projects seem to have responded differently, with very different possible impacts on future beneficiaries.

During the first phase of construction in Nuevo Chorrillo, the average unit cost was reduced by eliminating the two higher cost models and expanding production of the other models. The down payment was lowered from 17 percent to 10 percent, and the monthly payment (which includes water and a Cooperative administrative fee) for the least expensive unit was increased slightly from the planned $40 to $42. The delivered housing, therefore, appears to have been affordable in terms of the original criteria. Costs do not appear to have been held down by the use of "mutual help" labor, which proved inefficient and required close supervision by skilled workers.[15] As a result, this innovation was dropped after the first phase.

The apparent success of the Cooperative in providing spacious housing affordable to the majority of its low-income clientele must be qualified by including the various subsidies[16] that were received for land, construction, and the development of community facilities. The overall value of the subsidy has been roughly estimated at over $2,000 per house built to date (see Appendix A, Table A-5).

Virtually all members have taken advantage of a Cooperative credit fund for home improvements. Over half of the survey respondents in Nuevo Chorrillo had made major improvements at an average cost of $1,000, an indication that they have the capacity to pay the carrying cost of the house, because they are also able to pay the cost of the improvements. This conclusion is not contradicted by the Cooperative's relatively high rate of internal delinquency on mortgage repayments, as this appeared to be more an administrative than financial problem.

The continued affordability of Cooperative housing is less certain. Under the second phase, 266 units have been built to date. The nominal cost of these units is about 20 percent above the original model, although the comparison is misleading since the size of the lot was reduced by one-sixth. At the same time, the nominal monthly payment on these units ($71) is almost 60 percent more than originally intended. This reflects the reduced down payment and an increased cost of financing from 10 percent to 11 percent. In the second phase, therefore, prospective Cooperative members no longer have a choice among house types and costs, and will need a minimum monthly income

---

[15]Cooperativa de Vivienda Nuevo Chorrillo, "Informe Sobre el Proyecto," November 1980.

[16]Subsidy is used to mean all costs of providing a housing solution which are not borne by the beneficiary, i.e., an effective income transfer to the beneficiary.

of about $285 to purchase a unit in Nuevo Chorrillo. (The Cooperative has begun to require a $250 minimum monthly income and proof of salaried employment for payroll deductions, thus restricting future potential beneficiaries.) The stated project intent to provide housing affordable at the 20th percentile of the overall urban population was fulfilled by the second-phase housing, since the income at that level was optimistically estimated at about $400 per month in December 1980.[17] But only about 35 percent of the households in the Chorrillo slum area will be able to afford the Cooperative's housing in the future.[18] (See discussion on page 24 of current methodology for determining median urban income.)

In "Roberto Duran," more than 80 percent of the initial 1979 buyers of serviced lots and piso-techo units were in the lowest quarters of the urban income distribution,[19] and nearly three-quarters came from San Miguelito, indicating that the low-income target group had benefited. Costs were reduced by a subsidy (much smaller than in Nuevo Chorrillo): in this case free acquisition of the housing site from the Municipality of San Miguelito.

By early 1981, the cost of the detached piso-techo had increased by 58 percent, and the monthly payment had increased from $35 to $50. At that price, the detached unit may be considered unaffordable to the lowest 20 to 30 percent of the target group of poor households,[20] but overall demand remained strong. By introducing the innovation of the attached piso-techo on smaller lots with a monthly cost of $42 to $46, MIVI made affordable housing available to households as low as the 10th-20th percentile range.

It is interesting to note that the serviced lots, which have a much lower carrying charge of $22 per month, may actually be less affordable than a lot-plus-house solution. Community pressure to build a house of costly durable materials on the lots may prevent the progressive construction and upgrading

---

[17]USAID/Panama, RHO/PSA internal memo, dated August 24, 1981.

[18]Based on income data from MIVI, "Renovacion Urbana, Primera Fase," May 1981. Assumes that 25 percent of income is spent for housing.

[19]MIVI, "Seguimiento."

[20]Estimates of current incomes in San Miguelito are based on data for various low-income groups considered representative of the area, including "Nuevo Veranillo," "Roberto Duran," and "Torrijos-Carter."

process observed in older projects, such as "Nuevo Veranillo." For many households in squatter areas, it may be financially preferable to remain in the established community, retain the present housing investment, and pay for improved services, rather than undertake a major investment in new housing on a serviced but empty lot.[21]

The record of improvements made to the piso-techo units in "Roberto Duran" is an indication that they have generally proved affordable to their owners. A MIVI study[22] carried out two years after project initiation showed that 85 percent of households had enclosed their new piso-techo unit within five months, and 55 percent had hired labor to do so. The absence of a down payment requirement by MIVI probably freed up beneficiary capital for enclosure and improvements. Delinquency information on "Roberto Duran" could not be obtained from the MIVI.

Water and electricity services installed throughout San Miguelito seem to be widely affordable. The combined monthly payment represents 7 to 8 percent of the median income in the area. At most, 5 percent of the households would have to pay more than 25 percent of their income for these services. Well over 90 percent of households with access to water and electricity have paid for connections.[23] Affordability is a clear problem with the new sewerage systems, as less than one-quarter of the households with access have connected to date, due to the high cost of installing sanitary facilities. The team's survey revealed that connections, including sanitary facilities, were paid for out of savings.

The Nuevo Chorrillo and San Miguelito projects clearly illustrate the trade-off between design standards and beneficiary impact that is central to the affordability issue. By narrowing the range of solutions and maintaining comparatively high housing standards, Nuevo Chorrillo may have priced itself beyond the means of the majority of intended beneficiaries. The situation will worsen with increased costs of financing, unless the Cooperative adopts more economical solutions. In San Miguelito, on the other hand, the range of solutions offered, plus the design and target group modifications made in

---

[21]This may have influenced the decision of some 2,000 San Miguelito households who refused to relocate on new, titled lots under HG 009.

[22]MIVI, "Seguimiento."

[23]These figures are based on verbal responses from officials of the various public service agencies.

the "Roberto Duran" housing component, demonstrated emerging MIVI capacity to respond to rising costs and beneficiary preferences, once these were known. The problem is that the response was slow, allowing costs to rise still further while design modifications were under discussion.

The affordability problem points up the need to incorporate better information on beneficiaries into both housing design and beneficiary selection, to ensure that solutions continue to be available to the lowest income groups.

At the design level, the target group is too broadly defined. The affordability of a proposed solution is typically measured in terms of the median urban income. The urban income distribution currently used by MIVI and AID was projected from the previous census on the assumption that incomes at all levels had increased in proportion to national income. However, available evidence suggests that lower income groups in Panama City have not kept pace (see Appendix A, Table A-6). As a result, designers probably are overestimating beneficiary capacity to pay. As cost pressures mount, there may be a tendency to design solutions based on increasingly unrealistic income assumptions (as has already been noted in Nuevo Chorrillo).

Designers also need a better working definition of affordability. The 25-percent-of-income criterion (presented in the HG 008 Project Paper without justification, and not addressed at all in the HG 009 document) is simply an untested rule of thumb. MIVI has experimented with several formulas but has yet to define what would be reasonable for Panama at this time. The notion is a slippery one, to be sure, and may have to be defined for specific target groups. MIVI studies have documented a pattern of increasing willingness to pay a higher percentage of income for housing as income levels decline, reaching as high as 30 percent in the lowest income brackets.[24] Furthermore, the costs of services entailed in the acquisition of a new house may require an additional 10 percent of income. Therefore, they should be included in calculating affordability.

At the selection stage, the failure to incorporate accurate beneficiary information has resulted in procedures which are conservative and may be potentially discriminatory. In judging beneficiary capacity to pay, MIVI takes into consideration only the highest single stable income in the

---

[24]MIVI, "Damnificados de Curundu y Otros Sectores que Fueron Reubicados a Roberto Duran y Torrijos-Carter," November 1981.

household.[25] There has been an increasing tendency to prefer a salaried income, from which housing payments can be made directly through payroll deduction (called "direct discount"). The assumption that the direct discount reduces delinquency is not supported by MIVI's own studies.[26] Direct discount may appear reliable, but only on paper. As soon as a household paying through direct discount becomes delinquent due to loss of salaried employment, the MIVI shifts it out of the direct discount category.

The direct discount may also be a poor predictor of delinquency, because salaries are an incomplete measure of household income. Over 60 percent of low-income households in the team's informal sample had nonsalaried incomes. Salaries accounted for just 60 percent of total income. The median income of households without salaries appeared to be only slightly less than that of households with salaries. By focusing on a single, supposedly stable income, the MIVI may exclude households with a genuine need and capacity to pay. The direct discount may be particularly prejudicial against women applicants. Only 44 percent of female-headed households in the survey sample had a salaried income, compared to 88 percent of male-headed households, although the median total incomes for the two groups were similar (see Table A-6, Appendix A).

In sum, the pressure of rising costs creates a need to base project design and beneficiary selection on better information for specific target groups. At the design stage, the affordability of proposed housing solutions could better be ensured in targeted areas through pre-design household budget surveys which measure the total amount and stability of household income and the willingness and capacity of households to absorb the full carrying costs of improved housing. This information could then be matched with the costs of the full range of available solutions[27] to determine a proper mix of solutions. Such a matching process would represent a necessary, fundamental change from past ways of designing projects. Detailed, real beneficiary data might also provide a basis for designing innovative financial mechanisms such as a monthly payment which starts lower than the current fixed payment and increases in nominal terms over time.

---

[25]MIVI, "Seguimiento."

[26]MIVI, "Analisis de Cambios Socio-economicos de Familias de Nuevo Veranillo 1968-1980," January 1981.

[27]See Appendix A, Figure A-2 for an illustrative list of alternative solutions and their comparative affordability.

At the beneficiary selection stage, there is a need for thorough analysis of the causes of delinquency among current project beneficiaries to provide a basis for more rational and equitable selection procedures, and to design effective mechanisms for reducing and controlling delinquency.

Finally, efforts to obtain information from beneficiaries must be complemented by improved publicity of housing opportunities and alternatives. Lack of knowledge of MIVI projects was an apparent factor in the low demand observed in the early period of "Roberto Duran" and has been documented by a MIVI study of a potential target community.[28] It may also explain unrealistic cost expectations held by some potential beneficiaries. An ongoing publicity campaign is the minimum needed to ensure that the intended beneficiaries are brought into the selection process. Indeed, MIVI may wish to adopt a more active stance by working through community organizations to encourage and assist potential beneficiaries to apply for appropriate housing solutions.

3. Cost Efficiency and Design Alternatives

The rising costs of construction and the scarcity of housing resources create strong pressures to find more cost-efficient solutions; that is, ways of providing benefits to more low-income households with a limited amount of program funds.

Projects HG 008, 009, and 011 offer a range of solutions which allow comparisons of cost efficiency. These comparisons (Appendix A, Table A-4) point to several conclusions. First, MIVI has responded to the challenge of rising costs with a variety of solutions. Until very recently, however, MIVI solutions were limited by the assumption that improved housing required relocation from an inadequate residence to a new project site. Second, urban upgrading, particularly provision of water and electricity, offer significant cost-efficiency gains over solutions that involve a new housing unit. Third, there is a positive relationship between cost efficiency and affordability. The more "minimal" solutions provide benefits to a greater number of households per dollar of investment and to a wider range of income levels within the target group. Fourth, the Nuevo Chorrillo Cooperative appears to have some advantages over MIVI, in that it can provide its standard housing unit at approximately the same cost efficiency as MIVI's smaller, less

---

[28]MIVI, "Nuevo Tivoli: Analisis Socio-economico Proyectado al Programa de Renovacion Urbana," October 1981.

complete core unit. This may be due to a higher level of subsidization.[29] It would be instructive to do a detailed comparative cost analysis of Cooperative and MIVI housing to identify possible economies that could be applied to MIVI solutions.

In certain circumstances, the most cost-efficient solutions may also be the most cost effective; that is, they may provide a similarly adequate level of housing at lower cost. In "Nuevo Veranillo," beneficiaries gradually expanded and improved upon their original solution (whether lot or piso-techo) as resources permitted, so that at the end of a 10- to 12-year period, all units had attained the same approximate size and market value.[30] Thus, it seems probable that lower cost solutions (for example, community and self-help labor) are just as cost efficient as any other approach in meeting the target group's long-term shelter needs, and minimal solutions may be more cost effective because they leverage more private resources from the beneficiary per unit of public investment than more complete solutions with higher unit costs.

Cost-efficiency and cost-effectiveness measures are useful guides, but are insufficient to determine the proper mix of solutions for a given target group. Detailed household studies are also needed to collect information on preferences for various types of solutions and priorities with regard to relocation versus upgrading or among the various types of upgrading services. (For example, in San Miguelito, water and electricity seem to have priority among beneficiaries over sewerage and paved streets.)

In general, few of the many opportunities available for cost reductions in use of materials, design, and technology have been explored in shelter solution design to date. For example, both Nuevo Chorrillo and "Roberto Duran" houses have used masonry (cement blocks) as a wall material, although masonry costs substantially more than readily available alternatives such as unreinforced rubble-filled walls (used in countries with similar climates), wood, asbestos, woven plant fibers, and chain-link fence. Most roofs have been of sheet-metal zinc, a material slightly more expensive than asbestos cement which offers better reflection and insulation in a tropical climate. There are less expensive floor materials than poured concrete slab, such as raised wooden platforms and

---

[29]Mutual-help labor is not a factor since the unit (Type B) cost used here refers to construction, which occurred after that particular innovation was dropped.

[30]MIVI, "Estudio de Construccion Progresiva," September 1980.

various types of tile. Designers could also give more consideration to the use of prefabricated foundation elements. MIVI and private builders may wish to take advantage of a considerable amount of low-cost materials research already carried out in other Latin American countries.[31] Technical assistance for the creation of domestic research and adaptation capacity would also be very useful.

Unanticipated project costs have resulted from poor site evaluation. In "Roberto Duran," cost overruns of $2.3 million were incurred when earthmoving operations encountered unexpectedly rocky terrain. Earthmoving has caused serious erosion in "Roberto Duran" which is costing additional money to correct. Nuevo Chorrillo faced a possible $250,000 expenditure to bore 250-foot wells to reach the water table. Inadequate preliminary analyses indicated that shallower wells would meet the community's needs. While it may not have been feasible to change project locations, more careful survey and analysis at the outset could have alerted designers to the need for offsetting economies so that more solutions could be delivered at a more affordable price.

Greater attention to urban layout could have enhanced beneficiary satisfaction in Nuevo Chorrillo without necessarily increasing overall project cost. Both the Nuevo Chorrillo and "Roberto Duran" layouts offer public facilities demanded from mid-density, low-income neighborhoods (such as schools, health centers, and parks); however, "Roberto Duran" seems to have a better layout for beneficiary access to these services. Recreational, commercial, and other communal areas are clustered in a series of small, residential groups, whereas in Nuevo Chorrillo, the distance between houses and facilities seems to be arranged less conveniently. Residents of Nuevo Chorrillo could also benefit from the establishment of a small, centrally located shopping center.

---

[31]Some thought was given by the team to possible return to self-help or mutual-help construction to help reduce solution costs. Experience to date with housing units, at least, raises some questions about the ultimate cost of slower construction by these methods--which, in turn, delays the point at which the project can begin recovering costs. Further study of this option is needed before a reliable judgment can be made.

V. LESSONS LEARNED

A. Evaluation of Beneficiary Impact

It may be difficult to evaluate future HG projects for impact on beneficiaries, but it should be attempted.

Quality-of-life indicators which would permit some measurement of project impact on beneficiaries do not appear in the HG Project Papers' Logical Frameworks which were examined in Panama. Monitoring quantifiable quality-of-life indicators (e.g., improved health, educational status, and income) may be too expensive to be feasible under a loan program financed through external market rate borrowing, and it might not prove much in the long run. Nonetheless, shorter term improvements in beneficiary quality of life may be useful indicators of purpose-level achievement, e.g., reduced human densities, savings in time or labor, better provision of basic services, and cost efficiency of the solutions delivered. Such measures could help designers and managers determine the impact of the HG program on beneficiaries, rather than focus solely on outputs (number of shelter solutions) delivered and institutional development.

B. Beneficiary Preferences and Participation

Beneficiary preferences need to be determined and their participation sought to ensure project acceptability and success.

More minimal, cost-efficient solutions, such as upgraded urban services or home improvement loans, may make an important contribution to the home and community upgrading process in which beneficiaries are already engaged. Beneficiaries who already own property and homes, regardless of their state of repair, appear not to be as interested in new housing as in upgrading what they have, especially if a new solution would bring higher carrying costs. However, ownership is still a principal objective of many beneficiaries. It is perceived as security to plan for the future and a major step up in social status; though not, interestingly, as an investment to increase enhancement of net worth. Community participation was a catalyst for action under the Panama HG projects examined and constitutes a potent beneficiary resource which should be tapped and supported in future projects to ensure their acceptability and success.

C. Targeting and Design

Definition of the target group as the poorer half of the urban population is no longer an adequate guide for targeting or designing Panama HG projects.

Projects which aim to provide affordable housing at or below the median urban income level ignore significant differences in financial capacity within low-income groups and may, therefore, overlook the need for a wide range of solutions. When it is assumed that all urban income is rising in proportion to national per capita income, even when low-income groups are not keeping pace, the ability of low-income households to pay may increasingly be overestimated in design of housing solutions. Designers need target group-specific survey data which indicate actual capacity and willingness to pay for alternative housing solutions.

