EXTENDING THE LIMITS OF SELF-HELP HOUSING STRATEGIES IN LIMA

by

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ABSTRACT

This thesis is based on research done in the pueblos jóvenes (self-built settlements) of Lima, Peru during the summer of 1986. Taking as its premise that dweller-initiated construction is indispensable -- though not sufficient -- for the narrowing of Lima's housing gap, it focuses on developing ideas to make this means of construction more effective.

The paper begins with a discussion of some of the issues that revolve around the concept of self-help. It examines the ways in which self-help is currently practiced, noting wide variations in the quality of its results. It explores the context in which the Peruvian self-help tradition has evolved, emphasizing the complex socio-political organization that sets pueblo joven residents apart from their counterparts in the inner-city slums. Finally, it describes a promising new effort to provide technical assistance to Lima's self-help builders, and sets forth a variety of proposals for improving the success rate of low-income people who construct their own homes.

Thesis Supervisor: Dr. Judith Tendler

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Let us only hope; but not only only hope.

-- Piet Hein
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NOTE ON TERMINOLOGY

Whenever English-speaking authors write about non-English-speaking countries, they must choose between alienating half their readers with inscrutable foreign terminology and irritating the other half with clumsy, inadequate translations. To minimize confusion, this paper will generally favor the English terms except where they might be misleading or non-existent. In such cases, the following Spanish terms will be employed:

PUEBLO JOVEN: Literally "young town," this expression is unique to Peru; it was coined in the 1960's and soon became so popular that it drove all its synonyms out of common usage. On the surface "pueblo joven" is simply a euphemism for "squatter settlement," but it deserves preference over that term for two reasons. First, while such neighborhoods invariably start as a collection of jerry-built shanties clustered along bumpy dirt roads, they often gain in size and permanence until they become full-fledged urban communities; thus, the image of a "young" or maturing settlement is in many cases quite accurate. Secondly, most of the settlers have now been granted official titles,¹

¹ Law 24513 of June 3, 1986 ordered the issuance of land titles to all squatter families whose settlements had applied for official recognition by April 14 of that year and met certain other broad requirements. (Source: Título de propiedad para los asentamientos humanos [Lima: Editorial Inkari, 1986], pp. 1-4.)
making them fully recognized legal landowners. For this reason the term "squatter settlement" is no longer appropriate, even for many neighborhoods that were squatter settlements before.

The word "shantytown" would also misrepresent these neighborhoods because many of the original shanties in them have been replaced by conventional homes indistinguishable from those in any other part of Lima. In short, the only trait shared by all pueblos jóvenes is that they are, as the expression says, "young."

POBLADOR (from "pueblo"): Any resident of a pueblo joven. Again, since squatters do not legally own their land while many pobladores do, I have favored the Spanish term over the English one except where the reference is specifically to "those who squat."

ESTERA: A type of woven mat made from split reeds, used to build walls and sometimes roofs. It is by far the cheapest and most common material available for shack construction.\(^2\) Unfortunately it provides little insulation or protection and requires relatively frequent replacement. Some pobladores cover it with other substances (such as newspaper or cardboard) for greater warmth.

\(^2\) According to a 1984 census of the Villa El Salvador neighborhood, 83% of all shacks (or about 41% of all dwellings) had estera walls. These census results were published as Un pueblo, una realidad: Villa El Salvador (Lima: CUAVES, 1984). The data cited are found on p. 41.
ETERNIT: The name for several different varieties of roofing material made from corrugated asbestos-cement sheets. (Technically "Eternit" is a registered trademark, but since it is the only brand of asbestos-cement sheets on the Peruvian market, its name has become as generic as the old trademark "Styrofoam.") Eternit is also extremely common in the pueblos jóvenes,³ and makes a far more substantial roof than estera.

³ According to the same census cited above, some 55% of all roofs were made from Eternit, 25% from estera, and 20% from other materials. *Un pueblo, una realidad*, p. 42.
INTRODUCTION: WHY SELF-HELP?

The research that led to this thesis began as an inquiry into the possibilities and limitations of the self-help housing process. It soon moved, however, to asking how the limitations can best be confronted -- specifically in the case of Lima -- and this question is the focus of the present paper.

The expression "self-help," as used here, refers to homebuilding and home improvement which are either performed or supervised by the dwellers themselves. (Self-help advocates like John Turner have stressed the condition that "dwellers control the major decisions and are free to make their own contributions in the design, construction, or management of their housing."4) Of course, this kind of self-help has been practiced ever since people first emerged from caves, and if there were nothing more to it than this it would hardly merit all the attention it has received. What is significant -- and controversial -- about the Turner school is its portrayal of self-help as a fundamental right, a process more important than its own product, and a vital source of existential fulfillment.

For readers unfamiliar with the literature on self-help housing, or with the history of its practice in Peru, the title of this paper may require some explanation. The following

observations are therefore offered by way of background.⁵

When the squatter settlements of Lima first began their rapid multiplication in the 1940’s, they must have struck the middle and upper classes as grotesque symbols of the city’s poverty and explosive, uncontrollable growth. Many people regarded them as a shameful problem, a kind of "urban cancer" which needed to be excised. The Peruvian government, however, under populist dictator Gen. Manuel Odría (1948-56), actually supported squatter invasions with both protection and material aid. For aside from any humanitarian motives he might have had for helping the poor, Odría saw in these invasions a fertile source of popular support for his regime. He soon developed a typical patron-client relationship with the squatters, cultivating their dependency in order to keep them under his control.⁶

When civilian president Manuel Prado came to power in 1956, he brought with him important changes in settlement policy. The paternalistic cooptation of the Odría era gave way to an emphasis on squatter self-reliance and self-improvement. Rather than trying to keep squatters dependent on the state, the new administration encouraged them to pull themselves up by

⁵ Being only an introduction, this summary is necessarily simplified and is not intended as an intellectual history of the concept of self-help. The literature will be discussed further in Chapter One.