Beneficiary studies could help improve cost efficiency and utilization of the GOP's housing resources.

Experience seems to indicate that detailed preliminary beneficiary studies could reveal the beneficiaries' actual shelter priorities and help prevent errors in design assumptions that contribute to cost overruns and less than efficient use of GOP resources. This could help the GOP identify the most cost-efficient solutions; i.e., those which lower income beneficiaries prefer and could take advantage of most readily.

D. Affordability

Reliable measurement of affordability requires a full accounting of carrying costs and available household income.

Simple rules of thumb on the percentage of income that households can afford for housing generally overlook all the costs that are implicit in even the most minimal of solutions. The extent to which the full carrying cost of a shelter solution may be too high for the beneficiary can only be judged in relation to total disposable income and other resources of all household members, as well as willingness of the household to spend. These considerations are increasingly important in times of high inflation and decreasing purchasing power among low-income groups. Detailed studies of beneficiary household budgets are difficult but should be carried out over time to estimate income levels and stability, account for household expenditures, and gauge the impact of general economic trends on low-income households. Such data are an essential element of designing truly affordable solutions.

A multipronged attack is needed to improve the low-cost housing system, while protecting access and equity.

Beneficiary selection criteria (such as preference for salaried households) need to be examined to make sure these do not unnecessarily restrict access to certain subgroups, such as women. Research is needed on additional innovative ways to reduce costs, such as identification of less expensive local and imported material, lower construction standards, and use of self-help construction with technical assistance. Changing economic conditions indicate a need for experimentation with innovative financing mechanisms which could make shelter solutions more accessible, such as adjustable rate loans and mortgage insurance. The causes of beneficiary delinquency must be studied in order to devise selection criteria and loan supervision procedures which result in more reliable cost recovery for low-income housing and provide a basis for possible entry into a secondary mortgage market. Private community and cooperative organizations need to be assisted to expand the channels for access to low-cost housing. Institutional roles and responsibilities need to be clearly defined and coordinated to avoid unproductive competition or duplication.

Some subsidy may be required indefinitely to keep shelter solutions accessible to low-income beneficiaries.

Experience indicates that some form of subsidy is necessary at virtually all levels to make even the most economical of solutions accessible to intended beneficiaries. If the total subsidy (cash and in-kind) were identified and compared with actual beneficiary needs and capacities (derived from detailed beneficiary studies), the GOP would have the basis for more equitable distribution of the subsidy along the beneficiary spectrum, and for adjusting the subsidy according to availability of resources for low-income housing.

It is questionable whether, or to what degree, the HG program should be considered a significant contributor to employment generation.

The number of jobs (primarily unskilled construction labor) generated by the HG program probably has decreased over the past few years, due to inflation and program reorientation. Decisionmakers may have to consider the tradeoff between lower cost shelter solutions which require less labor input, and the use of HG-financed housing construction as a cyclical, temporary employment buffer. For the long term, other non-construction employment-generation activities, such as light manufacturing, should continue to be supported, possibly as adjuncts to the HG program.

APPENDIX A

TABLES AND GRAPHS

Table A-1. Income Trends for Beneficiaries

Project	Median Household Income		Percentage Real Annual Change	
	Before Project	Latest (in constant 1980 U.S.$)	Income	GDP
"Nuevo Veranillo"				
Serviced Lots	270 (1968 $)	300	+0.9	+5.2
Piso-Techo	270 (1968 $)	265	-0.1	
Nuevo Chorrillo	430 (1977 $)	401	-2.3	+4.5
"Roberto Duran"[1]	187 (1974 $)	215	+2.3	+3.8

[1]The comparison of "Roberto Duran" with the other projects may be tendentious. The 1974 figure is based on a survey of all of San Miguelito and the methodology is unknown to the team. Also, the major occupancy of "Roberto Duran" did not begin until 1979.

Sources: "Nuevo Veranillo": MIVI, "Analisis de Cambios Socio-Economicos de Familias de Nuevo Veranillo, 1968-1980." Nuevo Chorrillo: Team interviews; HG 008 Project Paper. "Roberto Duran": HG 009 Project Paper; MIVI, "Seguimiento a los Proyectos Roberto Duran y Torrijos-Carter."

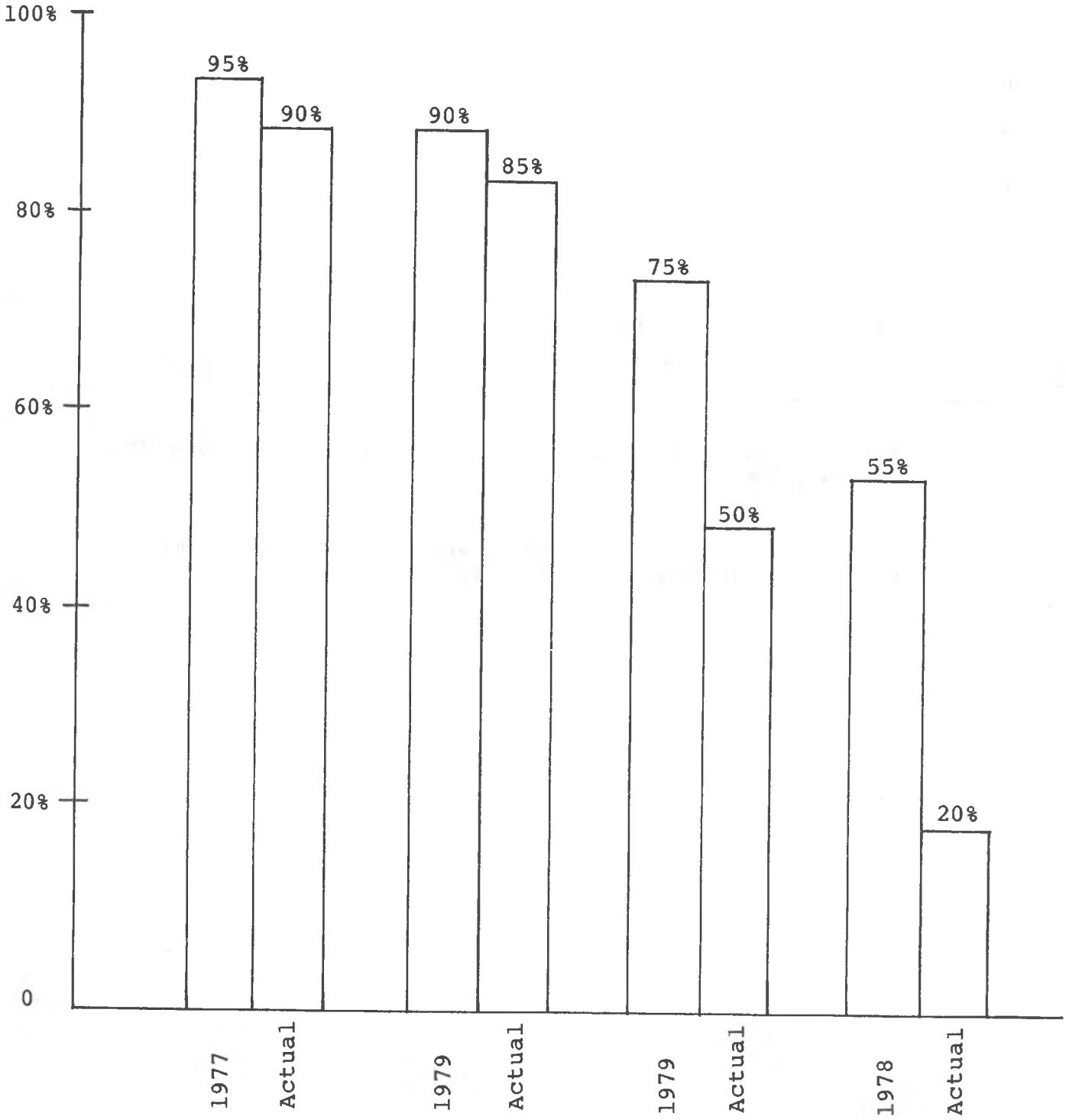
Table A-2. Value of Housing[1]

Project	Original Value	Value of Improvements	Estimated Sales Value[2]	Percentage Increase[2]
"Roberto Duran"	$3,400	$ 500		
			$ 3,000	700
			3,000	600
			4,000	1,500
Average	$3,350	$ 825	$ 6,000	54
Nuevo Chorrillo	$4,800	$2,000		
			$ 5,500	300
			5,094	-
			4,114	-
			-	3,000
			5,415	800
			6,750	3,000
			4,745	1,500
Average	$5,200	$1,767	$12,000	115

[1]Dates of purchase or improvement varied with each interview case. Thus, figures are in current, not constant, prices.

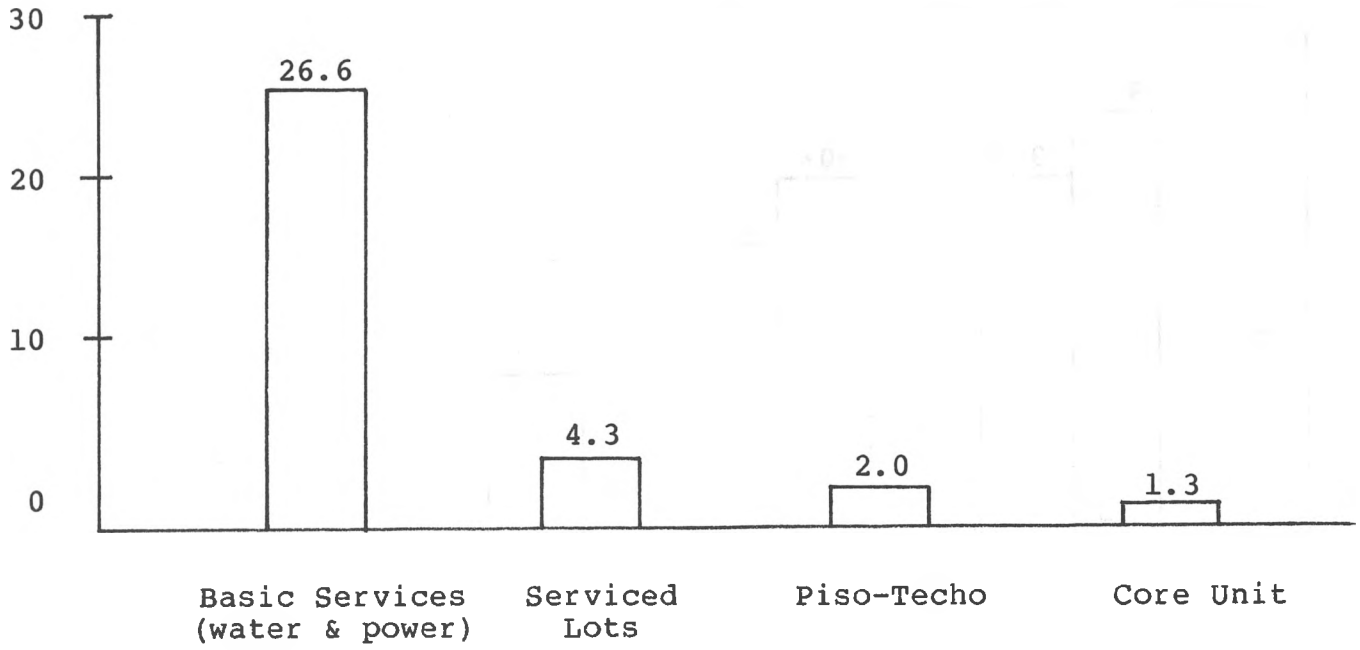
[2]From team interviews and Nuevo Chorrillo Cooperative data.

Figure A-1. Percentage of Low-Income Urban Population That Can Afford Housing Solutions



Source: Based on Appendix A, Table A-4 income figures.

Figure A-2. Number of Beneficiary Households Reached for Each $10,000 Invested



Sources: HG 009 and 011 Project Papers, and MIVI Socioeconomic Studies (based on Appendix A, Table A-4).

Table A-3. Income Trends in Project Areas and Panama City[1]

Area	Median Household Income in Constant (1980) Dollars		Percentage Real Annual Change	
	Before Project (1968)	Latest (1980)	Project	GDP
"Nuevo Veranillo"				
Serviced Lots	258	300	+1.2	
Piso-Techo	258	260	*	+2.6
All	258	275	+0.5	
Nuevo Chorrillo	416 (1977)	413 (1981)	*	+3.5
Panama City[2]	452 (1970)	414 (1975)	-1.7	+2.1

*Negligible.

[1]Income deflator: Consumer Price Index for Panama City, as reported in "Panama en Cifras."

[2]Another indication that low-income households in Panama City have not kept up with national income growth is that in 1970, the average household income ($551 in 1980 prices) was 22% greater than the median ($452). By 1975, the difference had widened to 54% (average = $637, median = $414).

Sources: Nuevo Veranillo: MIVI, "Analisis de Cambios Socio-Economicos de Familias de Nuevo Veranillo, 1968-1980" (Jan. 1981).
Nuevo Chorrillo: Team survey.
Panama City: MIPPE, "La Radiografia de la Pobreza," 1979; income survey carried out by Direccion de Estadistica y Censo in June 1975, as reported in Project Paper AID-DLC/P-2262.

Table A-4. Cost-Efficiency and Affordability of Alternative Solutions

Project Type	Cost per Beneficiary[1]	No. of Households Affected per $10,000 Investment	Monthly Payment ($U.S.)	Percentage of Low-Income Households That Can Afford the Solution[2]
HG 009: Urban Upgrading				
Electricity	213.2	46.9	13	95
Water	649.4	15.4	8	All
Sewerage	1,515.0	6.6	--[3]	--
HG 009: Minimal Housing				
Sites and Services	2,279	4.3	22	85-95
Piso-Techo, Attached	3,973	2.5	42	65-90
Piso-Techo, Detached	5,064	2.0	50	55-75
HG 008: Coop Housing				
Type "B"	6,754	1.5	71	35-50
HG 011: Basic Unit				
Attached	6,641	1.5	75	30-45
Detached	7,767	1.3	79	25-40

[1]Costs per beneficiary of urban upgrading are calculated as the life-of-project cost of the various services divided by the final estimated number of households given access to the corresponding service. For the housing solutions, costs per beneficiary are simply the most recent recorded or estimated sales prices.

[2]Based on recent income distribution samples drawn from various low-income areas in Panama City. Included are both project ("Roberto Duran," "Torrijos-Carter," "Nuevo Veranillo") and nonproject (Chorrillo, Curundu) areas, as well as an informal sample of applicants for "Roberto Duran." The distributions vary considerably (median monthly income range = $180-$315). The percentages given in this column are a rough average. It was assumed that households could devote 25% of income to the housing solution. It should be recalled that the monthly payments given in the table are the most recent, and in the cases of HG 008 and 009 reflect cost increases experienced in the course of the projects. Therefore, the solutions delivered in the early phases of those projects had somewhat lower monthly payments, and could have reached a larger proportion of the target group.

[3]The valorization charge for sewerage is included in the monthly water bill.

Table A-5. Estimated Subsidies to Nuevo Chorrillo

Purpose of Subsidy	Year	Source	Form of Subsidy	Amount (1980 U.S.$)
Land Acquisition[1]	1973	Previous owner	Below-market price	$ 489,513
School Construction	1976		Donation	54,841
Urbanization[2]	1976	BHN	Below-market interest rate	468,210
Construction Financing	1976	IAF	Grant	575,837
Block, Door, and Window Factories; Buses	1976	IAF	Grant	431,877
Training Center	1980	IAF	Grant	126,400
Technical Assistance	(Several)	Local architects and lawyers	Unreimbursed	Unknown
Total Subsidy				$2,146,678
Per Completed House ($1,015)				$2,115
Per House in Total Community ($2,100)				$1,022

[1]Land subsidy calculation:

Area (ha)	Sale Price Total	Sale Price Per sq m	Estimated Market Value Per sq m	Estimated Total Market Value	Estimated Subsidy
39	$40,000	$0.10	$0.40	$156,000	$116,000
76	$150,000	$0.20	$0.40	$304,000	$154,000
					$270,000

Estimated market value is based on statement from seller that second, larger sale was at half the market rate at the time.

[2]Urbanization subsidy calculation: difference between total (undiscounted) payments over 20 years for a loan of $750,000 at rates of 7% (actual rate) and 10% (estimated interest rate in 1976).

Sources: AID Project Paper AID-DLC/P-2210; Cooperativa de Vivienda Nuevo Chorrillo, "Informe Sobre el Proyecto," November 1980.

Table A-6. Summary Data on 30 "Roberto Duran" Applicants[1]

	General Data				
			Percentage by Marital Status		
Households	Number	Average Age	Married	Free Union	Alone
Male Applicant	19 (63%)	27.7	58	31	11
Female Applicant	11 (37%)	29.2	36	36	27
All	30	28.2	50	33	17

	Average Number of Children Under 18			
	Married	Free Union	Alone	All
Male Applicant	1.6	1.6	1.0	1.57
Female Applicant	1.75	2.25	3.3	2.36
All	1.66	1.90	2.4	1.85

	Average Size of Household			
	Married	Free Union	Alone	All
Male Applicant	3.9	3.66	5.0	3.94
Female Applicant	3.75	4.25	4.66	4.18
All	3.86	3.90	4.80	4.03

	Average Monthly Income of Applicant			
	Married	Free Union	Alone	All
Male Applicant	$270	$329	$276	$289
Female Applicant	176	71	212	147
All	$244	$225	$237	$236

	Average Monthly Household Income			
	Married	Free Union	Alone	All
Male Applicant	$327	$371	$545	$362
Female Applicant	297	351	212	293
All	$319	$362	$345	$337

	Percentage of Applicants With Salary			
	Married	Free Union	Alone	All
Male Applicant	91	100	100	94
Female Applicant	25	50	66	45
All	73	80	80	76

[1]Data taken on first 30 male and female applicants, with effort to divide examples among married, free union, and beneficiaries living alone. Sample is considered informal and is not statistically drawn.

Table A-6. Summary Data on 30 "Roberto Duran" Applicants (cont.)

Monthly Household Income Distribution

Amount[1] ($U.S.)	Percentage	Cumulative Percentage
0- 99	--	--
100-199	16.7	16.7
200-299	30.0	46.7
300-399	20.0	66.7
400-499	16.7	83.4
500-599	13.3	96.7
600-699	--	96.7
700+	3.3	100.0

[1]Median = U.S. $300

Characteristics of Applicants by Solution

Solution	Percentage Male Applicants	Average Size Household	Average Income	Average Per Capita Income	Percentage with Salary
Piso-Techo, Detached	70	3.6	328	97	70
Piso-Techo, Attached	33	4.66	315	66	66
Lot	68	4.31	355	93	87
Overall	63	4.03	337	90	76

Source: Applicant records provided by MIVI.

Table A-7. HG 009 Outputs

Component	A Original Target (number of households)	B Revised Target (number of households)	C Number of Households Reached	D Number of Households Using or Connected to Service	E Percentage of Target Population Benefited (D ÷ B)
Water and Sewer	11,000	12,142		4,494	37
Electricity	6,045	6,100	6,100		100
Houses	-0-	1,414	541	541	38
Serviced and Unserviced Lots	2,500	150	150	Unknown	Unknown
Home Improvement Loans					
Titles Adjudicated[1]	5,400		3,300	NA	

[1]Number of titles to be adjudicated was not included as a Logical Framework output, but did appear in the text of the HG 009 Project Paper.

APPENDIX B

METHODOLOGY AND SUMMARY INTERVIEW RESULTS

I. PROJECT SELECTION AND GENERAL APPROACH

The team selected two HG projects for in-depth consideration: the Nuevo Chorrillo Housing Cooperative project (HG 008), authorized in 1976 for $3.4 million, and the San Miguelito Slum Upgrading and Improvement project (HG 009), authorized in 1977 for $15 million. HG projects prior to 1974 were not examined, because they were not intended for the same kinds of low-income beneficiaries as projects developed after AID's New Directions policy went into effect, and thus could not provide impact information on AID's newly defined target group. The team also looked at a low-income housing project financed in 1967 by the GOP in the "Nuevo Veranillo" section of the San Miguelito District, contiguous to Panama City. Although this project was not HG financed, the beneficiaries and the solutions offered (service lots, basic unit, and piso-techo--a floor-roof unit) greatly resembled the beneficiaries and solutions covered by the more recent HG projects, and the area had received some upgrading assistance under the HG 009 Slum Upgrading and Improvement project. "Nuevo Veranillo" provided some background for the determination of possible long-term impacts of traditional housing solutions, as well as of the more recent upgrading activities.

The team decided not to examine the 1978 Secondary Cities and Rural Areas project (HG 010), because GOP and AID priorities for the future seem to be principally in the urban areas where the vast majority of Panama's poor are concentrated. Nor did the team consider the five-year, $75 million Shelter and Community Upgrading project (HG 011) in great depth, because this project was so recently authorized that impact on beneficiaries could not be judged adequately. However, the project design of HG 011 was examined to determine whether it was responsive to the lessons learned from previous low-income housing efforts, as well as to current problems confronting low-income housing planners.

In addition, the team considered GOP experience (as described in various MIVI studies) with other low-income housing financed from sources other than the HG program, such as the "Cabo Verde" and "Nuevo Tivoli" projects in the slum areas of Panama City. The team also visited the World Bank-supported "Puerto Escondido" project in Colon, Panama's second largest urban area. This provided a broader picture of overall experience in providing low-income housing to the poor majority in Panama.

The following is a brief description of other non-HG, low-income housing projects that were examined and which influenced the team's thinking.

A. "Nuevo Veranillo"

Under a program carried out from 1967 to 1970 by MIVI's predecessor agency, IVU, 438 lots and 500 piso-techo solutions were provided to low-income residents of the "Nuevo Veranillo" section of San Miguelito. Beneficiaries were helped to move their wooden squatter dwellings to the new lots or were given loans to assist in the process of enclosing the piso-techo. "Nuevo Veranillo" was among the areas of San Miguelito which also received upgraded service infrastructure under HG 009.

B. "Cerro Batea"

From 1976 to 1979, the Housing Ministry constructed another 1,203 core unit houses and 54 rowhouses in the "Cerro Batea" Section of San Miguelito. The MIVI Study of Progressive Construction in Nuevo Veranillo and Cerro Batea gives some interesting insights into the ways in which low-income families expanded and improved their housing units over time.

C. "Cabo Verde"

Another MIVI experimental project subsidized the housing of low-income inhabitants from the "Cabo Verde" and "Llano Bonito" slum areas in five-story buildings containing a total of 380 apartments. The project included construction of barracks to house beneficiary families while the new buildings were under construction. A study of the "Cabo Verde" project issued by the MIVI in October 1980 provides some early information on beneficiary delinquency in monthly rental payments for their units.

D. "Nuevo Tivoli"

A prefeasibility study issued by MIVI in October 1981 looked at proposed beneficiaries of an urban renewal program in the "Nuevo Tivoli" section of the Curundu squatter area. Of 284 families in the area, 225 lived in just one room, 18 shared a room, 10 families had two rooms, and 31 enjoyed the relative luxury of a separate house.

The team's methodology included detailed interviews of actual and potential beneficiaries (see summary tables in this appendix for reports on these interviews and a description of the interview design); review of project records available in

Washington (the Office of Housing and the LAC Bureau), USAID/ Panama (the Regional Office of Housing), and various participating GOP public and private entities; as well as discussions with Panamanian and AID officials responsible for aspects of the HG projects and for overall low-income housing efforts in Panama. A list of persons contacted and sources consulted appears in Appendix C.

The impact evaluation team found that the Government of Panama had made significant strides in the past few years in its efforts to direct shelter sector assistance--HG and non-HG--to the low-income target group. Serious efforts had been made to adapt design to beneficiary capacities and needs and to extend the type and number of "solutions"[1] offered to as wide a range of low-income beneficiaries as possible. Indeed, much of the information gathered by the impact evaluation team about beneficiaries and the impact of shelter projects on them was already known in one form or another to Panamanian authorities and USAID/Panama personnel responsible for such projects. This knowledge was reflected to a large extent in the design of the more recent HG 011 project, although it was not clear at the time of the impact evaluation how much of the HG 011 design could or would be implemented as described in the Project Paper.

At the request of USAID/Panama and the Regional Housing and Urban Development Office (USAID/RHO), the team presented tentative "Lessons Learned" to high officials of the Panamanian housing sector and their senior staffs a week prior to departure. The team found that the usefulness of much of the information presented lay not in its novelty to Panamanian and USAID listeners, but in reorienting their viewpoint to some extent to give priority to impact on beneficiaries in the planning and design process. The point was made that the growing problem with high costs of land and construction, as well as the absence of long-term commercial credit for mortgages, may make it imperative to try to reach more low-income people in new and creative ways, based on a more precise identification of the beneficiaries and a more detailed understanding of their actual needs and capacities.

---

[1]"Solution" is a term used to designate a product (e.g., a house) or a service delivered to the beneficiaries under a shelter sector project. The solutions could be considered equivalent to outputs in the Logical Framework system of AID's Project Papers.

II. IDENTIFYING IMPACT AREAS

The team found that it was not possible to base all of its findings and analyses on the HG project design. The Project Papers and Logical Frameworks for HG projects 008 and 009 turned out to have a number of unspecified but implicit assumptions about desired beneficiary impacts. In addition, the team found that project designers in Washington, USAID/Panama, and the GOP had a range of assumed objectives for low-income shelter, which inevitably influenced the final design and even implementation and evaluation of such projects. The team also found that it had its own hypotheses about what low-income shelter should and should not do to and for the beneficiaries.

Therefore, in addition to examining whether the explicit (Logical Framework) objectives of HG 008 and HG 009 were met, the team drew up a list of other, implicit objectives which could be identified. The final list stated that shelter solutions should be expected to:

- Improve beneficiaries' overall financial condition
- Make cost-efficient use of scarce public and private resources
- Be affordable to the intended beneficiaries
- Be directed to the greatest number and most needy among the target group, without undue exclusion of any subgroups (such as women)
- Improve the beneficiaries' quality of life and general sense of participation in society
- Enhance beneficiaries' social mobility
- Use appropriate technology in terms of physical design and layout of materials
- Provide access to adequate services
- Generate employment for low-income groups
- Have minimum adverse environmental consequences
- Be based on, and provide stimulus for, community participation

These categories were examined and various hypotheses were tested by the team, using interviews with beneficiaries, as well as contacts with USAID/Panama personnel and a wide range of Panamanians in the public and private sectors. (See Appendix C for a list of all contacts and documentation sources used.) For the evaluation report, the implicit objectives were compressed into three principal subheadings: (1) improved quality of life and social mobility, (2) affordability and beneficiary information for selection and design, and (3) cost-efficiency and design alternatives.

III. SELECTING BENEFICIARIES FOR INTERVIEWS

Two members of the impact evaluation team (one American and one Panamanian) devoted their time exclusively to interviews of beneficiaries.

During a number of site visits, the two team members simply spoke to persons who were at home and willing to be interviewed in Nuevo Chorrillo and "Roberto Duran" (San Miguelito) (communities which were recipients of the first HG-financed shelter and community services under the New Directions legislation). The Nuevo Chorrillo Cooperative Housing project is located 25 km from Panama City, and was entering its fifth year when the impact evaluation was conducted.

Interviews were conducted in the "Roberto Duran" area of the San Miguelito district, contiguous to Panama City, where new piso-techo (floor-roof) units had been constructed and urban upgrading carried out from 1977 to 1981. Interviews were also conducted in an area of San Miguelito that had received low-income housing from other than HG funds. Beneficiaries had received unserviced lots and piso-techo units in the latter part of the 1960s. The "Nuevo Veranillo" section was originally proposed by the team to serve as a control group. However, it was not possible to find a "pure" sample, as most of "Nuevo Veranillo" has received upgraded services under the HG 009 project fairly recently. Thus, "Nuevo Veranillo" interviews combined a look at how beneficiaries had utilized their original low-income housing unit or lot, and how upgraded services had enhanced their feelings of satisfaction with their housing solutions.

In addition, the team decided it would be desirable to interview a small number of low-income residents in urban areas from which future HG beneficiaries might come. The Curundu and Chorrillo slums of Panama City are areas from which beneficiaries of other projects have come in the past. They are also areas of priority concern to the Ministry of Housing for urban renewal and possible relocation of people whose current shelter does not meet the minimum standards of physical security.

IV. INTERVIEW METHODOLOGY

Since only five weeks had been allotted to the evaluation, it was decided that a longer, more detailed questionnaire for use with fewer beneficiaries would have to take the place of statistically valid sampling. A shorter interview would have permitted broader coverage, but considering the total universe of beneficiaries (up to 1,000 households in Nuevo Chorrillo and 11,000 households in San Miguelito), obtaining a statistically valid sample in the time available was a physical impossibility. Thus, the team relied on in-depth questioning, with a number of questions designed to elicit the same information several different ways as a cross-check. The same questionnaire served for Nuevo Chorrillo and "Roberto Duran." It began with a description of current and prior shelter, infrastructure, and community services, covered the process of acquiring the unit, and ended with the beneficiary's estimate of the benefits received in economic, social, cultural, physical, and legal terms.

A modified questionnaire was developed for use in San Miguelito, which attempted to compare the respondent's reaction to shelter, infrastructure, and community services (prior and subsequent to upgrading benefits) with perceived benefits from obtaining new but unfinished housing units (e.g., expandable core unit, piso-techo).

In the so-called unaffected areas of Curundu and old Chorrillo, interviewees were questioned about their current shelter situation and their aspirations for the future.

It was decided to stratify the beneficiary sample along lines which appeared to influence the kinds of decisions households make concerning shelter. Attempts were made to interview both male and female heads of household, and young and old families. The team also wanted to interview those who had expanded and improved their units as well as those who had not. In most instances, the team sought to interview those who had been in their units for a longer, rather than shorter, period, since the development process could be more easily appreciated.

A total of 32 interviews were carried out as follows:

Nuevo Chorrillo	10
"Roberto Duran"	5
San Miguelito ("Gelabert," "Parusia," "Fatima")	5

"Nuevo Veranillo"	6
Curundu	3
Chorrillo	3
Total	32

Most interviews lasted at least one hour, but in two instances the interviews lasted four hours. The respondents were patient, cooperative, and forthcoming in all instances but one, and responded openly to all questions except for the name of the sectoral representative to the Cooperative in Nuevo Chorrillo.

The acquisition of shelter, infrastructure, and community services is a dynamic process in Panama. The interviews attempted to ascertain the nature of the process and measure changes related to benefits received. Maximum subjectivity was sought from the respondents, as their perceived preferences and their economic, social, and cultural conditions are crucial to the success of any shelter, infrastructure, and community services program.

(The original questionnaires are available in bulk file from the team leader, A. McDonald, on request. Sample questionnaires and summaries of the data taken from the questionnaires are at the back of this appendix.)

V. TEAM ORGANIZATION

Future impact evaluation teams may find it useful to adopt the mode of organization that was used in Panama. The following schema (Exhibit B-1) was drawn up in the first few days at the suggestion of team economist/architect, Luzuriaga, and served as the work plan for the five-week evaluation effort. Based on the required final report outline, the work plan had the advantage of ensuring that all work was oriented toward the final report at all times, that all pieces of the report were accounted for, and that overlaps were identified and efforts were made to coordinate findings and conclusions where necessary.

The team continually referred back to this working outline of the final report in sharing and discussing its findings. The Findings/Analysis column was progressively filled in and refined as we went along.

Exhibit B-1. Evaluation Team Work Plan (Illustrative)

Topic/ Issues	Findings/ Analysis	Indicators/ Variables	Data Source	Action Assignments	Week (1,2,3,4,5)
I. Program Setting				C. Luzuriaga	
Pan. Econ. Situation -Hsng. sect. -Gen. bene. desc. -Overall fin. picture	(filled in as work progressed)	-Income data -Quality-of-life indic., e.g., health, educ. -Funds avail. to hsng. sector	-PPs -CDSS -MIVI -MIPPE -Shelter Ass. "Radiografia De la Pobreza" World Bank Rep.		
II. Project Description					
Outputs/ Purpose Goals HG 008 -700 i/c hsng. units -Potential for total dev. of 1400 -Dev. of inst. capac. to replicate		-From Log Frame	-PPs -Impl. Doc -Interviews w/officials of MIVI, MIPPE, Nvo. Chor. Coop, BHN & others	A. McDonald	-Review project documents -Start interviews
HG 009 -11,000 fam. w/water, & sewer -6,045 with elec. -4,000 with streets -2,500 with new home sites		-From Log Frame			
-Project Strategy HG 008 & HG 009		-N/A	-PP Project Implemented Documentation	A. McDonald	-Review doc.

Exhibit B-1. Evaluation Team Work Plan (Illustrative) (Cont.)

Topic/ Issues	Findings/ Analysis	Indicators/ Variables	Data Source	Action Assignments	Week (1,2,3,4,5)
-History of Actual Achiev.	(Filled in as work progressed)	-Outputs of HG 008 & HG 009	-Proj. Impl. Documentation -Evaluations -Interviews w/ Officials of MIVI, MOP, IDAAN, IRHE, High Com., and others	A. McDonald	-Review doc.
		-Purposes of HG 008 & HG 009	-Same as above + benef. interviews	All	-Review doc. -Conduct benef. interviews -Interviews w/ officials -Observation
		-Goals of HG 008 & HG 009	-Same	Same	-Same
-Unplanned Effects (to be identified dur. analysis)			-To be identified	All	
III/IV. Findings & Analysis					
-Explicit Objectives HG 008 HG 009 Social Technical Institutional Financial		-From PP Log Frame	-Bene. interviews -Impl. Doc. & Evaluations -Disc.w/offic. -Off. reports	M. Sorok V. Rivera A. McDonald C. Luzuriaga R. Roeser	
-Implicit Objectives (see list given in preceding section)		-Defined by team	-Bene. interviews -Imp. Doc. & Evaluations -Disc w/offic. -Off. reports	Divided among team according to specialty	
-Lessons Learned		-From analysis		All	

VI. BRIEFING PRESENTATION

At the request of USAID/Panama, the team organized a briefing for the Mission and high-level Panamanian officials on November 27, to present and discuss lessons learned from the impact evaluation. The agenda is in Exhibit B-2 to this appendix. The team found the time and energy necessary to mount such a presentation (about one solid week for everyone) hard to adjust to, given the priority to finish a draft evaluation report. On the whole, we would not recommend such a major undertaking for teams under more stringent time limitations.