⁶ David Collier, Squatters and Oligarchs (Baltimore: Johns Hopkins, 1976), pp. 55-65. Collier provides an excellent account of the relationship between various Peruvian governments and the squatters.
their own bootstraps. A report by the president's Commission on Agrarian Reform and Housing stressed the importance of private property and individual initiative to the development of "an active and responsible citizenry" in squatter communities.\(^7\) Thus the squatters, as practitioners of self-help, gained a certain sort of official recognition for their activities. But as political scientist David Collier has pointed out, this recognition was rooted in a deeply conservative capitalist ideology; it was essentially a government effort to pre-empt radicalization of the squatters by bringing them into the ranks of the property-owning classes.\(^8\)

In the years that followed, John Turner, William Mangin, and other theorists from outside Peru drew wider attention to the concept of self-help. Squatter settlements, declared these authors, were "not the problem but the solution," a resourceful and (literally) constructive grass-roots response to the shortage of affordable housing in places where it was needed most. Turner's descriptions of self-help in Lima focused on its positive aspects -- how the urban poor, faced with the specter of homelessness, exercised their autonomy by building

\(^7\) Comisión para la Reforma Agraria y la Vivienda, Report on Housing in Peru, cited in Collier, op. cit., p. 79. See also pp. 75-78 in Collier on Pedro Beltrán's support for homeownership and self-help among the poor. (Beltrán was president of the above commission and later became prime minister of Peru.)

\(^8\) Collier, op. cit., pp. 66-82.
homes for themselves (though under the circumstances it is difficult to imagine what other choice they might have had).

Authors like Rod Burgess and Emilio Pradilla, however, have stressed the darker side of the story. They argue that serious limits on what poor people can do for themselves are inherent in the capitalist mode of production. Given such limits, they maintain, self-help does not really improve the lives of the poor; it only perpetuates their acquiescence in the system that exploits them. Yet these critics say little or nothing about what can be done to change this situation, short of overthrowing the offending system.

This paper will attempt to put aside the abstract characterizations of self-help as "good" or "evil," and concentrate on the fact that, until some alternative is discovered, continued reliance on self-help solutions is simply inevitable (at least in Peru). Probably most of the families in Lima live in owner-built homes, and the demand for new homes is growing much faster than the ability of conventional sources to supply them.

In fact, though the focus of this paper is on assisting low-income dwellers, it is important to bear in mind that self-help construction in Lima is far from being the exclusive province of the lower class. On the contrary, many middle-

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class families also undertake the long, arduous process of building a new house. While they can ease some of the hardships by contracting out the actual labor -- which the poor cannot always afford to do -- these families must often move to their new site in the midst of the construction process, living (or camping out) in one part of the house while the rest is still being built. This situation may drag on for years, as the family slowly accumulates the capital it needs to complete the entire job. Thus, to speak of self-help as a last-ditch strategy practiced only by the poor would be to seriously misunderstand the context in which it takes place.

The purpose of this thesis, then, is to explore the limits of self-help housing strategies as they are practiced in Lima, and to suggest some ways in which these limits might be "stretched" by policies that make self-help more accessible and more effective. To this end, Chapter One will present the housing problem in greater detail; Chapter Two will sketch the context from which Lima's current housing situation has evolved; and Chapter Three will advance some proposals for improving this situation.
CHAPTER ONE: THE SELF-HELP DEBATE

A large, clumsy, friendly, five-month-old shepherd puppy trots up to the small shack he shares with five people and pushes his nose against the door. Made of scrap wood and sheet metal, this door needs little encouragement; it slopes slightly inward, so that the puppy's gentle nudging makes it lurch open with a bang, causing a visitor inside to jump.

The shanty which the dog has just entered has been standing for two years, though the people who live there have been on the site for some five years longer than that. The construction is ingenious but rickety; it consists almost entirely of cardboard and galvanized iron. The cardboard is papered with powdered-milk sacks, using homemade flour-and-water paste, and sewn together with the string which once fastened these sacks shut. The roof is a hodgepodge of sticks, esteras, Eternit, burlap, and more sacks. Shawls and curtains serve as internal room dividers.

The family that shares this tenuous home consists of a husband and wife, their toddler-aged son, and two brothers of the husband. Though the latter works (among other things) arranging milk distribution for the district council, he has no steady employment, and the little that he earns from doing odd jobs does not allow for much home improvement. His wife Adela,\textsuperscript{10} asked whether she would prefer to live in a core-

\textsuperscript{10} Her name has been changed to protect her privacy.
housing project if one were available, replies that "of course" it would be nice to own a real home, "but I would have to go without eating to make the payments...I'm better off staying here in my little shack."

Like a large proportion of Lima's population, Adela is originally from another part of Peru. She came to the capital as a small child because her father, a barber, was very ill and needed an operation that could only be performed in Lima. Her parents were among the founders of the neighborhood where she now lives, just a few blocks away from her widowed mother in the pueblo joven of Pamplona Alta. She has rented space in more conventional homes in other parts of Lima, but when asked to compare, replies that "it's better to have a house of your own."