Nonetheless, the mental processes involved in delineating our major points clearly and concisely and outlining the steps by which we arrived at these conclusions turned out to be most valuable in sharpening our thinking. In addition, organizers of impact evaluations need to recognize the legitimate interest and rights of both AID Missions and host country counterparts in knowing how such evaluations are proceeding, what major conclusions are being reached, and so on. Failure to allow time for interchange of this sort between teams and the people being evaluated can cause unnecessary ill will.

The reaction of Panamanian officials who attended the briefing (including the Minister and Vice Minister of Housing, the Minister of Planning, the Director of the National Mortgage Bank, and senior staff of each of these organizations) was instructive, and resulted in some modifications to the final report.

VII. BENEFICIARY INTERVIEWS AND FINDINGS

A. Nuevo Chorrillo

At the time of the November 1981 impact evaluation, the Nuevo Chorrillo Cooperative had 1,650 members, 28 percent of them female. Almost 1,100 new housing units had been turned over to members. Ten cooperative members were interviewed during November 4-7, 1981. Of these, eight belonged to the first phase and two to the second. The questionnaire covered information concerning the economic, social, physical, and cultural settings of the current shelter and community and how they compared with the member's previous circumstances. The average interview lasted 1 1/2 hours. In two instances the interviewees were hospitable and receptive to the questions, although discrepancies, lack of information, and unwillingness to give information will be discussed later in this appendix. In all instances, it was possible to observe the unit, its furnishings, and any improvements that had been made. It was

Exhibit B-2. Agenda for Impact Evaluation Team: Preliminary Findings/Recommendations Meeting, November 27, 1981

Presenter	Topic
A. McDonald	Introduction
	I. Findings
C. Luzuriaga	A. Physical Outputs of HG Projects 008 & 009; Approaches Tested; Cost Efficiency
V. Rivera	B. Impact on Beneficiaries
R. Roeser	C. Concerns about Replicability and Targeting
	II. Recommendations
M. Sorock	A. Social Approaches (Adapting Design to Beneficiaries)
V. Rivera	B. Technical Approaches (Range of Design Alternatives, New Designs)
C. Luzuriaga	C. Financial Mechanisms (Beneficiary Selection/Direct Discount, Subsidy, Innovative Approaches)
A. McDonald	D. Institutional Responsibilities (Role Definition, Coordination, Community Participation)
A. McDonald	Summary

also possible to interview other family members present at the time of the interview, and a wealth of impressions and information could be corroborated, amplified, or clarified on the spot.

Of the 10 cases interviewed, 7 were women respondents (in two cases their husbands also participated), and 3 were men. It was not possible to interview the cooperative member in each instance, but the information received shows that, of the group interviewed, six households were headed by women and four by men. In all instances, the tenancy of the head of household was that of homeowner/cooperative member. Six of those interviewed had lived in Nuevo Chorrillo for four years, and the other members from nine months to two years. Six of the people interviewed originally came from outside of Panama City but had lived in Panama for at least five years prior to moving to Nuevo Chorrillo. The interviewees tended to be between 40 and 60 years of age, and all had at least a primary school education, with several years of commercial or technical secondary training. Four people interviewed were from Chorrillo and two were from San Miguelito. The remaining four were from other high-density, low-cost rental units in Panama City.

1. Community Overview

A general overview of the physical setting of the community showed that about half of the homes, all detached units, had been enlarged. All occupied houses had been improved to the extent that a layer of plaster had been put on the walls, covering the cement block. There is a great problem with mud and heavy rains, and one of the first priorities of each homeowner is to create a walkable path from the unit to the street or walkway. Corner houses which have somewhat larger lots usually have retaining walls. A concrete slab functioning as a porch or terrace is often put in front of the house. This facilitates access to the house in the rainy season and serves as a foundation for expansion of the unit and the addition of another room. The choice so far by those who have enlarged their units is to add an additional bedroom. The Controller of the Cooperative informed us that of the 40 instances in which the Cooperative has repurchased the units, the cost of improvements did not exceed $5,000.

Although a view of the Nuevo Chorrillo community shows that about half of the houses have been somewhat enlarged, there are approximately a dozen houses, usually corner units, which stand out because of their increased size and extent of improvements. One of these households was selected to be interviewed and, as it turned out, it was on the largest lot in Nuevo Chorrillo. The member of the Cooperative who owns it is

one of the founders, and he has virtually doubled the size of the original constructed area. Even with these mammoth improvements neither this member nor any of the others interviewed considered that their houses--or their community--were "finished." Although an area has been specially designated for commercial activity, and home-based businesses have been discouraged or forbidden, evidence of economic activity was found in the units. A tailor's sign figures prominently on one unit, and one of the people interviewed had a small store in a porch area.

2. Analysis of Findings

A wealth of information was obtained in the 10 interviews undertaken in Nuevo Chorrillo, and the analysis of this information follows. Wherever possible, the most complete picture of the beneficiaries' situation will be presented, together with the observations and conclusions of the interview team.

Improved Financial Situation

One hypothesis of the evaluation team before beginning its work in Panama was that the acquisition of "decent" housing and urban and community services was a major causal factor in improving the households' financial situation. In advancing this hypothesis, the group considered the total package of benefits acquired, their improvement by the beneficiaries, and appreciation related purely to market conditions. It was also thought that the beneficiaries would use their "package of benefits" to improve their financial position by undertaking productive activities within the unit that they could not otherwise have done. At two houses, for example, household members had chickens and ducks for their own consumption (not for sale to others). This represented a saving over retail food store prices and was something the people could not do in their previous unit.

Several questions were asked concerning the household's financial situation. These concerned income, savings, access to credit, value of the unit (before and after improvements), and use of the unit for economic activity. The sale of the unit and the profits realized from this sale were also discussed.

An analysis of the financial situation of the 10 households interviewed in Nuevo Chorrillo shows that there had been an income increase of 30 percent (from an average of $3,804 to a current average of $4,962.40 in income) since the unit was

acquired. However, in most instances this increase was not related to the acquisition or improvement of the unit. In some instances, a household member who was a minor-dependent when the unit was purchased was, at the time of the interview, employed and contributing to the family income. In other cases, new collective bargaining agreements had been reached leading to higher salaries for employees.

In 3 of the 10 cases economic activity was taking place in the unit. In all instances it was activity that had not taken place in the prior home. The activity was child care, and the income realized varied from $30 per month to $100 per month depending upon the number of children cared for. In one of these cases, the family also had a small retail store selling soft drinks, cookies, and crackers which earned approximately $80 per month. The Cooperative member here definitely relates his increased income to his relocation to Nuevo Chorrillo. He is an independent construction worker and has concentrated his efforts within the Nuevo Chorrillo community doing work for the Cooperative and as a contractor for his neighbors. He is a former resident of San Miguelito where he was unable to work within his community.

Although some of those interviewed do have savings, the majority do not. Saving seems to have been a habit for all, at least to acquire funds for the downpayment, but the monthly carrying charges for the unit, services, and so on mean increased expenses in all cases. All persons interviewed expressed a desire to save in order to finish their houses, but this improvement process will have to adapt itself to the members' financial circumstances.

In two cases, the Cooperative members borrowed money for the downpayment on the unit. Since acquiring the unit, a number of those interviewed have borrowed money, but their ability to do so appears to be more related to their employment and loan co-signers than to the acquisition of the unit itself.

Of the houses visited, six had been improved for an average cost of $1,000 each. All of the individuals interviewed expected to continue improving their houses. No one wanted to sell his or her unit, and no one had even calculated the market value of the units during their period of occupancy. Everyone was aware that the Cooperative will purchase the unit should they wish to sell. In the case of a need to sell, the Cooperative must give its approval. The Cooperative appraises the unit and pays the member the amount of the investment plus the amount of any improvements made. The people interviewed do not think in terms of acquiring a unit in Nuevo Chorrillo to improve their financial situation.

Adequate Use of Resources

All of the persons interviewed expressed a high degree of satisfaction with the house, lot, and community in which they lived. Although there were complaints about the adequacy of some services (to be discussed below) and concerns about the management of the Cooperative itself, each household was utilizing the resources obtained to their maximum potential, given each household's needs and economic capacity.

Affordability

The average payment for previous shelter, including electricity, water, and telephone (two cases), for the persons interviewed, was $21.35 per month. The average cost per month for the 10 households interviewed was $67.68, representing a 200 percent increase in monthly costs. The percentage of income devoted to shelter in Nuevo Chorrillo was 16 percent, whereas previously it had been 7 percent. The interviewees had paid an average of $13.95 per month in their previous situation for transportation; in their new units, they paid $43.15 on the average, representing an increase of 210 percent. Of the 10 households, 6 paid their monthly payments to the Cooperative through the salary discount mechanism and the others paid from their own earnings. Two families reported that they were behind in their payments. The Cooperative has not taken measures against them. Based on the households interviewed, it appears that the project is affordable to the beneficiaries.

Beneficiary Selection

The Cooperative established requirements for beneficiary selection which were deemed fair and reasonable by the beneficiaries interviewed. For approval for a Type A house the member had to:

-- Show evidence of need of a home (owning a home in Panama City would disqualify a member)

-- Show absence of a police record

-- Present a verification of employment and salary

-- Be 50 years old or younger

-- Agree to attend Cooperative seminars

-- Agree to participate in mutual help construction (this requirement was dropped later when mutual-help construction was abandoned)

The Cooperative seems to have a preference, evidenced in the second phase of the project, for the direct discount from salaried workers. Although both the male and female Cooperative members interviewed appeared to have relatively similar situations with regard to amount and stability of income, the direct discount might operate as a hardship against otherwise eligible women whose earnings are not subject to the salary discount.

Improved Living Conditions

The most dramatic positive findings were made in the area of improved living conditions. The statistics and comparisons between the previous and current situations of the Nuevo Chorrillo residents speak for themselves. In terms of living space, an average of six people shared 23 square meters (247 square feet) in their previous dwellings, while today an average 5.7 people share 57.4 square meters (620 square feet), an increase of 150 percent in living space. In their previous dwellings, one water faucet was shared with an average of 30 people; today it is shared with an average of 5.7, all of whom live under the same roof. The toilet facilities were shared among an average of 28 people before; now they are shared with an average of 5.7, all under one roof.

All people interviewed were renters in their previous dwellings. In many instances they had ceased paying rent while continuing to pay for water and electricity because the buildings had been condemned. The previous dwellings for 75 percent of those interviewed consisted of one room (perhaps divided by curtains) made of rotting wood with roofs of second-hand zinc. The unit in Nuevo Chorrillo allows for privacy and has more lighting, ventilation, and quiet. Various activities can be undertaken simultaneously in the same unit without interference among household members or with other households. Households also feel secure against fire, lightening, and similar damages which they did not feel in their prior situation.

Although the overwhelming majority of the interviewees came from Panama City, they expressed their satisfaction with the location of the Nuevo Chorrillo community. They say that although transportation could be improved, they feel that the distance is well compensated for by the less crowded conditions, the peace and tranquility, the absence of a criminal element, and the chance to have their own gardens.

Social Mobility

When asked if they thought they had made a significant change by becoming homeowners in Nuevo Chorrillo, all those interviewed gave an unqualified "yes." In their own eyes, the building of their homes and their community was an achievement in which they take great pride. They see themselves as changed in status--from urban slum dwellers to homeowners. People who came from Chorrillo and San Miguelito specifically mentioned the better human environment for themselves and their children, especially the lack of a criminal element. A better environment for their children was considered crucial. Former residents of Chorrillo and San Miguelito deplored the teenage gangs, robberies, and frequent risks to which they were exposed. They were also relieved to be far from the noise, commotion, and fighting in those communities. They want to be able to ensure that their children can study with fewer distractions. All respondents felt they could now make plans for themselves and their children that they could not have made before, given the precarious nature of their former environment.

Appropriateness of Design, Location, and Materials

Although the site selected for the construction of Nuevo Chorrillo was about 25 km from Panama, the very favorable land acquisition terms enabled the Cooperative to offer a unit and a community affordable by and satisfactory to its members. All of the persons interviewed expressed satisfaction with the units and community design. No construction defects were reported.

Adequacy of Services

The Nuevo Chorrillo residents expressed complaints about some services in the community, and these are listed below. However, their sense of pride and satisfaction, which was repeated over and over again, far outweighs any complaints or problems they may be experiencing.

The water system in Nuevo Chorrillo is the responsibility of the Cooperative. As was mentioned earlier, there are seven wells functioning at the present time. Each house had at least one water storage tank which was purchased separately from the unit. Water is rationed, and during the morning hours no water is available. Water service usually returns around mid-day. The monthly payment includes a $2 charge for water, which appears to be insufficient to guarantee adequate service,

especially when compared to IDAAN's minimum water charge of $5 per month in places such as San Miguelito. All those interviewed said that the service has not improved, and they fear it will get worse in the summer months. All construction has stopped, and no new applicants are being accepted because of insufficient water.

The Cooperative operates its own transportation system and has done so since it came into existence. The community began with two buses and now has a total of eight. The fare of 35 cents one way to Panama is cheaper than the public bus fare. All residents complained that the bus service was inadequate, with as many as half the buses not operating on any given day. The people interviewed complained about the overcrowded situation, the infrequency of service, and above-all, the poor maintenance and repair. It appears that the transportation service is the weakest financial link in the Cooperative's chain of activities, and this has raised questions about the financial management of that service as well as of the Cooperative in general.

Almost all of those interviewed expressed dissatisfaction with the Cooperative's food store. The range of products is small, the prices are 10 to 15 percent higher than in Panama City, and the products sold are considered to be of inferior quality. Most people interviewed did their food and clothing shopping in Panama City. The site plan comprehends a commercial area, and everyone interviewed thought a supermarket was a primary necessity. Apparently the Cooperative has an offer from one of Panama's supermarket chains, but no decision has yet been reached.

The original site plan for Nuevo Chorrillo also includes space for a health center, to be equipped and staffed by the Ministry of Health. After some conflict within the community, the Cooperative gave over a unit to house a Health Subcenter staffed by an auxiliary nurse and a part-time doctor provided by Social Security. Those who are covered by Social Security can receive free treatment. Many of the people interviewed were not clear about costs, if any, of treatment for those not covered by the system. A pediatrician and a pharmacy student are members of the Cooperative and have discussed opening an office and pharmacy. These plans have not been carried out as yet, and all those interviewed mentioned the inadequacy of health services for their growing community.

Aside from a playground and sports fields (football, basketball, and baseball), there are inadequate recreation facilities for the young people of Nuevo Chorrillo. There are no cafeterias, restaurants, movie theaters, or places to dance and listen to music. This complaint was heard from the young

people interviewed, who said they had to go to Panama City for all recreation activities.

Job Generation

Only one individual interviewed could trace his increased employment to the existence of the Nuevo Chorrillo community. As was mentioned earlier, he is an independent construction worker and has done work for the Cooperative and for his neighbors.

There is a Centro Femenino de Produccion in the community, and those interviewed said that classes taught embroidery, knitting, crocheting, and making paper flowers. No one could tell us if these had resulted in the creation of productive enterprises, but it seems highly doubtful. It appears that there are various women's groups in the community, and the feeling of some is that the Centro Femenino de Produccion is really run by those partial to the Cooperative's manager. No one mentioned a lack of productive activities as a problem in the community at the moment.

Change in Low-Cost Housing Standards

There was absolutely no change in housing standards for this project.

Environmental Effects

The earthmoving activities undertaken to open the site to development removed vegetation and created erosion. The situation created initially is improving since the residents are beginning to plant trees and gardens, and many of those interviewed expressed a desire to improve their gardening efforts.

Community Participation and Organization

Both USAID and the Nuevo Chorrillo Cooperative itself embarked upon the housing program intending to create a model for low-cost housing and community development in Panama. The Cooperative leadership began the first phase of its efforts by employing a highly participatory system of construction utilizing the labor of the prospective community residents. This effort was undertaken both to reduce costs and to create

community cohesion. It worked and was highly praised by the people interviewed. However, it has been eliminated from the Cooperative's later construction efforts.

At the outset, the members of the Cooperative appeared to be well informed about the plans for the development of their community. They knew the requirements and knew that certain pieces of land had been set aside for community services and facilities. As time passed, little or no progress was made on the construction of a health center, church, and other promised facilities. When special interest groups were formed--the health center committee, for example--the Cooperative's management did not support the initiative. Community pressure was then brought to bear upon the management, and a health subcenter was opened as a provisional measure.

Earlier, services such as the elementary school, for example, had been obtained as a result of community cohesion, cooperation, and consensus. The services provided recently have come only through conflict.

At the time the evaluation was carried out in Nuevo Chorrillo, two competing approaches to community development seemed to be vying for recognition. The Cooperative management appeared to want to centralize all control in itself and the Cooperative, whereas a vocal group of about 23 members calling themselves Pro-Rescate wanted to promote and recognize community initiatives outside the Cooperative structure. Some members, for example, have recently begun a savings and loan credit union outside the Cooperative.

There are deep divisions within the Nuevo Chorrillo community at the present time. The people interviewed are well satisfied with their units and their community and gave the distinct impression that they would like to live in peace, harmony, and tranquility. There seemed to be both apathy and fear on the part of some people interviewed when they were specifically asked to name the person from their area who represented their section before the Cooperative. Only 8 of the 10 people were specifically asked to name their representative, and only 3 did so. There have been threats, requests for official investigations, accusations of malfeasance, and even physical encounters between the manager of the Cooperative and the Pro-Rescate group. Politics and family matters all play a part in this.

Right now there is concern expressed by those interviewed about the future of their Cooperative and their community. The members are proud of their efforts. They have worked hard and long to achieve their current standard of living. Some fear that if they speak out, their homes will be put in jeopardy. Others have decided not to participate at all because doing so

may affect their unit. No one is planning to sell the unit and move out because of the current divisiveness. It is also true that some community services have been added or improved as a result of conflict rather than harmony. However, the fact that the Cooperative holds the mortgage to the entire community seems to represent an implicit threat to those who would challenge or question its current management.

The question arises as to whether cooperatives are an appropriate model for the development of low-cost housing projects. All of the evidence on the subject is clearly not available. Nuevo Chorrillo is not the model it was supposed to be, but nevertheless, it has provided considerable improvements under very difficult circumstances for people whose housing conditions were intolerable. It is our judgment that the cooperative can be a viable mechanism for the development of low-cost housing projects and can also be a vital force in community planning and services. However, community development initiatives should not be exclusively confined to the cooperative. Systems should be set up to encourage local problem-solving initiatives whether or not the cooperative is used as the mechanism to achieve the desired ends.

At this moment, Nuevo Chorrillo is suffering from a polarization which is of concern to its membership. It has had one manager since its inception and one major benefactor. They are now at odds and the community is feeling the strain of their conflict. Various people stated that they thought that the manager had risen rapidly and become too powerful. Others feel totally indebted to him for their improved living situation. Perhaps Nuevo Chorrillo, and indeed other low-cost housing cooperatives, might think in terms of limiting the size of their projects to a maximum of 1,000 units. Another suggestion is to hire a manager on a three-year contract, renewable only upon an affirmative and secret vote of the general membership.

Nuevo Chorrillo has accomplished a great deal for its members. However, it is now in a critical situation, but a situation that can be overcome. The change in the community modus operandi from collaboration to conflict has not been a pleasant one. It has, on the other hand, resulted in more and better services. The community residents interviewed do not like it. Some see it within their power and right to change; others do not.

Unplanned Effects

The scarcity of water for the Nuevo Chorrillo community is the major unplanned effect discovered in the field work. When the first well was opened in the early part of the 1970s, more

than enough water was available, with the well producing at expected capacity. Unfortunately, this experience did not repeat itself for the other wells, and there is at least a 150,000 gallons per minute deficit in water for the current residents. Water is rationed, and no new Cooperative members are being admitted because of the problem. Construction has come to a halt. The Cooperative at this moment is drilling new wells in hopes of overcoming what will be an even more critical situation in the dry season. Exhibit B-3, Summary of Interview Results: Nuevo Chorrillo, may be found at the end of this appendix. Exhibit B-4 contains a sample questionnaire used in Nuevo Chorrillo.

B. San Miguelito

The separating out of benefits and beneficiaries in a municipality as large as San Miguelito was not an easy task. When the evaluation team began its work in the area, the infrastructure provided under HG 009 had essentially been completed.

The shelter component of the project underwent several modifications. It was not necessary to relocate as many households as was originally anticipated when the project was designed. The shelter component was redesigned to allow for 815 units, most of which are of the piso-techo variety. To date, 615 units have been constructed in the "Roberto Duran" sector. However, 200 families from the Curundu slums have been relocated to these units because they were flood victims. The Ministry of Housing has promised to replace these units with 200 more, but the construction of these had not yet begun.

Sixteen interviews were carried out in San Miguelito during November 12-17, 1981. (See Exhibit B-5 for summarized interview results; see Exhibit B-4 for a sample questionnaire used in "Roberto Duran.") Three separate types of situations were examined. The first was in "Roberto Duran," where five interviews were conducted, all with the original property owners. The area is a new one, and the majority of those interviewed have been in the community for about two years. Of these families, all had previously lived in some other sector of the municipality. One household had been relocated to "Roberto Duran" because of disputed tenancy in their former shelter. Of the five households interviewed, four were headed by males, and one by a female. Three of the households were headed by persons under 40 years old and two by persons over 40.

To get a general idea of the benefits received from the infrastructure efforts, several areas within San Miguelito were visited. Three interviews were conducted in Gelabert, one in

Parusia, and one in Fatima. In all instances, the families interviewed were headed by persons under 40; three were males and two were females. All three communities have had public lighting, electricity in the home, and water piped to their units for at least the past six years. Although water and light were available to homeowners through local community action efforts, these services were sorely deficient since they were unplanned offshoots of systems designed for fewer consumers. Water and light were heavily rationed. As a result of the upgrading project, technically designed and functional water distribution and electrical networks were provided that allow households to have complete service, limited only by the number of water taps and electrical outlets that they desire and can afford.

In all instances in "Gelabert," "Parusia," and "Fatima," streets, drainage, and sewage disposal systems have been installed. These improvements were all financed by the upgrading loan. Of the five households interviewed, three had installed indoor toilets connected to the sewage system. The remaining two households had not yet done so. The households that had not yet connected to the sewage disposal system were well aware of its existence and recognized the importance of making the connection when their financial circumstances would permit.

The "Gelabert," "Fatima," and "Perusia" communities have been in existence for at least a decade or more. Of the five households interviewed, only one was a recent occupant (two months) of an already existing unit within the community. All of the other interviewees were original occupants of their dwellings. Their time in the community varied from 8 to 19 years, and they had seen the evolution and growth of the area over time.

Six families were interviewed in "Nuevo Veranillo." Part of this area of San Miguelito was originally developed by Panama's Instituto de Vivienda Y Urbanismo (IVU, the Ministry of Housing's predecessor agency) in the late 1960s when households from the Viejo Veranillo area were relocated. The relocation took place because the university expanded into Viejo Veranillo, an area to which many low-income squatters had moved.

"Nuevo Veranillo" provides an interesting case study for several reasons. It represents an early effort by the Panamanian Government and AID to finance minimum shelter solutions for low-income Panamanians (HG funds were not used). The community has over 15 years of experience in progressive construction, in which homeowners improve their units over time as their needs require and their budgets allow. The provision and upgrading of infrastructure under the HG 009 loan represent yet another stage in this community's development. The Ministry of Housing

has undertaken an evaluation effort in "Nuevo Veranillo" to assess the efficacy of progressive construction and its implications for future Ministry planning. The results to date have been highly positive, and the lessons learned have been constructive in terms of future directions for MIVI programming.

The interview team spoke with four male and two female heads of household. Of these, two had been relocated from Viejo Veranillo. In one instance, the dwelling had changed hands although the second owners had been living in the unit for five years. The average length of time in the community for the remaining five interviewees was over 14 years. A more elderly population was interviewed here, with five out of the six heads of household over 40 years old. All six households had had water and electricity connections for some time. The sewage lines had been installed within the past year, and four of the six households interviewed had connections to the system. In one instance, the house was connected to the sewage system via a connection made on an adjacent lot. This house was below street level and the main lines were installed in such a way that a direct connection would not have been possible without additional technical and cost problems.

1. Some Comparisons Among the Areas

"Roberto Duran"

The "Roberto Duran" area of San Miguelito is a new community built by the Ministry of Housing. The vast majority of the units are one room piso-techos with cement floors and zinc roofs. Each has an enclosed indoor toilet connected to a septic tank system which serves the entire area. Water and electricity connections have also been installed, and both are individually metered. The lots are approximately 200 square meters, and each house must be enclosed before the owner can occupy it. Some families opt for enclosing the original unit and expanding before moving in. Others enclose, move in, and expand at a later time. Of the five homes visited, three had been expanded. The original space had been 24 square meters; the expanded units we saw were 40, 50, and 70 square meters.

The homeowners in "Roberto Duran" had made no downpayments, but the Ministry of Housing was obtaining monthly mortgage payments through direct discount from the homeowners' salaries. The average monthly payment for shelter and infrastructure for the five households visited was $58 a month. This represented 16 percent of monthly earnings. In their previous situations, those interviewed paid an average of $20.50 a month, which represented 7.7 percent of their monthly earnings. No one visited

engaged in economic activity within the unit, although one of the homeowners who had expanded his unit had done the work himself.

"Gelabert," "Parusia," and "Fatima"

"Gelabert," "Parusia," and "Fatima" are contiguous communities within San Miguelito. Of the three, "Parusia" appears to be the oldest and the most consolidated area. The overwhelming majority of the homes are constructed with cement floors, zinc roofs, and walls made of cement block. The overall standard of living, at least in terms of material possessions, appears to be higher in "Parusia" than in the other areas visited. Many automobiles could be seen in front of houses, and units often included garage space.

"Gelabert" and "Fatima" are areas of greater variety in terms of housing units. Houses of unpainted second-hand wood can be seen alongside cement block houses with painted plaster exteriors. There is a considerable amount of home construction--both enlargements and improvements--being undertaken at the present time.

There is also evidence of substantial economic activity being undertaken in homes in all areas of San Miguelito. Small dry goods and food stores predominate. The interview team was able to visit one such house which contained a food store. Soft drinks, canned goods, condiments, some hardware, toys, and medicines were sold. Expensive industrial-model refrigerators were required, and the monthly electricity bill was said to be approximately $145.00.

San Miguelito has primary, secondary, and vocational schools; health centers; churches; and preschool facilities. With the new population in the "Roberto Duran"-"Torrijos Carter" area, there is additional pressure on these services, but for the time being, those interviewed considered them to be adequate.

"Nuevo Veranillo"

Part of the "Nuevo Veranillo" area was populated by people in search of new homes on an individual basis. The other part was settled under the auspices of IVU--both to relocate households from Viejo Veranillo and to provide low-income Panamanians with minimum shelter and lots. In the 1960s, IVU sold lots without urban infrastructure and made materials loans to prospective homeowners so that they could begin the

construction process. The piso-techo solution was offered here for the first time. The HG 009 loan financed the upgrading of water, electricity, and streets in "Nuevo Veranillo" and provided for an entirely new sewage disposal system for the area. The information submitted to AID by IDAAN shows that the majority of individual connections to the sewage system in San Miguelito have been made in "Nuevo Veranillo."

The Ministry of Housing undertook a study of "Nuevo Veranillo" to see what, if anything, had happened over the course of the past 12 years. It is clear that a tremendous amount of change has taken place. An area that once had lots, wooden shacks, communal water taps, and no electricity now has concrete block houses; paved streets; and water, sewer, and electricity networks serving individual homes. However, differences still remain within the community: very small structures can be seen alongside expanded units.

As in the other areas of San Miguelito, there are businesses conducted in homes. The interview team was able to acquire data from one very active community member who devoted the front part of her home to a laundromat while renting the next-door structure for a store.

All of the people interviewed in San Miguelito, including those in "Roberto Duran," stated that they felt the area had definitely improved. People who had lived the experience of having to clear their own lots, leave their shacks at 5:00 a.m. to line up to obtain water at the public tap, cross large muddy areas on foot, and read by candlelight are truly proud of their accomplishments. They feel that they as individuals, and their community as a whole, are regarded in a much more positive light than ever before.

2. Analysis of Findings

A slightly different questionnaire was applied in the upgrading area than had been applied in "Roberto Duran" and Nuevo Chorrillo. The attempt was made to obtain information concerning the benefits received from both the shelter and infrastructure acquired and to determine what implications beneficiary preferences might have for future programming efforts.

Improved Financial Situation

Of the 16 interviewees (5 in "Roberto Duran," 5 in various areas of San Miguelito, and 6 in "Nuevo Veranillo"), two had

businesses in the home. One was a food store that the owner calculated produced a net income of $260 per month. The other, a food store and laundromat, brought in approximately $700 per month according to the owner. This person was also receiving support payments of $500 per month from her five children. In these two instances, the people began their businesses because they were able to obtain their own lots and construct their own shelter. These businesses are particularly dependent upon electricity for their adequate functioning, and in both instances the electricity bills are well over $100 per month.

All of the people interviewed had experienced an increase in income in absolute terms--from the time they acquired either new units or improved services. However, none of those interviewed, with the exception of the cases mentioned above, attributed the income increase to the acquisition of a new unit or improved infrastructure.

One interviewee in "Nuevo Veranillo" reported having obtained credit using her house-business as collateral. In a very few other instances, individuals were able to obtain loans for home expansion and improvement through employee loan programs which are repaid by a salary discount. A large number of people interviewed had actually sought and obtained credit to improve and expand their homes, but they were able to do so only because they produced cosigners with sufficient income to cover the loan.

In only 2 of the 16 instances, units had changed hands once. The new owner in one instance had paid for the lot and house in cash. In the other case, the house purchase was financed by a savings and loan bank. The total cost was $11,500 with a $3,000 downpayment and the remaining $8,500 financed for a period of 15 years at a variable rate of interest (this is currently running around 13 percent). The monthly mortgage payment is approximately $115.

As in Nuevo Chorrillo, the overwhelming majority of the people interviewed do not plan to sell their units and have not considered what price they would ask if they were to sell. Most people believe they are entitled to receive the amount they have invested in the unit plus compensation for any improvements or expansions they have made. Only a few of the San Miguelito residents believe that their homes have a greater value since the acquisition of adequate infrastructure. One interview respondent in "Roberto Duran" seemed to be considering the speculative value of the unit he had acquired. He sold a home (originally built by MIVI) in San Isidro to relocate to "Roberto Duran" where he has made considerable improvements in the piso-techo unit he originally acquired. He aspired to obtain a large lot in a semi-rural area where he could have animals and a garden. He indicated that if an acceptable offer

were made--somewhere close to $6,000--he would sell his property. This same person stated that the sales price of the unit he had acquired had been $3,400. He calculated his investment in improvements at $500 since he and members of his family did the actual labor.

Adequate Use of Resources

From what we could observe in the community and learn from those we interviewed, it appears that the units, lots, and infrastructure services have been used appropriately.

Affordability

For the 16 households interviewed, there was no delinquency in payment to MIVI for the piso-techo units. MIVI employs the salary discount to obtain monthly payments for the units. The average monthly payment for the mortgage and infrastructure in "Roberto Duran" for the households interviewed was $58.

None of the beneficiaries interviewed in either "Roberto Duran" or the other areas of San Miguelito mentioned problems in paying for the services, and none of them reported service shut-offs because of nonpayment of bills. If we take into account the businesses run in the homes, the average monthly electricity bill in the San Miguelito households interviewed (exclusive of "Roberto Duran") is $45. If these two households are excluded, the average is $21. Monthly bills paid to IDAAN for water, sewer, valorization tax, and garbage collection average $8 per month.

Sewage disposal networks were installed during the past year in the areas visited by the interview team. Of the 11 households interviewed in San Miguelito outside of "Roberto Duran," 7 had acquired bathrooms connected to the system. The cost of this acquisition varied from $500 to $1,100. Those who had not yet acquired the connection expressed a desire to do so but felt that their economic situation at this time did not permit them to take advantage of the service.

It should be noted that the majority of the original homeowners in San Miguelito (exclusive of "Roberto Duran" and other MIVI project areas) have already paid for their lots; therefore, they are not making a monthly housing payment. Land tenure has been handled by the corregimientos within San Miguelito. The house construction, enlargement, improvement, and renovation are the sole responsibility of the property owner.

Beneficiary Selection

For the "Roberto Duran" project, the Ministry of Housing required that the applicants be salaried workers so as to be able to employ the discount mechanism for the receipt payments. Each applicant was interviewed in his or her previous home by a MIVI case worker to verify housing need, family composition, and salary. A letter from the applicant's employer was also required. MIVI does not accept applications from individuals wishing to live alone. In one instance, a young woman interviewed had initially believed that she had to have children to qualify. She did not have any at the time the application was made, but since moving she and her husband have begun a family. No downpayment was required for the units in "Roberto Duran." All those interviewed were former residents of San Miguelito; one was being relocated because of disputed tenancy. There is significant incentive for the people in "Roberto Duran" to enclose their units because once they are approved for the piso-techo project they must begin their monthly payments.

To examine the San Miguelito infrastructure projects, the inhabited areas not yet served by these projects were selected.

Improved Level of Living

There have been to date, and undoubtedly will continue to be, improvements in the level of living for all residents of San Miguelito. The change from former circumstances is not as dramatic as in the case of Nuevo Chorrillo. In San Miguelito, progressive development of the community has been the method followed by the residents. Upgrading under HG 009 was an attempt to assist in this process by providing communities with adequate services they could not otherwise provide for themselves. An analysis of the improvements follows.

"Roberto Duran." The average number of people occupying the units where interviews were conducted was five. In their previous housing, space was shared with 8.4 persons. The average size of the previous dwelling was larger, some 61 square meters, or 7.2 square meters per person. In their current situation, the average dwelling size is 42 square meters, with 8.4 square meters for each household member.

In their previous living situations, all beneficiaries interviewed had had water piped to their units. They also have piped water in "Roberto Duran." Monthly water bills averaged $7 in their previous dwelling. Current bills average $8.90 per month.

Of the five families interviewed, two had latrines in their prior living situation. All now have indoor toilets. All had electricity in their prior homes and have electricity in their units now. Monthly electric bills in their previous dwellings averaged $11.30 as compared with $12.30 in their present units. Transportation expenses averaged $16 per month in prior dwellings. They have risen to $21 per month.

"Gelabert," "Parusia," "Fatima," and "Nuevo Veranillo." Over the past 20 years, the improvements in the "Gelabert," "Parusia," "Fatima," and "Nuevo Veranillo" homes and community services have been substantial. The wooden structures in many instances have been replaced by more durable construction materials. Lots have been delineated and tenancy secured.