Adela and her family live on a plot with no infrastructure, so they are forced to rely on more fortunate neighbors for certain essential services. Electricity, for example, comes from a woman next door who charges them a monthly fee in exchange for an "unofficial" connection. For another fee the family is allowed to attach a hose to a neighbor's faucet, which provides their only access to running water. Yet even with these inconveniences, says Adela, she prefers her own home to a rented room.

The house was built through trial and error, improvisation, and "learning by doing." Construction was so gradual that Adela has no idea how much her family has spent on it.
They began with a single room and a dirt floor; as time went on, they added other rooms. Then they decided that the cold, damp packed earth underfoot was unhealthy, making them more susceptible to illness in the wintertime, so they created a better floor by mixing this sandy soil with cement. (Unfortunately the local sand is full of nitrates, which cause the cement to disintegrate -- as many self-help builders have discovered.) The roof of the house was once covered with sheets of plastic for waterproofing, but these proved too difficult to drain and were soon clawed to pieces by stray cats. The family responded by moving the plastic underneath the estera roof mats, where marauding animals cannot reach it and water pockets can be emptied just by poking them with sticks.

Thus Adela's family is able to adapt bit by bit, dealing with the most pressing problems as they arise and simply enduring the rest. For the present they have resigned themselves to this living situation. Someday, of course -- like all shanty residents -- they hope to own a real home.

* * *

This family and others like it are at the center of a long and bitter controversy concerning the feasibility of self-help housing strategies. On one side, there are those who claim that self-help has made shanty dwelling a temporary stage,
common among recent settlers but virtually nonexistent among the well-established. This conviction, whose best-known Peruvian advocate is the prolific Instituto de Libertad y Democracia (ILD), is represented in the graphic on the following page. It shows the ten-year evolution of an archetypical self-built home from one room of esteras to two stories of brick and mortar. In the ILD's view such evolution is not only common but practically automatic. "For those who want to imagine that the pueblos jóvenes are endless deserts spotted with esteras," it contends sardonically, "the reality is awfully disappointing...[T]oday barely 4% of the houses in the pueblos jóvenes are of esteras, adobe, or quincha," and these few "are on the way to becoming cement."11

This argument is somewhat different from the famous self-help theories of John Turner. Turner sees housing as a process rather than a product; hence his writings focus more on the social benefits of dweller control than on the physical quality of construction.  

11 Franco Giuffra et al., "Ladrillo a ladrillo: Viviendas tan macizas como lo mas noble," in Caretas, 2 September 1985, p. 50. "Quincha" is a type of traditional Peruvian construction using wood and bamboo frames filled with mud and straw.

NB: The 4% figure cited here is far from definitive; in fact, the most casual inspection of any pueblo joven would render it highly questionable. While I was unable to find any other recent studies of this question covering the whole city of Lima, the Villa El Salvador neighborhood census cited earlier lists 41% of Villa's 31,000 dwellings as estera or adobe.

Now by the ILD's own calculation there are approximately 377,000 dwellings in Lima's pueblos jóvenes and other "popular settlements" (Giuffra, op. cit.). Four percent of this figure -- the total number of shanties claimed by the ILD -- would be 15,080. But the above census counted 12,600 estera shacks in Villa alone! Clearly there is a major discrepancy here.
An artist's rendition of successful self-help construction over the course of a decade. This hypothetical family starts out with a shack of esteras (top left); after ten years they have a two-story brick home built to impressive specifications and ready for the addition of a third floor. Note that many real-life families are not this fortunate. (Uncredited drawing reprinted from ILD report in Caretas, 2 September 1985, p. 50.)
of its results. He likes self-help for the spiritual fulfillment it brings; the ILD people like self-help for its material effects, claiming that it succeeds in providing universal shelter and raising property values. But for both parties the conclusion is the same: Self-help construction is the solution and not the problem. Government must refrain from harassing squatters, denying them legal status, or attempting to monopolize control of low-income housing construction. Turner and the ILD may have different reasons for advocating self-help, but they both admire it greatly.

On the other side of the debate, there are those who condemn the above theories as mere apologies for government inaction in the housing sphere. Many of their critiques are laid out in a collection of essays edited by Peter Ward. The major arguments against self-help, Ward says in his introduction, are

that [it] allows labour to be exploited twice over -- first at work, second in the construction of the home; that it maintains the status quo and retards necessary structural change; that it underwrites low wages insofar as access to low-cost shelter reduces the wage level required for subsistence; that it is too optimistic and far from offering a 'freedom to build' as Turner and Fichter (1972) argue, it is the only alternative the poor have...; that its romanticism obscures the real suffering experienced and self-help becomes a blueprint for its continuance as governments adopt a laissez-faire policy; that it simply provides a short-term 'breathing space' and presents no long-term solution; that it rationalizes poverty.12

12 Ward, op. cit., p. 10.
However one may feel about the theoretical validity of these critiques, their practical validity is seriously flawed by their deliberate vagueness about policy implications. Ward underscores this when he stresses that one important goal of his book is "to demonstrate that 'tampering with the system' will not have dramatic effect."\(^{13}\) Does this mean that the majority of the authors reject out of hand the concept of incremental change? Are they trying to say that nothing short of revolution is worth working for? If so, how do they think a revolution ought to address the housing issue? In short, if they mean to throw out self-help, then what do they intend to replace it with?

The problem with this whole debate is that it has become obsessed with portraying self-help policies as either good or bad, liberating or exploitative. These value-loaded labels have no meaning unless they are discussed with respect to available alternatives. For example, if the Peruvian government and the private construction sector were capable of providing decent housing for every citizen, then it might make some sense to argue about whether people should have the right (or the obligation) to build their own homes. In fact, however, this is very far from likely, as a recent article in Lima's most respected newspaper makes clear. It estimates the housing deficit at 150,000 units in the capital alone -- a deficit expected to more than triple itself by 1991. These

\(^{13}\) Ward, \textit{op. cit.}, p. 13.
figures do not include the many existing substandard units in need of renovation or replacement, to say nothing of the deficiencies in urban infrastructure.

"According to the opinion of the authorities at City Hall," notes the article,

the housing problem in the capital has no solution under current conditions, and the State alone will not be able to confront it. "It is enough to keep in mind that just to confront the problem of Lima's growth to the year 1991 will demand an investment of more than a third of the foreign debt," they said. On the other hand, private investment in housing construction has diminished abruptly in recent years...[P]rivate investment in single-family homes dropped 80% between 1975 and 1982, [while for multifamily homes it dropped] 14%.14

When the housing deficit is so overwhelming that some form of self-help is obviously essential to adequate shelter provision, the important question is not whether to applaud or deplore it but how to assist it. This is the focus of the present paper.

It will not be argued here that self-help works for everyone, or even necessarily for the majority. Many families like Adela's have been left behind in the popular rush for home improvement, usually due to the lack of a steady income. But precisely for that reason -- and for want of a viable alternative -- policymakers must find ways to extend the current limitations of self-help housing strategies. In Lima, these strategies already work for many people; the challenge is to see if they can be made to work for more.

CHAPTER TWO: HOW SELF-HELP WORKS IN LIMA

On the surface, Lima's housing problems may seem similar to those faced by many Third World cities. The massive rural-to-urban migration, the pressure on existing housing mechanisms and infrastructure, the invasions of vacant land by aspiring homesteaders, the persistence of drastically substandard housing in spite of all efforts to improve it -- all are familiar from Bogotá to Calcutta. But in each city where these symptoms are found, they are at least partially the product of circumstances unique to that particular place and that historical moment. Thus, before launching into an exploration of how Lima's self-help housing process can be improved, it is only logical to begin with a closer examination of how it works now. This chapter will attempt to put the story of Adela's family into perspective by explaining some of the social, political, and economic conditions under which the pueblos jóvenes have developed.

Aspiring homesteaders may create a pueblo joven by invading a site en masse, under cover of darkness; by obtaining government permission to occupy a vacant area; by drifting gradually onto undefended land; or by some combination of these. For example, Villa El Salvador, the largest pueblo joven in Peru, began with a land invasion by twenty-five to thirty thousand people in 1971. After several violent confrontations with police, the invaders agreed to move to
another site where the government (for lack of a better alternative) had offered them permission to settle. Today, thanks in part to the gradual arrival of newcomers, the population of Villa has soared to over 200,000. Thus all three modes of settlement have played important roles in the development of this neighborhood.

When a large invasion is contemplated, its planning generally starts well in advance. The invasion leaders select a promising tract of land, draw up a site plan, fix a target date, and recruit participants. On the designated night, pobladors gather by candlelight and collectively take over the area, each family erecting its own esteras on its assigned lot. This "first phase" is completed in a matter of hours, and is as much an act of claim-staking as of shelter provision. Before sunrise the entire area is a forest of huts, filled with men, women, children, and fluttering Peruvian flags. By the time it is discovered it is no longer a mere invasion, but a virtual neighborhood. Even the pobladors themselves speak with wonder of this overnight transformation.

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15 While the last official count was 168,077 residents in 1984, the new shacks which have since cropped up throughout vacant areas of Villa seem clear evidence of substantial population growth. This impression was supported by conversations with the Executive Secretary General of Villa El Salvador, who estimated the number of Villa residents at nearly 300,000 in September 1986 (though this figure is probably on the high side).

16 This account was gathered partly from my own interviews with pobladors and partly from rather brief, vague descriptions in various books and articles. While there is no end of commentary on the public aspects of land invasions, the
Once possession has been established, by invasion or otherwise, the next step is to make the initial shelters as livable as possible while preparing to build permanent homes. Often these shelters consist of nothing more than a single estera mat bent into the shape of a tiny Quonset hut. By adding wooden frames, more esteras, newspaper insulation, Eternit roofing, cement floors, and other amenities as it can afford them, each family slowly develops its one-mat crawl space into something relatively fit for human habitation. Even with substantial improvements, however, this dwelling is almost always referred to as a "choza" (shack); the word "casa" (house) is reserved for a structure of brick,\(^{17}\) which is sometimes called "material noble." (I do not know whether "noble" is used here in the general sense of "grand and stately," or in the chemist's sense of "non-decomposing," but in either case it is an interesting way to describe bricks.)

\(^{17}\) Several pobladors I interviewed actually misunderstood me or became confused when I tried to use the word "casa" in reference to an estera structure.
It is important to note that the choza is intended to serve merely as a provisional shelter while the family marshals its resources to build a brick house around or beside it. If the family has money, and/or relatives who are builders, this transformation may take as little as a year or two. Usually, however, it takes far longer, proceeding in fits and starts according to the family's financial situation. The 1984 census of Villa El Salvador revealed that 49% of all lots there were still occupied by shacks and 96% of all dwellings were still under construction, even though 73% of the lots had been settled for eleven years or more.18

Should anyone question the extent to which the chozas are regarded as "provisional" by those who live in them, they need only note the piles of bricks, rocks, sand, and other building materials found in backyards throughout the pueblos jóvenes. Since inflation has made saving money impractical, Peruvians have learned to invest it. Even many families that must struggle to meet their daily expenses can be seen carefully hoarding bricks in anticipation of the distant day when they hope to have enough to build something. The expectation of upward mobility, at least in housing, is clearly very strong.