The areas visited had electricity and water piped to the units for at least six years. These services had been deficient and were improved substantially in terms of capacity as a result of the HG 009 loan. All of the households interviewed mentioned the vast improvement.

The existence of the sewage disposal network has meant that contaminated water is not running through the streets as it was before. Although only 7 of the 11 families interviewed had connections to the sewage system, those that did not expected to do so as soon as their resources permitted. One family specifically mentioned improvement in the health situation of their children, who had fewer infections on their feet and skin since the streets had been paved and the sewer lines installed.

Social Mobility

The persons interviewed all felt that their community and their situation had improved--in their own eyes as well as in the eyes of those outside the community. Squatters who had acquired title to their lots felt a pride of ownership and satisfaction with what they had achieved. All those interviewed in the upgrading area who were asked whether they had any interest in relocating to MIVI or other housing answered, across the board, with a uniform and emphatic "no."

People felt that they would be able to leave something concrete to their children, as well as make plans for their children's education which they could not otherwise have made.

Appropriateness of Design, Location, and Materials

The infrastructure design and materials used in San Miguelito were appropriate under the circumstances, given that their location was predetermined because of the location of the existing population. The fact that settlement preceded infrastructure did mean increased costs of that infrastructure compared with what it would have cost to provide infrastructure prior to settlement.

In "Roberto Duran," the construction materials and design were entirely appropriate, but the difficult topography required higher infrastructure costs. Erosion is a problem in "Roberto Duran."

Adequacy of Services

A high degree of satisfaction was expressed by all interviewees concerning the water, electricity, sewage disposal, and streets. The most frequent complaints concerned garbage collection and bus service. The people in most parts of San Miguelito have to take their garbage to central collection points, usually no more than a block from the house. However, IDAAN is lax about collecting garbage (in some instances garbage was standing for five days) and the people within the community often leave garbage in undesignated areas. IDAAN charges $1.50 per month for garbage collection. This charge is relatively recent. The people we interviewed remarked that service had deteriorated considerably since payment was sought and obtained.

Buses do not pass through San Miguelito, and residents must walk out to main roads to secure transportation. The trip to Panama City usually takes at least one hour. There were uniform complaints about service inadequacy, especially during peak hours and during the rainy season.

Generation of Employment

The interviewers could not detect any employment generation activities in San Miguelito. Homeowners who were construction laborers were able to save on the labor costs in the expansion and improvement of their units by doing their own construction.

Change in Low-Cost Housing Standards

There were no changes in low-cost housing standards or in infrastructure standards for any of the aspects of the San Miguelito project.

Environmental Effects

Erosion was a problem in "Roberto Duran," for which some after-the-fact correctional measures were taken. These included the construction of dikes and cleaning of pipes. There are still areas where work needs to be done to reduce the effects of erosion. One measure that might be taken is the construction of covered drainage trenches to reduce the waterflow and mud.

Sanitary conditions in "Gelabert," "Parusia," "Fatima," and "Nuevo Veranillo" have improved, especially since the sewage disposal system was installed. The system takes sewage to its disposal point in Panama Bay, thus eliminating odors and the contamination of streams. The construction of streets and drainage systems has eliminated standing pools of water which were breeding grounds for mosquitoes.

Community Participation and Organization

All of the services in San Miguelito have been obtained by community participation, working at times against and at times with the local corregimiento officials. The corregimiento has a series of geographically based elected community groups. These groups worked to obtain and then manage the early water and light networks in the area. Of the 16 people interviewed, all who were long-term residents had participated in early efforts to obtain these services. One interviewee in "Nuevo Veranillo" was working with the local group to obtain preschool programs and training for adults to set up productive enterprises. Another interviewee in "Roberto Duran" stated that garbage disposal and poor drainage were issues before the committee in his area. See Exhibit B-5 (Summary of Interview Results: "Roberto Duran") and Exhibit B-4 (Sample Questionnaire) at the end of this appendix.

VII. BENEFICIARY INTERVIEWS AND FINDINGS: THE UNAFFECTED AREAS

The team decided to interview a small number of households from areas which had not been affected by new housing or upgrading, although some people from these areas have been selected as beneficiaries in existing projects. These are areas from which the beneficiary population for future shelter programs might be drawn. Two areas, representative of the types of low-income communities found in the Panama City metropolitan area, were chosen. One, Curundu, is an area close to downtown Panama City, near the Matasnillo River. The other, Chorrillo, is downtown and borders on the Canal Zone. Three households were interviewed in each community. A description of the interviews and community conditions follows.

A. Curundu

The preliminary results of the 1980 Census show that the corregimiento of Curundu has about 3,750 housing units containing about 17,000 people, or a density of 4.5 persons per unit. Both the number of units and the population have fallen off since the Shelter Sector Assessment was done in 1977. Until recently, the units in Curundu consisted largely of precarious shacks made of second-hand wood and some high-rise apartments built by the municipality. The Ministry of Housing has just built 350 low-rise rental units distributed among five buildings in the Cabo Verde section, and there are plans for additional work in the areas known as Sector M and "Nuevo Tivoli."

The interview team visited the "Aguila" area of Curundu. This is a typical area of Curundu, with squatter shacks built on stilts. There are several outdoor communal water taps, but few homes have latrines, and there are no sewage disposal or garbage collection systems. Some homes have electricity which is paid for according to the number of outlets and appliances the household possesses. There are no water or electric meters. Some homes have no electricity. The units vary in size between 25 and 50 square meters. The community has dirt paths strewn with garbage and raw sewage. There is no security of tenancy, but this is a minor problem compared to the total precariousness of the physical environment. Fires and floods have been prevalent. Waters that used to rise several inches now rise several feet, and rescue systems involving canoes and row-boats have been established. The homes contain a bare minimum of furnishings and utensils. What they have is very inexpensive and nondurable, and many belongings have been carried away by the floods.

During the course of the past two years, some Curundu residents--usually disaster victims--have been moved out of the area. They have gone to temporary barracks furnished by the Ministry of Housing in San Miguelito or elsewhere. Two hundred flood victims were recently relocated to the "Roberto Duran" piso-techo units. The density of the area has definitely been lowered during the course of the past two years, and one very knowledgeable and active community leader estimated that some 1,200 units would solve the shelter problem in Curundu. This same community leader has been able to organize women from among the flood victims living in the barracks, as well as some who will be affected by the Ministry of Housing's urban renewal program, to learn carpentry, masonry, electricity, and plumbing. The Panamanian Government's training institution, CENAFORP, is in the process of training 105 women, and they are currently constructing expandable core units in the "Torrijista" section of San Miguelito with MIVI and CENAFORP supervision. When the project is completed (sometime early in 1982), the women participants will be homeowners. They will save 40 percent on their homes by providing their own labor. Some of the women will continue working in the construction trades, and there will undoubtedly be ample work for them--particularly if the Ministry of Housing continues to provide partially completed units.

Clearly, such conditions led many in Curundu to the same basic conclusion to leave the area. Studies show that some wish to remain downtown, whereas others would prefer to relocate to the periphery. They are all in agreement that improving their current shelter in Curundu is a stop-gap measure until a more permanent solution to the problem can be found. This is not to imply that there has not been some improvement in homes over the years. However, the floods have become worse, the fires more frequent, and the losses greater. To develop the lands, major filling would be needed. Rechanneling of the river might be indicated, as well as flood protection walls. The Ministry of Housing has committed itself to building two-story low-rise apartments in Sector M and "Nuevo Tivoli." The experience gained from these projects will indicate whether it is feasible to continue construction on this swampy area.

Three households were interviewed in the "Aguila" section. The interview questions focused on the current shelter and economic situation as well as aspirations for the future. The people to whom we spoke had been living in their current units for 11, 15, and 29 years. Two of the units had electricity, one did not. In all cases, the homes were made of second-hand wood. There were some attempts to divide the interior space with second-hand wood or curtains. Furnishings observed were sparse and in poor repair. The incomes reported were $120, $150, and $265 per month. In the case of the highest income,

several adults were contributing to the household budget. In two of the three cases, all children of school age were actually studying. In one instance, two of four school-age children were not in school since their mother said she thought they had not really taken advantage of school in the past.

The people to whom we spoke were waiting for some word from the Government concerning their future housing. Two of the three we spoke to thought that they could not afford to pay for housing and services above and beyond what they currently pay for electricity ($2.35 and $10.00 per month). They currently do not pay for water, rent, or house payments. The third family had spoken to the Ministry of Housing about its eligibility for homes in San Miguelito or the urban renewal area downtown. All would like to leave but do not believe that they can do so without assistance.

B. Chorrillo

Chorrillo is located in downtown Panama between Calle 12 Oeste and Calle 27. It is a separate corregimiento having approximately 3,000 families. Much of the area contains two-story wooden structures built at the turn of the century to house the Panama Canal workers. The buildings are divided into rooms with one household to a room. An interior patio contains the toilet, shower, and washing facilities for the entire building. It is not unusual for 15 households to share one toilet, shower, and water faucet. The rooms themselves and the common areas have electricity. Each building has a water and light meter, and the monthly bills are divided according to the number of rooms. The buildings have been condemned for failure to meet minimum health and safety standards, and the people who live there do not pay rent. Some buildings were owned by private landlords, and others by the Government. They will all be taken over by the Ministry of Housing under the urban renewal project. The corregimiento officials seem to have organized cleaning and maintenance committees in each building to ensure that a modicum of service and safety is provided.

The Ministry of Housing is undertaking a major urban renewal effort in Chorrillo at this time. All of the condemned buildings will be demolished, but the razing will be carried out in stages. Barracks which can provide shelter for up to 30 households have been constructed as temporary housing for those whose buildings have been demolished and are waiting to relocate--within the area or outside it. The barracks themselves are one-story wooden structures with one household to a room. Three rooms share a bathroom, showers, and faucets. The Ministry of Housing is not charging rent for these quarters, but water and electricity bills will be pro-rated among the rooms.

The Ministry will assume the cost of transporting the households from their former rooms to the barracks.

The Ministry of Housing has established a satellite office in Chorrillo in the area where the first demolitions will take place--Calles 25, 26, and 27. It is already staffed by two housing professionals, a secretary, and a cleaning person. One block, Manzana 183, has already been razed, and 28 families have been living in barracks for the past two months.

New units are under construction at the present time. Two are already completed. A unit consists of one multipurpose room, and a kitchen, bath, and a washing area in the patio. It has a partial second story called an altillo which serves as another room. Other units will be in two-story buildings, also with altillos.

Ministry of Housing personnel informed us that a total of 520 condemned units will be demolished and 694 units will be constructed. The first phase of the project involves the building of 232 units in two-story structures having approximately 20 units per building. The people in Chorrillo from condemned housing will get the new units under construction, according to the Ministry officials, although the cost of the new units has not yet been determined. In any case, at this point the project is closed to the general public and open only to Chorrillo households--with priority going to those whose living quarters have been razed.

The Ministry has met with the Chorrillo residents to describe the urban renewal plan. The households have been encouraged to apply for the new units, and the response has been favorable. Some people have applied for units in other MIVI projects, not wishing to confine themselves solely to Chorrillo. Others are waiting to get new units in the Chorrillo area.

The Ministry of Housing is aware that there are people whose incomes are too low to permit them to buy new units. These people will be moved around as other condemned units become available, and there is a danger that the project may end without relocating all of those who lived in the demolished units. The major need for these people is employment or training, and the Ministry of Housing has approached the Ministry of Labor to see what resources can be brought to bear on the problem. One Ministry of Housing official in the area said that those who had made applications for the new units had monthly incomes ranging from $250 to $300.

Three families were interviewed in Chorrillo. All were from Chorrillo. One 45-year-old woman told us she had lived in the same room since birth. She continued to live there after

her marriage, and her 11 children were born and raised there. Seven still live there, but four are now married and live elsewhere. All of the households we interviewed were aware of the MIVI urban renewal program and had applied for it. Of the three families, two preferred to stay in Chorrillo, while the third wants a new unit regardless of location. It is interesting to note that this third interviewee's wife is participating in the women's construction training program and may, therefore, acquire a unit in San Miguelito.

One family reported paying $4.50 monthly for water, but did not pay for electricity. Another reported paying $5.50 monthly for water and a "small amount" for electricity. The third family reported paying $20 monthly for electricity, while not paying anything for water.

The households we spoke with reported monthly incomes of $150, $560, and $648. One interviewee said he could pay up to $60 a month for a new unit, excluding water and light. Another said she could pay up to $40 a month, and the third said he was able to pay up to $150 a month.

The conditions of overcrowding and disrepair are very apparent. In the first instance, a family of four shared 20 square meters of space. The bathroom, shower, and water faucet were shared with 19 other rooms. In the second, a family of seven shared 20 square meters of space. The faucet and shower were shared with 14 rooms and the toilet with 8. In the third instance, a family of 10 was living in 35 square meters, divided into two rooms. A bathroom, shower, and faucet were shared with 24 other rooms.

Chorrillo is located in downtown Panama, and there is easy access to employment, schools, shopping, and recreation. The streets are paved and buses pass through the area frequently. In all instances in which we inquired, we were told that the children were in school. The garbage collection was criticized, but mostly for lack of cooperation among the households living in a building. The garbage truck passes through the area on a daily basis.

As was mentioned earlier, the households interviewed were from Chorrillo, and two of the three would prefer to stay there. They do not see any way to renovate their existing units. They know about the Nuevo Chorrillo Cooperative, but consider the community too far away to serve their needs. They have high hopes for the urban renewal project and expect to be able to relocate to new units within Chorrillo. It remains to be seen whether the Ministry of Housing will produce units within their means, allowing them to fulfill their expectations. See Exhibit B-6, Summary of Interview Findings: Unaffected Areas, and Exhibit B-7, Sample Questionnaire for the Unaffected Areas, immediately following.

Exhibit B-3. Summary of Interview Results, Nuevo Chorrillo

Interview Identification Number	Previous Place of Residence	No. of Persons in Household		No. of Rooms		Public Water Source Price/No. of Users		Sanitary Services		Electricity	
		Before	After	Before	After	Before	After	Before	After	Before	After
1	Pueblo Nvo.	6	4	1 A=18m^2	4 A=49m^2	($2)/40 Pers.	($2)/4 Pers.	40 Persons	(Incl.) Priv.	(6) Priv.	(6) Priv.
2	San Miguelito	6	7	1 A=24m^2	4 A=49m^2	($2)/40 Pers.	($2)/7 Pers.	6 Latrines	(Incl.) Priv.	(6) Priv.	(6) Priv.
3	Chorrillo	4	5	1 A=20m^2	4 A=70m^2	($7)/50 Pers.	($2)/5 Pers.	50 Persons	(Incl.) Priv.	(8) Priv.	(22) Priv.
4	Sta. Ana(Pma)	6	5	1 A=18m^2	4 A=49m^2	($2)/15 Pers.	($2)/5 Pers.	15 Persons	(Incl.) Priv.	(2) Priv.	(12) Priv.
5	Chorrillo	1	2	1 A=15m^2	4 A=49m^2	(-)/40 Pers.	($2)/2 Pers.	80 Persons	(Incl.) Priv.	(12) Priv.	(14) Priv.
6	Carasquilla	5	5	2 A=30m^2	4 A=70m^2	($6)/10 Pers.	($2)/5 Pers.	10 Persons	(Incl.) Priv.	(8) Priv.	(17) Priv.
7	Samaria (San Mto.)	7	7	1 A=18m^2	4 A=70m^2	($2)/30 Pers.	($2)/7 Pers.	30 Persons	(Incl.) Priv.	(13) Priv.	(15) Priv.
8	Boca la Caja	10	3	2 A=24m^2	4 A=70m^2	($8)/10 Priv.	($2)/3 Pers.	10 Persons	(Incl.) Priv.	(12) Priv.	(8) Priv.
9	Chorrillo	6	10	1 A=30m^2	4 A=49m^2	($10)/40 Pers.	($2)/10 Pers.	40 Persons	(Incl.) Priv.	(10) Priv.	(18) Priv.
10	Chorrillo	9	9	1 A=35m^2	4 A=49m^2	($2)/30 Pers.	($2)/9 Pers.	9 Persons	(Incl.) Priv.	(7) Priv.	(13) Priv.
Average		6	5.7	1.2 (A=23.2m^2)	4 (A=57.4m^2)	4.10 (30.5)	($2)5.7	29 Persons	5.7 Persons	$/7.40	$/13.10

Exhibit B-3. Summary of Interview Results, Nuevo Chorrillo (cont.)

Interview No.	Age	Sex	Sub-Rental, Animals, or Business Before	Sub-Rental, Animals, or Business After	Telephone		Total Annual Income		Monthly Household Expenses: Rent, Power, Water, and Telephone	Monthly Household Expenses: Mortgage, Power, Water, and Telephone	Monthly Transportation Expenses	
					Before	After	Before	After	Before	After	Before	After
1	40	F	No	No	No	No	$6,600	$8,640	$24.00	$52.92	$6.50	$30.00
2	43	M	No	Sodas and crackers Small business	No	Yes	$3,000	$6,250	$21.00	$61.86	$19.50	$30.00
3	35	F	No	No	No	No	$3,600	$3,600	$15.00	$78.00	$11.00	$37.00
4	42	M	No	No	No	No	$4,617	$5,160	$20.00	$63.16	$10.00	$43.00
5	51	F	No	No	Yes	No	$ 676	$1,716	$21.00	$58.00	$ 8.00	$17.80
6	44	F	No	Chickens and ducks for home consumption	Yes	Yes	$3,600	$6,000	$40.50	$95.18	$13.00	$42.00
7	49	F	No	No	No	No	$4,848	$6,948	$15.00	$70.32	$26.00	$85.00
8	20	F	No	No	Yes	No	$2,100	$1,440[1]	$20.00	$73.00	$ 6.50	$21.67
9	48	M	No	Cares for children Chickens for home consumption	No	No	$4,200	$4,800	$20.00	$63.16	$26.00	$92.00
10	29	M	No	No	Yes	No	$4,800	$6,600	$17.00	$62.15	$13.00	$33.00
Average							$3,804	$5,142 (35%)	$21.35	$67.68 (217%)	$13.95	$43.15 (210%)

[1]A friend gives her $120 per month.