While individual pobladors work on improving their own properties, settlement leaders concentrate on improving the community through the long process of petitioning the government utility companies for infrastructure. In the

meantime, water is generally bought in cylinders from delivery trucks; candles or lanterns are used for light, and waste disposal is simply improvised. Later, if the pobladors become impatient, they may stage a collective march on the utility offices to demand faster service.

Perhaps the most striking aspect of this whole urban homesteading process is the tremendous level of socio-political organization it reflects. In contrast to the hapless and fragmented tenement dwellers of Lima’s older neighborhoods, pobladors tend to be independent, highly mobilized, and self-directed. Each square block of a typical pueblo joven has its own general coordinator and a virtual cabinet of officers. This includes secretaries of economy, health, organization, social welfare, records and archives, press and propaganda, sports and culture, and subsidized children’s breakfasts. Each "sector" -- a unit composed of many square blocks -- has a corresponding set of officers. Finally, there is a third set for the entire pueblo joven.19 The most extreme case, Villa El Salvador, is actually a "Self-Managing Urban Community" -- practically an independent city.

To some extent, these spectacularly intricate political structures are probably the legacy of a government effort to reorganize the pueblos jóvenes during the 1970’s. Yet they

19 From interviews with various officers of the women’s council of Sector Leoncio Prado (P.J. Pamplona Alta), and with the Secretary General of Sector Micaela Bastidas (P.J. Inca Pachacútec).
possess a streak of independence which is entirely proper to the pobladors themselves. Such political sophistication and social cohesion are undoubtedly nourished by the shared experience of founding a neighborhood; this is "housing as a verb" in its strongest sense. At the same time, however, pobladors are a self-selected group of people that may well be predisposed toward enterprise and collective action. The very act of land invasion requires a high degree of initiative and solidarity, and therefore is more likely to attract those who possess these qualities.

In any case, the significance of the above facts for would-be designers of housing policy can hardly be overestimated. No policy which proposes to affect the pueblos jóvenes in any way can afford to ignore the impact of their powerful internal dynamics. Pobladors will not easily accept the imposition of an outside agenda. They are not deceived by people who try to tell them what they need under the guise of asking them. They have, in fact, displayed an astute grasp of the difference between genuine assistance and subtle manipulation. These factors should be carefully considered by any agency (or government) attempting to set up its own housing program.

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20 The most clear-cut example of all this is probably the pobladors' rejection of SINAMOS, the now-defunct government agency formed to "support social mobilization" in the 1970's. Unfortunately SINAMOS is too large a can of worms to open here; interested readers are referred to Henry A. Dietz, Poverty and Problem-Solving under Military Rule (Austin: Univ. of Texas, 1980).
Lima is a city of some 4.7 million people sprawled out over more than 108,000 acres of land and growing at a rate of three to four percent per year.\(^{21}\) Without the housing opportunities made possible by the existence of the pueblos jóvenes, much of this growth would probably be impossible. As it is, about 47% of the city's population lives in these settlements, while only 7% inhabit the rented tenements near the city center.\(^{22}\) The rapidity of Lima's growth, and the rising importance of the pueblos jóvenes, can be seen clearly in the table on the following page:\(^{23}\)

\(^{21}\) ILD statistics from "PP.JJ. son la salida para muchos," El Comercio, 6 August 1986. The population figures are estimates based on 1981 census results.


\(^{23}\) The first two rows of this table were adapted from Collier, op. cit., p. 144. The data in the last row are from the El Comercio articles cited above (6-7 August 1986). Time intervals are slightly uneven because data are not available for every year. The term "settlements" as used here is roughly synonymous with "pueblos jóvenes"; the latter expression was not coined until the mid-1960's and so was omitted here to avoid anachronism.
THE GROWTH OF LIMA AND ITS SETTLEMENTS (Selected Years)

<table>
<thead>
<tr>
<th>YEAR</th>
<th>TOTAL (MetroLima)</th>
<th>SETTLEMENTS ONLY</th>
<th>SETTLEMENTS/ TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>1940</td>
<td>520,528</td>
<td>&lt; 5,000</td>
<td>&lt; 1 %</td>
</tr>
<tr>
<td>1961</td>
<td>1,578,298</td>
<td>318,262</td>
<td>20 %</td>
</tr>
<tr>
<td>1986 est.</td>
<td>4,700,000</td>
<td>2,209,000</td>
<td>47 %</td>
</tr>
</tbody>
</table>

Predictably, in spite of the new sites opened up by the pueblos jóvenes, the urban population explosion shown above has produced a serious housing crisis. (By comparing the number of families in Lima to the number of dwellings, the ILD calculated the 150,000-unit deficit mentioned earlier.24) This crisis is likely to become still worse in the next few years, especially if the government follows through on its plan to build an electric train line across the length and breadth of the city. Not only will the construction of the elevated tracks provide an estimated 15,000 jobs -- sure to draw migrants from the countryside -- but the train itself will make Lima's outlying areas much more accessible, providing added incentive for new land invasions. At the same time, however, the government has sworn to take a hard line against such invasions, thus increasing the tension between itself and thousands of would-be pobladores.

One important reason for Lima's growth is its staggering degree of predominance over the other "urban magnets" that might compete with it for migrants. In addition to being the national capital, Lima is incomparably large -- actually ten times the size of Peru's next largest city, Arequipa. All important business, both public and private, is focused around Lima. Thus job opportunities are believed to be better there, and the promise of employment may create the city's strongest draw of all.