Exhibit B-4. Sample Questionnaire for Nuevo Chorrillo and "Roberto Duran"

QUESTIONARIO PARA ENTREVISTAS

I. Descripcion de Vivienda, Infraestructura, y Servicios Comunitarios

1.1 Comunidad:

Direccion:

1.2 Persona Entrevistada:

Edad ___ ___

Sexo M F

Relacion a cabeza de familia _____

1.3 Cabeza de Familia

Edad ___ ___

Sexo M F

		Anterior	Actual
1.4	Tenencia: actual	_____	_____
	anterior	_____	_____
1.5	Ubicacion:	_____	_____
1.6	Numero de personas en hogar	_____	_____
1.7	Numero de cuartos en la vivienda	_____	_____
1.8	Numero de metros cuadrados construidos (mas o menos que antes?)	_____	_____
1.9	Numero de metros cuadrados de lote (mas o menos que antes?)	_____	_____
1.10	Tiempo de residir en la vivienda	A____ M____	A____ M____
1.11	Tiempo vivir en la comunidad		
1.12	Procedencia _____ Cuando vino? Tiempo de vivir en la cuidad de Panama antes de adquirir la vivienda actual	n/a	A____ M____

1.13 Materiales de construccion:

	Piso	Techo	Paredes
actuales:			
previos:			

1.14 Infraestructura:

	Anterior	Actual
1. Agua:	_____	_____
2. Alcantarillado:	_____	_____
3. Energia Electrica	_____	_____

Exhibit B-4. Sample Questionnaire for Nuevo Chorrillo and "Roberto Duran" (cont.)

1.15 Costo por mes de los servicios anteriores B/_____ B/_____

1.16 Usos de la vivienda:

	Anterior	Actual
Alquiler	_____	_____
Animales	_____	_____
Venta	_____	_____
Taller	_____	_____
Otro (especifique)	_____	_____

1.17 Servicios compartidos con otros hogares (indique numero de hogares compartidos):

Bano	_____	_____
Cocina	_____	_____
Lavanderia	_____	_____
Agua	_____	_____
Telefono	_____	_____
Otro (especifique)	_____	_____

1.18 Empleo, educacion e ingreso de miembros del hogar: (ponga informacion en el cuadro apropiado)

Empleo e ingreso de adultos (ver cuadro 1)

Educacion e ingreso - menores (ver cuadro 2)

Exhibit B-4. Sample Questionnaire for Nuevo Chorrillo and "Robert Duran" (cont.)

CUADRO 2

Direccion: _____
Comunidad: _____

EDUCACION E INGRESO - MENORES (18 anos y menos)

				- Escuela, Asistida por que?			- Empleo -			
Menor No.	Edad	Sexo	Grado Act. o Mas Alto	Publica/ Priv.	Lugar	Dist.	Ocupacion	Dist.	Frecuencia	Ingreso Estimado

Exhibit B-4. Sample Questionnaire for Nuevo Chorrillo and "Roberto Duran" (cont.)

EMPLEO E INGRESO DE ADULTOS

Direccion:
Comunidad:

Adulto Numero

Posicion en hogar ___ ___

Edad _____ Sexo M F

Ocupacion _____

Empleo principal actual

Auto-empleado? _____ De la familia? _____

Lugar de empleo _____ Distancia de la vivienda _____ km

Estimado ingreso anual (cantidad y frecuencia del ingreso; tome en cuenta periodos largos de desempleo durante ano pasado; para los auto-empleados, restar costos del negocio del ingreso bruto)

Estimado Anual: B. _____

Empleo secundario actual

Auto-empleado? _____ De la familia? _____

Lugar de empleo _____ Distancia de la vivienda ____ km

Ingreso anual estimado:

Estimado Anual: B. _____

Transferencias recibidas:

Fuente _____

Frecuencia

Cantidad

Estimado Anual: B. _____

Exhibit B-4. Sample Questionnaire for Nuevo Chorrillo and "Roberto Duran" (cont.)

1.19 Gastos del Hogar: (para vivienda y servicios)	Cantidad	Frecuencia	Anual
Alquiler o hipoteca			
Agua y Alcantarillado			
Electricidad			
Impuestos			
Transporte			
Otro (especifique)			
_____			

Gastos Anuales Estimados B. _____

1.19.1 Ha tenido problemas con el pago de alquiler o hipoteca? Describa. S N F

1.19.2 Quien contribuye al pago de la vivienda? Que porcentaje?

_____ _____

_____ _____

_____ _____

1.20 Servicio Comunitarios:
(Por favor vease Cuadro No. 3)

Exhibit B-4. Sample Questionnaire for Nuevo Chorrillo and "Robert Duran"

CUADRO 3

1.20 Servicios Comunitarios

Servicio	1. Presente Ahora?	2. Presente al Llegar?	3. Como y Cuando se consiguio?	4. Quien Pago	5. Quien Trabajo

Exhibit B-4. Sample Questionnaire for Nuevo Chorrillo and "Roberto Duran" (cont.)

1.21 Productos basicos accesibles (alimentos, ropa, etc.)

		S	N
1.	Estan accesible facilmente?	_____	_____
	Si no, donde hace las compras?	_____	km
2.	Se paga mas aqui que en otros sitios?	_____	_____
	Donde venden mas barato?	_____	
	A que distancia?	_____	km
1.	Participa en una organizacion comunitaria? Por que si o no?	_____	_____
2.	Piensa que las organizaciones comunitarias aqui han sido eficaces en la consecucion de mejoras para la comunidad? Por que si o no?	_____	_____

3. Quien es el representante del sector donde usted vive? _____

Donde vive el o ella?
Direccion: _____

_____

Exhibit B-4. Sample Questionnaire for Nuevo Chorrillo and "Roberto Duran" (cont.)

II. Adquisicion de Vivienda, Infraestructura y Servicios Comunitarios

2.1 Es usted el primer dueno o inquilino? _____

1. Si no es el primero sabe a donde se mudaron los anteriores? _____

2. Por que se mudaron?

2.2 Por que salio de la vivienda anterior?

2.3 Como llego a saber de esta vivienda?

Tenia informacion adecuada? S N D

2.4.1 A cuales otras organizaciones acudio para ayuda en la busqueda de vivienda?

1. Cual fue la respuesta?

2.5 Por que decidio mudarse a esta vivienda?

2.6 Habia otras viviendas dentro de las posibilidades economicas de usted? S N D

2.7 Cuanto tiempo estuvo en tramite la solicitud para esta vivienda? A _____ M _____

2.8.1 Cuales eran los requisitos para adquirir esta vivienda?

2. Que tenia que hacer para poder cumplir con los requisitos?

3. Esta de acuerdo con los requisitos que tenia que cumplir para adquirir la vivienda? S N F

Si o no y por que?

Exhibit B-4. Sample Questionnaire for Nuevo Chorrillo and "Roberto Duran" (cont.)

APLICABLE A PROPIETARIOS

2.9.1 Cuanto le costo esta vivienda?

2. Si vendiera la vivienda hoy cuanto pediria? B _____

3. Como obtuvo los fondos para el pago inicial?

Para los otros gastos iniciales (notaria, etc.)?

2.10.1 Esta satisfecho con la vivienda adquirida?

2. Por que?

2.11.1 Habia que hacer reparaciones a esta vivienda cuando la compro? S N F

2. Quien hizo las reparaciones y de que tipo eran?

3. Quien las pago?

III. Beneficios de Vivienda, Infraestructura y Servicios Comunitarios
Beneficios Economicos

3.1 Mejoras

1. Ha aumentado el tamano de la vivienda? S N

Si si, en que consisten las adiciones?

Cuanto costaron? _____ Cuando se hicieron? _____

2. Por que amplio?

3. Quien hizo el trabajo?

4. Considera que la vivienda esta terminada? S N F

Si no, que quisiera agregar?

5. Ha reemplazado los materiales originales con otros? S N F

En caso afirmativo, Como financio estos materiales?

Exhibit B-4. Sample Questionnaire for Nuevo Chorrillo and "Roberto Duran" (cont.)

6. Quien repara y mantiene la vivienda?

7. Cuanto considera que costaria la vivienda hoy?

SI LA VIVIENDA NO ES PROPIA ELIMINE 3.2.

3.2 Venta de la vivienda

1. Ha pensado vender la vivienda? S N F

   En caso afirmativo, por que?

2. Si vendiera la vivienda ahora tendria una ganancia en comparacion con el precio que pago? Cuanto?

3. Si vendiera la vivienda donde compraria otra? Por que?

SI NO HAY ACTIVIDAD ECONOMICA EN LA VIVIENDA ELIMINE 3.3

3.3 Negocio en la Vivienda

1. Trabajo en este negocio antes de adquirir esta vivienda? S N

   Si no, por que lo empezo?

2. Planeo empezar este negocio cuando se mudo S N F

3. Despues de cuanto tiempo de vivir aqui empezo esta negocio?

   A _____ M _____

4. Por que empezo el negocio en esta vivienda?

3.4 Ha aumentado en una forma significativa el ingreso del hogar desde que se mudo? Por que? S N F

3.5 Tiene mejor acceso a credito desde que adquirio esta vivienda y por que? S N F

Exhibit B-4. Sample Questionnaire for Nuevo Chorrillo and "Roberto Duran" (cont.)

3.6 Ahorros

1. Ahorra? Si no, por que?

2. Si si, como y por cuanto tiempo ha ahorrado?

3. Cuanto tiene ahorrado ahora?

4. Para que esta ahorrando?

Seguridad Fisica y Legal

SI LA CASA ES PROPIA SALTE 3.8, SI ES ALQUILADA CONTESTE 3.8. CONTINUE CON 3.9.

3.7.1 Quien figura en la escritura?

2. Quien figura en la escritura?

3.8 Le gustaria ser propietario? S N F

Por que si o no?

3.9 Quisiera que la vivienda fuera construida de materiales diferentes? S N F

3.10 Piensa que tiene proteccion adecuada contra:

Incendios	S	N	F
Inundaciones	S	N	F
Robas	S	N	F
Rayos	S	N	F

3.11 Que es lo que mas le gusta de esta comunidad?

3.12 Que es lo que menos le gusta de esta comunidad?

3.13 Para usted es importante tener a sus familiares cerca? S N F

3.14 Estan cerca? S N F

3.15 Invita a sus amigos y familiares a su casa? S N F

Exhibit B-4. Sample Questionnaire for Nuevo Chorrillo and "Roberto Duran" (cont.)

3.16 Los invitaba a la vivienda anterior? S N F

3.17 Considera que su salud y la de los miembros de su hogar esta mejor, igual o peor desde que se mudaron a esta vivienda? Por que?

Beneficios Culturales

3.18 Cual es el ano escolar mas avanzado del Entrevistado? _____

Cabeza de Familia _____

3.19 Que planes tiene para la educaicon de los hijos?

3.20 Otras oportunidades de educacion.

	1. Existen	2. Cursos?	3. Aprovechado?
Escuela Vocacional	S N F	_____	S N
Clases para Adultos	S N F	_____	S N

3.21 Cual tiene usted?

Carro _____

Nevera _____

Estufa _____
(de que clase?)

Televisor _____

Radio _____

Equipo de Sonido _____

3.22.1 Que planes para el futuro puede hacer para usted mismo y para sus hijos ya que tiene esta casa?

2. Son planes que no habria podido hacer antes?

Exhibit B-5. Summary of Interview Results, "Roberto Duran"

Interview No.	Sex	Age	Location	No. of Persons		Number of Rooms		Monthly Water Costs		Sanitary Facilities		Monthly Electricity Costs	
				Before	After	Before	After	Before	After	Before	After	Before	After
1	F	21	San Miguelito	7	3	3[1]	1 ($25m^2$=269)	$18.50	$9.87	Toilet	Toilet	$12.00	$10.89
2	F	17	San Miguelito	9	8	1 ($50m^2$=538)	1 ($50m^2$=538)	$2.00	$7.50	Latrine	Toilet	$8.50	$17.00
3	F	32	Villa Guadalupe (Panama)	12	3	2 ($30m^2$=323)	1 ($25m^2$=269)	$7.00	$11.00	Toilet	Toilet	$20.00	$14.00
4	M	56	San Isidro (Panama)	7	7	3 ($120m^2$=1290)	2 ($40m^2$=430)	$4.00	$8.00	Septic	Toilet	$8.00	$10.00
5	F	16	San Miguelito (Panama)	7	4	2 ($45m^2$=484)	4 ($70m^2$=753)	$4.00	$8.00	Latrine	Toilet	$8.00	$10.00

[1] Living/dining area, bath, kitchen.

Exhibit B-5. Summary of Interview Results, "Roberto Duran" (cont.)

Interviewee		Housing Sub-Rentals, Animals, or Business		Telephone		Total Annual Income		Monthly Household Expenses: Rent, Light, Water, and Phone	Monthly Household Expenses: Mortgage, Light, Water, and Phone	Annual Transportation Expenses	
Age	Sex	Before	After	Before	After	Before	After	Before	After	Before	After
21	F	No	2 rabbits & 1 dog	Yes ($8.00)	No	$4,200	$4,200	Lived in parents'house	$55.33		$312.00
17	F	No	No	No	No	$2,704	$3,016	$10.50	$59.72	$156.00	$208.00
32	F	No	No	Yes	No	$2,163	$4,367	$27.00	$62.00	$104.00	$182.00
56	M	Game cocks		Yes, 2 months	No	$3,660	$4,860	$24.00	$55.00	$312.00	$312.00

Exhibit B-5. Summary of Interview Results, (cont.) San Miguelito

Interviewee			Monthly Water Costs		Monthly Electricity Cost		Sewerage Connection Cost		Streets		Garbage Collection	
Age	Sex	Annual Salary	Before	After	Before	After	Before	After	Before	After	Before	After
40	F	$3,182	Communal, $2.00	$12.00	$5.00	$14.00	Latrine	$500.00 to install	OK	Good	$1.50, Poor	$1.50, Poor
33	M	$2,600	Communal, $2.00	$6.00	$22.00	$16.00	Latrine	$500.00 to install	OK	Better	$1.50, Poor	$1.50, Poor
26	F	$8,000	N/A	$10.00	$9.45[1]	N/A	Latrine	Latrine	None	Good	$1.50, Poor	$1.50, Poor
22	F	$3,120	$2.00	$8.00	$135.00	$145.00[1]	Latrine	$500.00 to install	OK	Good	$1.50, Poor	$1.50, Poor
37	M	$3,473	$2.00	$6.00	$6.00	$9.00	Latrine	Latrine	OK	Good	$1.50, Poor	$1.50, Poor

[1]Rents a store.

Exhibit B-5. Summary of Interview Results, (cont.) "Nuevo Veranillo"

Interviewee			Years	Water Connection		Electricity		Sewerage		Streets		Garbage Collection	
Age	Sex	Annual Salary	In Community	Before	After	Before	After	Before	After	Before	After	Before	After
39	F	$700	14	$2.70	$27.00[1]	$15.00	$134.00[2]	Latrine	Latrine	Bad	Good	Poor	Poor
50	F	$300	15	Communal, didn't pay	$9.00	No power	$7.00	Latrine	$1,100.00[3]	Bad	Good	Poor	Poor
21	F	$250	16	Communal, didn't pay	$12.00	No power	$14.00	Latrine	$500.00[3]	Bad	Good	Poor	Poor
46	F	$510	15	Communal, didn't pay	$8.00	No power	$34.00	Latrine	$600.00[3]	Bad	Good	Poor	Poor
56	M	$900	5	$7.50	$8.60	$23.00	$45.00	Latrine	$500.00[3]	Bad	Good	Poor	Poor
66	F	$300	13	Communal, didn't pay	$6.00	No power	$26.00	Latrine	Latrine	Bad	Good	Poor	Poor

[1] Has a laundry.
[2] Has a business.
[3] To install.