As a result of this overwhelming dominance, Lima and its neighboring port, Callao, seem to possess more than their share of virtually everything. They include some 30% of Peru's population, 38% of its teachers, and 73% of its doctors. Moreover, while the Lima-Callao area has "only" 29% of Peru's dwelling units, it contains more than half of those supplied with running water and electricity.25 In fact, there is so much truth to the well-known observation "Peru is Lima" that a visitor who went to the capital to find out why its inmigration rate was so high might well go away surprised that it wasn't even higher.

It is easy to see the problems these figures reflect for Peru as a whole. But they have a bleak side for Lima as well. The pressures of a growing population on a fixed tract of land have forced some people to take up residence on the precarious-

ly steep hillsides at the edges of the city. Transportation has become ever more costly and time-consuming. Public utility companies cannot keep up with the demand for infrastructure. Lima is attracting more people than it can reasonably be expected to hold.

Clearly a problem of this magnitude cannot be solved just by building more houses. No housing crisis can be remedied under conditions of uncontrolled urban growth. In fact, the most alarming thing about the 150,000-unit deficit mentioned above is not the figure itself, but the fact that it is expected to triple in only five years.

For this reason it is important that any major housing program intended for the city of Lima be conceived and carried out in the context of a large-scale decentralization effort. The government of Peru recently announced a major initiative in this respect,26 but much remains to be done.

* * * * *

Getting back to the subject of self-help construction, it is clear that the biggest obstacle faced by unsuccessful self-builders is the lack of a steady income. The Peruvian Banco de Materiales was established to lend building materials to low-income landholders, and seems to be quite successful at meeting

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the needs of those who can afford to take out loans. But pobladores without a dependable stream of income have no assurance that they will be able to pay the loan back; hence, like Adela at the beginning of this paper, they are reluctant to make any financial commitments. In fact, many pobladores, when asked why they left conventional rented quarters in established parts of Lima to move to a new site with no water or electricity, cite precisely their desire to be free from the pressure of impossible monthly payments.

It would seem, then, that loans are not the answer for the poorest of the poor. To them, credit can be as much a burden as a benefit. The following chapter will therefore examine some alternative approaches.
CHAPTER THREE: WHAT IS TO BE DONE?

The master builder’s face is furrowed with concentration as he studies his level. Coaxing the hills and valleys out of a building site is a painstaking job -- especially when done by hand -- but this man has been doing it for thirty-two years and he knows his work. This time the level, balanced on a beam set on edge in the earth, does not read as he would like it to; he frowns and sets the tool aside.

Several more wheelbarrows full of dirt will travel back and forth before the builder is satisfied that this plot is level from east to west. Then bricks will be set at strategic points so that other beams, perpendicular to the first one, can be laid on top of these to yield the north-south measurements. Two workers with shovels take dirt from the high spots, load it into a wheelbarrow, cart it to the low spots and dump it. Then it is smoothed over and another reading is taken. Dig, cart, dump, smooth, measure, dig. The morning wears on. A helper wanders off -- "to have breakfast," he says -- and someone else comes by to replace him. Dig, cart, dump, smooth, measure, dig...over and over until the builder is satisfied. "In the United States they must have fancier ways to level land," he says, "but here we do it like this."

Though such work goes on all the time in Lima’s pueblos jóvenes, the nature of this job in Villa María district might be surprising to an outsider. For one thing, the site in
question has not been claimed by any individual family. For another, none of the workers are being paid. In fact, it is Sunday -- the traditional day for communal labor in Peru -- and what these men are breaking ground for is a neighborhood day-care center.

* * *

Not far away, in Villa El Salvador, another group of volunteers is working on a similar project. They tamp down their land, pour a concrete floor slab, and in only a few weeks of part-time work have raised a small building framed with wood and covered with esteras. Though the construction is simple, the building is sturdy and well-crafted. Improvising on the plans they received from a local architect, this crew has increased the roof height to give the place a pleasant light and airy feeling. The architect, who had not anticipated the change, is agreeably surprised.

Soon the estera mats will be coated with concrete as part of an innovative plan to prolong their life expectancy. The roof, made from poles and mats covered with an experimental mixture of cement and coarse sand, will be cheaper than the usual Eternit roof and, if all goes well, just as dry. When completed, the building will be turned over to the community to meet some of its most urgent needs -- among them, a first-aid station.
The above volunteers and others like them are part of a new project called "Marcahuasi," conceived and run by Arq. César Díaz González of the Universidad Femenina del Sagrado Corazón. The purpose of this private endeavor is to provide free technical assistance to low-income self-builders, helping them to achieve higher standards of shelter at the lowest possible price.

Though other forms of aid (such as materials loans) are available to pobladores, Project Marcahuasi is unusual -- perhaps unique in Peru -- because it offers on-site technical advice and supervision without bureaucracy, red tape, and long trips to downtown Lima. Díaz operates a tiny office right in the midst of his target area, in the district of Villa María del Triunfo. Built to the same specifications as the dwellings he is helping to construct, this wood/cane/concrete structure doubles as a model home. Thus, when pobladores visit the office to examine the plans for their own future homes, they can see the finished product all around them.

Marcahuasi, which began operations in September 1986 after many years of planning, matches architecture students from the

27 The name "Marcahuasi" comes from the Quechua (Inca) words meaning "house of the people." The project is operated as a mandatory practicum for advanced architecture students at the Universidad Femenina. It was initially funded by a donation from a local business, though plans for future funding were still uncertain as of October 1986.
Universidad Femenina with groups of pobladors in need of technical support. After completion of twenty to thirty initial units, to be used mainly as community centers, it will move to the construction of affordable medium-run private homes, priced to be accessible to even the poorest of the poor (at about US $5.75 a month). Ultimately Diaz hopes to extend this aid program to the construction of low-cost permanent homes as well. Though it is still too early to assess the results of this effort with any certainty, its chances for success appear to be high because it directly addresses the pobladors' needs without imposing an oppressive bureaucratic structure as a price for assistance.

Small direct-aid programs like this one are one way of responding to Lima’s current housing problems. Small projects have the advantage of being more responsive and flexible. Their disadvantage, of course, is that the number of beneficiaries they generate is correspondingly small. Project Marcahuasi has some potential to grow, but its growth can only be proportional to the number of student volunteers it is able to muster. Thus other methods are needed, methods that will reach more people. The following suggestions are hereby offered for discussion, with examples where possible:

[1] **An inexpensive but durable material could be developed to replace esteras.** These not only wear out quickly, but provide little protection from cold and drafts. They can
also attract biting insects, particularly when covered with flour-and-water wallpaper paste.

One potential solution was explored some years ago by Monsanto Corporation. In a USAID-sponsored research project, Monsanto scientists developed a low-cost building alternative from sugar-cane bagasse (a by-product of the sugar industry). When combined with rubber, fillers, and vulcanizers, or when shredded and bonded with resin, the bagasse could be pressure-molded into flat or corrugated panels suitable for use in housing construction. These panels could also be covered with aluminum for added strength and durability.\footnote{Volker Hartkopf, \textit{Técnicas de construcción autóctonas del Perú} (Washington DC: USAID, 1985), pp. 155 and 166.}

Though the bagasse panels were developed as roofing materials, it seems likely that they could also serve as walls. However, to the best of my knowledge, they are not currently available in Lima.

\footnote{Alternatively, esteras could be treated with some protective substance in order to improve their insulation capacity and extend their lifespan. Concrete is one possibility, as noted above; there may be others as well.}

\footnote{Greater efficiency in the production of permanent building materials could bring their costs down, thus creating
savings which could be passed on to consumers (through price controls if necessary). For instance, a Peruvian cement company recently announced that it plans to cut its costs in half simply by using coal for fuel instead of oil. Incredibly, oil is so expensive in Peru that it represents 85% of the variable cost of producing cement.29

[4] **Research and development could lead to better and cheaper permanent-construction technologies.** The Banco de Materiales is now offering a new lightweight concrete roof which is 40% cheaper than the traditional kind, and much easier to assemble. This will allow dwellers to build the roof themselves instead of having to hire skilled workers to do it for them.30

Arq. José Graña Miró Quesada, who helped to organize the Bank, has argued that as a major buyer of building materials it has the power to press suppliers for standardization and technological improvements that will help to bring down the cost of construction.31 If this is true, it could represent an important opportunity to turn private-sector efforts to public benefit.

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29 "Reducirán en 50% el costo del cemento," El Comercio, 1 October 1986.

30 "Un nuevo techo aligerado ofrece Banco de Materiales," El Comercio, 10 September 1986.

Grass-roots innovation could cut costs in unexpected ways. A group of pobladors in Villa El Salvador discovered that, due to the high cost of bricks, they could actually save money by making their own bricks out of cement. The process, though labor intensive, was elegantly simple; they just mixed the cement in a hole in the ground, shoveled it into a mold, then removed the mold and let it dry.

A radio consulting service could be set up to offer free advice on all aspects of construction. This is an idea I first heard from César Díaz. Self-help builders could send their questions to the consultant, who would then answer them over the air. This idea seems extremely practical, since radios are common in the pueblos jóvenes and Villa El Salvador even has its own station, which is dedicated to spreading information important to pobladors.

Price controls could be established for building materials. This was tried last year, apparently on a private-public cooperation basis, with some success.²² It was done only for cement, but could also be extended to other materials. (Price controls on staple foods are now common in Peru, so the idea would not be a radical one.)

Various neighborhoods could arrange to barter naturally-occurring construction materials. This is another idea from César Díaz. Sand, pebbles, and large rocks -- all suitable for construction -- are found naturally throughout many parts of Lima. Though they can be had for the taking, many neighborhoods have an oversupply of one material and a shortage of the others. If pobladores from different areas had the opportunity to arrange for trades, they could all save a good deal of money.

This idea would require transportation and at least an informal clearinghouse, but otherwise it is extremely practical. The Marcahuasi staff, which has already brokered some exchanges of this type, might be able to provide the clearinghouse; perhaps the city or district governments would be willing to provide the trucks.

New houses could be systematically joined together to cut the costs of wall construction. Many pobladores, taking advantage of the obvious fact that a wall has two sides, use the outside of their neighbor's home as the inside of their own. That is, if their neighbor has a brick house and they do not, they back their shanty up against his wall so that it becomes their wall too.

While this practice seems harmless enough, it is technically illegal and sometimes leads to disputes. If the process of double-use could be regularized, however,
it could greatly reduce the cost of a permanent home by
decreasing the number of walls which need to be built
(though perhaps the common wall would have to be somewhat
stronger in order to support the weight of both roofs).
Where coordination and simultaneous construction were
possible, two neighboring families could even share the
cost of a common wall and thus cut expenses for both.