Exhibit B-6. Summary of Interview Findings: Unaffected Areas, Curundu

Interview No.	Sex	Age	No. of Persons Occupying the Housing Space	Years in Community	Monthly Family Salary	Water	Sanitation	Monthly Electricity Cost	Level of Education	Household Possessions	Type of House
1.	F	35	$6/25m^2=270ft^2$	11	$120.00	Communal	Latrine	$2.35	4th grade	Stove	Wood & zinc
2.	M	32	$4/25m^2=270ft^2$	15	$150.00	Communal	No latrine	None	None	Wood burner	Wood & zinc
3.	F	50	$9/40m^2=430ft^2$	29	$200.00	Communal	Latrine	$10.00	2nd grade	Gas stove	Wood & zinc

Exhibit B-6. Summary of Interview Findings: Unaffected Areas, (cont.) Chorrillo

Interview No.	Sex	Age	No. of Persons Occupying the Housing Space	Years in Community	Monthly Family Salary	Monthly Water Costs	Sanitation	Electricity	Level of Education	Household Possessions	Type of House
1.	F	26	$4/20m^2=215ft^2$	19	$657.00	Communal (4.50)	Communal toilet	$15.00	6th grade	Radio, TV, stove	Wood & zinc
2.	F	45	$7/20m^2=215ft^2$	45	$150.00	Communal (5.50)	Communal toilet	$1.00	1 yr high school	Radio, TV, stove	Wood & zinc
3.	M	50	$10/35m^2=376ft^2$	37	$360.00	Communal	Communal toilet	$20.00	6th grade	Radio, TV, hi-fi, and stove	Wood & zinc

Exhibit B-7. Sample Questionnaire for the Unaffected Areas

QUESTIONARIO PARA ENTREVISTAS

I. Descripcion de Vivienda, Infraestructura, y Servicios Comunitarios

1.1 Comunidad

Direccion

1.2 Persona Entrevistada:

Edad ___ ___

Sexo M F

Relacion a cabeza de familia _____

1.3 Cabeza de Familia

Edad ___ ___

Sexo M F

		Actual
1.4	Tenencia: actual:	_____
	anterior:	_____
1.5	Ubicacion:	_____
1.6	Numero de personas en hogar	_____
1.7	Numero de cuartos en la vivienda	_____
1.8	Numero de metros cuadrados construidos	_____
1.9	Numero de metros cuadrados de lote	_____
1.10	Tiempo de residir en la vivienda	A _____ M _____
1.11	Tiempo de vivir en la comunidad	_____

1.12 Procedencia _____ Cuando vino?

Tiempo de vivir en la cuidad de Panama antes de adquirir la vivienda actual A _____ M _____

1.13 Materiales de construccion:

	Piso	Techo	Paredes
actuales:			

		Actual
1.14	Infraestructura:	
	1. Agua:	_____
	2. Alcantarillado:	_____
	3. Energia Electrica	_____
1.15	Costo por mes de los servicios	B _____

Exhibit B-7. Sample Questionnaire for the Unaffected Areas (cont.)

1.16 Usos de la vivienda: Actual

Alquiler _____

Animales _____

Venta _____

Taller _____

Otro (especifique) _____

1.17 Servicios compartidos con otros hogares (indique numero de hogares compartidos):

Bano _____

Cocina _____

Lavanderia _____

Agua _____

Telefono _____

Otro (especifique) _____

1.18 Empleo, educacion, e ingreso de miembros del hogar: (ponga informacion en el cuadro apropiado)

Empleo e ingreso de adultos (ver cuadro 1)

Educacion e ingreso - menores (ver cuadro 2)

1.19 Gastos del Hogar:

(para vivienda y servicios)	Cantidad	Frecuencia	Anual
Alguiler o hipoteca			
Agua y Alcantarillado			
Electricidad			
Impuestos			
Transporte			
Otro (especifique)			

Exhibit B-7. Sample Questionnaire for the Unaffected Areas (cont.)

CUADRO 1

EMPLEO E INGRESO DE ADULTOS

Direccion:
Comunidad:

Adulto Numero

Posicion en hogar ___ ___

Edad _____ Sexo M F

Ocupacion _____

Empleo principal actual

Auto-empleado? _____ De la familia? _____

Lugar de empleo _____ Distancia de la vivienda_____ km

Estimado ingreso anual (cantidad y frecuencia del in greso; tome en cuanta periodos largos de desempleo durante ano pasado; para los auto-empleados, restar costos del negocio del ingreso bruto)

Estimado Anual: B. _____

Empleo secundario actual

Auto-empleado? _____ De la familia? _____

Lugar de empleo _____ Distancia de la vivienda _____ km

Ingreso anual estimado: _____

Estimado Anual: B. _____

Transferencias recibidas:

Fuente _____

Frecuencia

Cantidad

Estimado Anual: B. _____

Exhibit B-7. Sample Questionnaire for the Unaffected Areas

CUADRO 2

Direccion: _____
Comunidad: _____

EDUCACION E INGRESO - MENORES (18 anos y menos)

				- Escuela, Asistida por que?			- - - - - - - -Empleo - - - - - - - - - - -			
Menor No.	Edad	Sexo	Grado Act. o Mas Alto	Publica/ Priv.	Lugar	Dist.	Ocupacion	Dist.	Frecuencia	Ingreso Estimado

Exhibit B-7. Sample Questionnaire for the Unaffected Areas (cont.)

Gastos Anuales Estimados
B. _____

1.19.1 Ha tenido problemas con el pago do alquiler o hipoteca? Describa. S N F

1.19.2 Quien contribuye al pago de la vivienda? Que porcentaje?

_____ _____

_____ _____

_____ _____

1.20 Servicios Comunitarios:
(Por favor vease Cuadro No. 3)

1.21 Productos basicos accesibles (alimentos, ropa, etc.)

	S	N
1. Estan accesible facilmente?	_____	_____
Si no, donde hace las compras?	_____	km
2. Se paga mas aqui que en otros sitios?	_____	_____
Donde venden mas barato?	_____	
A que distancia?	_____	km

1.22 Participa en una organizacion comunitaria? Por que si o no? _____ _____

1.23 Piensa que las organizaciones comunitarias aqui han sido eficaces en la consecucion de mejoras para la comunidad? _____ _____

Por que si o no?

1.24 Ahorros

1. Ahorra? Si no, por que?
2. Si si, como y por cuanto tiempo ha ahorrado?
3. Cuanto tiene ahorrado ahora?
4. Para que esta ahorrando?

Exhibit B-7. Sample Questionnaire for the Unaffected Areas (cont.)

1.25 Cual es el ano escolar mas avanzado del entrevistado?

_____

Cabeza de familia _____

1.26 Que planes tiene para la educacion de los hijos?

1.27 Cual tiene usted?

Televisor _____

Carro _____

Radio _____

Nevera _____

Equipo de Sonido _____

Estufa _____
(de que clase?)

1.28 Piensa usted mudarse a otra vivienda? Donde? Describa.

1.29 Le gustaria vivir en otro sitio? Donde?

1.30 Quisiera tener una vivienda hecha de otros materiales? Cuales?

1.31 Cuanto piensa que podria pagar mensualmente para una vivienda nueva?

1.32 Ha investigado algun proyecto de vivienda del Ministerio de Vivienda, la Cooperativa Nuevo Chorrillo o de otra institucion?

1.33 Preferiria vivir en uno de los edificios nuevos aqui o esta dispuesto a mudarse a las afueras de la ciudad--por ejemplo Mano de Piedra--para conseguir una vivienda nueva?

1.34 Si tuviera que reubicarse adonde se iria? Por que?

1.35 Cuales son las ventajas de la vivienda que tiene? Ubicacion? Precio? Servicios de la comunidad? Vecindario? Etc.?

1.36 Cuales son las desventajas de la vivienda que tiene? Por que?

1.37 Si pudiera mejorar la vivienda actual que haria primero? Por que?

1.38 Quien haria el trabajo y como finanziaria los materiales necesarios?

1.39 En su opinion, de los servicios comunitarios que usted conoce, cual necesita mejorarse con mayor urgencia? Que se puede hacer? Por que?

APPENDIX C

SOURCES CONTACTED AND BIBLIOGRAPHY

SOURCES CONTACTED

Persons Who Assisted the Evaluation Team

MIVI:

Minister of Housing	Ing. Abel Rodriguez
Vice Minister of Housing	Lic. Carlos Gonzalez
Special Assistant	Antonio De Leon
Special Assistant	Nilson Wald
Director of Budget and Program	Lic. Winston Welch
Director of Real Estate	Lic. Belinda de Camazon
Director of Social Affairs	Lic. Benigna de Magallon
Budget and Program	Arq. Yolanda de Rivera
Budget and Program	Arq. Pacheco
Social Affairs	Rosa Ramos
Social Affairs	Dilia R. de Morales
AID Coordinator	Ing. Josefa Arroyo
Contract Advisor	Julie Otterbein

MIPPE:

Vice Minister	Lic. Orville Goodin
Chief, Housing Sector	Arq. Vietma de Winter
Regional Planning Office	Arq. Humberto Mena

DUISMI:

Executive Director, High Com.	Inq. Nilson Espino
Field Director	Ing. Roberto Ycaza

BHN:

Director General	Silverio Melfi
Assistant Director	Eric Aparicio
Director for Cooperatives	Carlos Tovar

FUNDAVICO:

Director General	Arq. Federico Ritter

BNP:

Chief, Financial Evaluation Section	Damaso A. Diaz

Nuevo Chorrillo Cooperative:

Director	Roberto Batista
Assistant Director	Carlos Cabal
Controller	Lic. Rugiere Castillo
Chief, Technical Department	Arq. Bruno Gavasini

CAPAC:

President	Ing. Hector Ortega

IPACOOP:

Staff Member	Maria Elena Braggiatti

USAID/Panama:

Director	Robin Gomez
Assistant Director	Frank Almaguer
Program Office	Robert Hechtman
Project Design Office	Ben Severn
Project Design Office	Steve Reinman
Project Design Office	Frank Miller

Regional Housing Office:

Director	Mario Pita
Housing Officer	Earl Kessler
Housing Officer	Bill Gelman
Housing Officer	Sonny Low

We wish to express our gratitude to the many individuals who assisted with and contributed to the evaluation. A special thanks goes to the secretaries of the Regional Housing Office, Carlota de Yanguez, Edna de Jaen, and Gloria Bantz, as well as to the staff of the Executive Office (John Speicher, Diamantina Wong) for all their assistance. This evaluation benefited greatly from their support.

BIBLIOGRAPHY

Area Auditor General for Latin America, "HG Investment Guaranty Program," Panama, November 1979.

Banco Hipotecario Nacional, "Informe Anual," 1981.

Bernbaum, M., "A Study of the Employment and Related Characteristics of Residents of Four Low-Income Neighborhoods in Panama City and Colon," prepared for MIVI and AID, April 1980.

CAPAC, "Informe Sobre la Situacion de la Industria de la Construccion en la Republica de Panama," Punto No. 7 de la Agenda de la XXIX Reunion del Consejo Directivo de la FIIC, November 1981.

Comision Multi-Sectoral Sobre Obras de Infraestructura Basica con Apoyo Alimentario, "Report on the Technical Assistance Mission Concerning Operations of the Peruvian Multi-Sectoral Commission on Food for Work in Basic Infrastructure Projects," (preliminary), October 1980.

Contraloria General de la Republica (Direccion de Auditoria), "Informe de Auditoria Relacionado con el Examen de las Operaciones Financieras de la Cooperativa de Vivienda Nuevo Chorrillo," August 1981.

Contraloria General de la Republica (Direccion de Estadistica y Censo), "Panama en Cifras," November 1980.

Contraloria General de la Republica, Direccion de Estadistica y Censo, "Indicadores Economicos y Sociales de Panama, 1970-1979," November 1980.

Cooperativa de Vivienda Nuevo Chorrillo, Estatutos de la Cooperativa de Vivienda Nuevo Chorrillo, August 1973.

Cooperativa de Vivienda Nuevo Chorrillo, "Informe Anual de la Cooperativa Nuevo Chorrillo," September 1981.

Cooperativa de Vivienda Nuevo Chorrillo, "Informe de la Comision Especial: Cooperativa de Vivienda de Nuevo Chorrillo," July 1978.

Cooperativa de Vivienda Nuevo Chorrillo, "Informe Sobre el Proyecto: Cooperativa de Vivienda de Nuevo Chorrillo, (Direccion Tecnica)," November 1980.

Instituto de Fomento de Hipotecas Aseguradas, "Project Paper for HG 007."

IPACOOP, "Informe de Analisis Social de la Cooperativa Nuevo Chorrillo," June 1981.

Cooperativa de Vivienda Nuevo Chorrillo, La Historia de Nuevo Chorrillo: Cooperativa de Vivienda Nuevo Chorrillo, 1973.

List of Small Businesses in San Miguelito by type, capitalization, fixed investment, and sales, June 1981.

MIPPE, "DUISMI: Evaluacion," June 1980.

MIPPE, "La Radiografia de la Pobreza," 1979.

MIPPE, "Observaciones Sobre el Programa DUISMI, Fase 1," June 1981.

MIVI, "Analisis de Cambios Socio-Economicos de Familias de Nuevo Veranillo, 1968-1980," January 1981.

MIVI, "Documento de Factibilidad y Ejecucion para HG 010/011," Volumes 1 and 5, 1981.

MIVI, "Documento de Factibilidad y Ejecucion, Proyecto Torrijos-Carter," 1981.

MIVI, "Damnificados de Curundu y Otros Sectores que Fueron Reubicados a Roberto Duran y Torrijos-Carter," November 1981.

MIVI, "Estimacion de las Necesidades de Vivienda en la Republica de Panama," Informe Preliminar, December 1976.

MIVI, "Estudio de Construccion Progressiva," Nuevo Veranillo, September 1980.

MIVI, "Estudio del Sistema de Entrega de Vivienda," September 1981.

MIVI, "Evaluacion del Proyecto: Cabo Verde," September 1981.

MIVI, "Informe del Ministerio de Vivienda a la Honorable Asamblea de Representantes de Corregimientos," 1980-1981.

MIVI, "Nuevo Tivoli: Analisis Socio-Economico Proyectado al Programa de Renovacion Urbana," October 1981.

MIVI, "Renovacion Urbana, Primera Fase," May 1981.

MIVI, "Seguimiento a los Proyectos Roberto Duran y Torrijos-Carter," Informe No. 1, March 1981.

Multi-Family Housing Services, Inc., "Evaluation of the Nuevo Chorrillo Cooperative Project," December 1978.

Popko, Edward S., "Squatter Settlements and Housing Policy in Colombia," MIT, Spring 1980.

"Report of the Area Auditor General on the HG Program in Latin America," October 1973.

UN, WHO, AID, "Definitions of Shelter and Housing Policy Guidelines for Developing Countries."

Universidad de Panama, Planes de Estudios, Facultad de Arquitectura, (Current).

URBE, "Project Paper for HG 010."

USAID, AID Handbook 1, Sup. A (PD-55), "Shelter Program Objectives," October 1974.

USAID AID Handbook 7, App. B (PD-67), "Urbanization and the Urban Poor," May 1976.

USAID, "Capital Assistance Paper for a Loan to the Instituto Tecnico de Vivienda Cooperativa Through IVU," 1967.

USAID, (DS/DIU), "All-Data Report on Panama," June 5, 1980.

USAID, "Evaluation of Panama Operational Program Grant," FCH, AID Contract otr-G-1583 (Panama), October 1980.

USAID, "Housing Issues and Impacts," PADCO for AID, August 1981.

USAID, Memo to A. Broehl From E. Chetwynd, ST/UD, "IIPUP Class C OPG Project, Panama," Memorandum of Conversation, September 17, 1981.

USAID, Memo to D. Dworkin, PPC/E, From J. Osborn, Asia/PD, "Issues and Suggestions for Housing Evaluation," December 30, 1980.

USAID, Memo to D. Dworkin, PPC/E, From R. Mitchell, NE/TECH/SA, "Considerations for the Proposed Impact Evaluations of Shelter Projects," January 5, 1981.

USAID, "Project Paper for HG 008," Nuevo Chorrillo.

USAID, "Project Paper for HG 009," Slum Upgrading (San Miguelito).

USAID, "Project Paper for HG 011," Shelter and Community Upgrading.

USAID, "Report on Peruvian Pueblos Jovenes Problems and Possibilities for USAID IIPUP Technical Assistance," AID Contract otr-C-1636, W.O. No. 7, November 1979.

USAID/Panama, "Shelter Sector Assessment for Panama," December 1977.

USAID/Panama, "Shelter Sector Strategy for Panama," AID Contract otr-C-1637, Work Order No. 3, October 1978.

USAID/Panama, Country Development Strategy Statement for Panama, FY 82, January 1980.

USAID/Panama, Country Development Strategy Statement for Panama, FY 83, January 1981.

USAID/Panama/RHO, "Formulacion de una Politica Nacional para la Vivienda," Revised, 1977.

USAID/Panama/RHO, "Informe de los Avances de la Investigacion de los Grupos Pobres, Empresas y Empresarios del Distrito de San Miguelito," CONAISA for USAID/RHO.

USAID/Panama/RHO, "Project Evaluation Summary (PES), HG 008, Nuevo Chorrillo," December 1978.

USAID/Panama/RHO, "Project Evaluation Summary (PES), HG 008, Nuevo Chorrillo," September 1980.

USAID/Panama/RHO, "Project Evaluation Summary (PES), HG 009, Slum Upgrading," April 1980.

USAID/Panama/RHO, "Project Evaluation Summary (PES), (912-0007), Integrated Improvement Program for the Urban Poor," (IIPUP/A) Community Development Advisor, April 1981.

USAID/Panama/RHO Project Files.

USAID/Panama/RHO, "Resumen Ejecutivo y Ampliaciones Conceptuales de Algunos Aspectos de la Investigacion de los Grupos Poblacion-ales Pobres, Empresas y Empresarios del Distrito de San Miguelito," CONAISA for USAID/RHO, June 1981.

World Bank, "Housing: Sector Policy Paper," 1975.

World Bank, "Panama's Development in the 1980's: A Special Economic Report," 2 volumes, July 1979.