[10] "Buyers' groups" could be organized to purchase larger
quantities of building supplies at lower prices. This
arrangement would be particularly useful in the case of
bricks. These can be bought cheap direct from the
factory, but factories sell only in large quantities.
Most pobladors can afford just a few bricks at a time and
have no means to get them home; hence their only
alternative is to buy from informal-sector middlemen with
trucks. Unfortunately many of these truckers are less
than honest; they bully or deceive a customer into paying
for more bricks than they actually deliver, then change
their location and/or license plates before he can
register a complaint.33

If self-help builders got together and coordinated
their efforts, they could rent a truck, drive out to a

33 This problem came up in interviews with pobladors from
Pamplona Alta; it was confirmed by other sources, including the
following newspaper article: "Estafan a compradores de materia-
brick factory, buy their bricks cheap, and bring them home by themselves. This way they could eliminate the middle-men and avoid getting cheated. Perhaps local governments could even subsidize such a scheme by renting out their own trucks at minimal cost.

These are just some of the ways in which pobladores could be helped to build and improve their own homes. The benefits attained would of course be incremental, but they could still be very real. The point here is not to deny the obstacles that impoverished self-help builders are sure to encounter, but rather to confront those obstacles more effectively.
CONCLUSION: REFLECTIONS AND RECOMMENDATIONS

This thesis has described some of the ways in which self-help is currently practiced by the pobladores of Lima. It has tried to convey a sense of the social and political context in which their activities are taking place. Finally, it has suggested some ways in which their self-help efforts could effectively be aided. The purpose of the present chapter is to extract from these specific observations a few general themes which might be worth considering in the formation of future self-help assistance programs.

The city of Lima presents many opportunities to the very low-income family seeking improvement in its housing situation. The millions of people who have been lucky enough to take part in successful land occupations have become de facto landowners at little or no cost; since the pueblo joven tenure law of 1986, 34 most of them are now de jure owners as well. Lima's mild, almost rainless weather and cheap, plentiful esteras reduce the cost of minimal shelter to practically nothing. And for those who can afford it, the Banco de Materiales offers loans to help turn minimal shelters into genuine houses.

On the other hand, there are also many limitations. The vast sandy plains on which so many pobladores live cannot provide the soil essential for traditional forms of low-cost construction. Esteras may be cheap, but they are plainly

34 That is, Law 24513 of 3 June 1986.
inferior to adobe or quincha in terms of insulation, stability, and life expectancy. Also, the land available for new settlements no longer seems inexhaustible; urban sprawl has propelled many people to the most distant reaches of the city, far from job sources and other necessities. Some, desperate, have braved hardship and physical risks to take up residence on precarious hillsides, only to be refused titles because of their dangerous location. Moreover, future land invaders can expect to face strong resistance from the government, which has sworn to pull up the gangplank and stop the city’s uncontrolled growth.

The previous chapter offered a number of suggestions for helping pobladores to confront some of the less formidable limitations of self-help housing strategies. If these suggestions and others like them are to be implemented with any degree of success, several key ideas must be kept in mind:

First, the implementing agency (whether public or private) must respect the intelligence, experience, and autonomy of the pobladores. As obvious as this may seem, it is a principle which has often been ignored -- and not only in Peru. Any plan which presumes to understand people’s needs better than they do is predestined to fail.

Second, there is a serious need for both new technology and creative use of existing technology. It is my belief that the process of research and development could be facilitated by increasing the opportunities for interaction between pobladores
and professionals (architects, civil engineers, etc.). This would give the poblados a better chance to gain the benefits of technical expertise, and the professionals a better chance to understand the real nature of Lima’s urban problems -- a necessary if not sufficient condition for solving them.

One way to facilitate this type of interaction would be to institute a mandatory practicum for advanced students of the ecological professions. In other words, during their last year of school, these students would be required to enroll in a course involving actual practice in the pueblos jóvenes. This is precisely what César Díaz has done at the Universidad Femenina, and there is no doubt that it has brought budding architects to neighborhoods where they would never otherwise have set foot. For the students, this course provides an education they could never get in the classroom; for the pobladores, it provides a free consulting service. Why not extend the same idea to other schools?

Finally, aid programs for self-help builders should focus not only on lowering the cost of permanent dwellings, but on improving the quality of provisional dwellings. These "temporary" shacks may be home to some families for ten years or more, in spite of all efforts to provide them with something better. Thus it is important to find ways of building better shacks -- as the Marcahuasi project is doing -- shacks that will provide more substantial shelter and last as long the inhabitants need them. The construction of "working models"
and the provision of technical assistance to pobladores are essential in this respect.

One of the saddest sights in any pueblo joven is a decrepit-looking shanty with a pile of expensive bricks sitting uselessly beside it. The money has been spent, the bricks are paid for, but they can provide no benefit until there are enough of them to build a whole house. If a technology could be developed which allowed people to enjoy the benefit of their investment as soon as they made it, it would not only end this kind of waste but would greatly stimulate home improvement. For example, a durable weatherproof panel designed to replace estera could be nailed onto the same wooden frame the estera came from, thus making it possible to improve a shack one wall at a time. If necessary, a family could sell its old esteras to help pay for the new panels, thus getting an immediate and substantial return on a minimal investment. Later on they could even sell the panels to help pay for bricks.

Respect for local autonomy, increased dweller-professional interaction, more affordable houses, and better quality shacks -- these are some ideas on which to base the design of a successful self-help assistance program.
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Sara Siff attended Harvard College, where in 1984 she received an A.B. in Social Studies and a Certificate of Latin American Studies. She has also attended the Universidad de los Andes in Bogotá (Colombia), and several institutions in Mexico and Peru.

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