LOW INCOME HOUSING DEVELOPMENT IN BOGOTA

by Stephen O. Bender

I. INTRODUCTION

Patrick Geddes wrote in 1918, "I have to remind all concerned: 1) that the essential need of a house and family is *room*, and 2) that the essential improvement of a house and family is *more room*."[1] While written for another place, the statement is still timely if we are to examine in some detail the growth and development of low income settlements in Latin American urban settings. The traditional analysis of the growth of such settlements, usually in sociopolitical and economic terms, has left us with an array of classifications by which to understand one of the most significant occurrences in the history of man's urbanization. Such analysis has allowed us to describe in some detail the extent to which low income families, often migrant in origin, have sought to resolve their housing needs outside accepted norms, and to scrutinize the efforts of the public sector to aid in (if not to control) the housing of these poor. The preceding type of analysis has brought into focus the dissimilarities between housing built and maintained by its inhabitants and housing provided through government intervention.

Critical to the understanding of settlements, however, is an analysis of the commonalities of low income housing development and, more specifically, the physical characteristics which over time make settlements of various legal origins indistinguishable from one another. "That the mass of people demand no more than they can economically support is the existence of the squatter settlement"[2] is not only applicable to clandestine developments, but also appropriate to all low income housing development. Low income families continually match available resources with existing needs and over a period of time change simple shelters into a community with a full complement of services.

The role this housing development plays and some of the economic opportunities it presents are examined in this paper. In summary, traditional views of squatter settlement development, those built outside of accepted

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legal parameters, have been seen as blighted areas that must be removed and replaced by institutional means, and later, as homogeneous settlements marginal to the rapid growth of urban areas, but significant in their internal organization, spontaneous creation and development, and potential impact on the city's economic and political life. Only recently has the importance of squatter settlements been identified—that of viable, adaptive physical environments which allow their occupants to participate in and benefit from development.

Moreover, the growth and change which takes place in these settlements, transforming aggregations of dwelling units (however rudimentary in nature) into a mature urban community with a full range of public and private services, is duplicated in government-sponsored settlements for similar income groups. This evolution is brought about by investment and construction under the control of the dwellers themselves. Their housing costs are kept as low as possible and real economic gains are made from the provision of housing and commercial services to the settlements' inhabitants, facts which affect income distribution.

The phenomenon as it occurs in Bogotá, Colombia, is influenced by the availability of land, construction materials, and key public services, and by the decision of the settlement dwellers to exercise control over the creation and/or maintenance of their physical environment. All of these are dynamic factors whose modification could bring about reduction or cessation of settlement development.

Section II of the paper deals with squatter settlements and their role as traditionally understood in resolving urban housing and development issues. The dynamics of these settlements are explored to better understand the settlements' participation in the low income housing sector. Section III discusses housing and community, describing how low income settlements, regardless of origin, take part in common development processes. In Section IV, some specific characteristics of low income family settlements and sources of income that are derived from investment in building space are examined. Finally, in Section V, some summary observations are made concerning the future development of these settlements.

II. SQUATTER SETTLEMENTS IN AN URBAN GROWTH AND CHANGE CONTEXT

Squatter settlements have been the dominant force in shaping the large urbanized areas in Latin America. Their formation and growth have brought into focus the problems of rapid in-migration of peasants from rural and semi-rural areas. Housing becomes the immediate and most pressing need of these migrants, a need which they are both able and accustomed to provide for themselves.

The formation of such settlements on the edges of urban areas has traditionally been seen in varying ways. These views have developed out of the

realization by governments, planners, and academicians that tremendous growth was taking place in urban areas after the Second World War. The post-war era produced a development boom in most Latin American countries. Urban places expanded as the countries began to industrialize. Rising urban incomes brought about a rapid in-migration to urban areas—ports, industrialized agricultural and mineral extraction centers—of rural peasants seeking employment, education, health care, and the other services urbanized areas could offer. Colonial towns became cities and colonial cities grew rapidly, their character changing from a meeting place between a primarily agricultural-based society and its produce exchange for imported consumer goods, to one of a center for the production and consumption of goods.

The inner core of the expanding urban areas had been developed during colonial times as residential centers by and for those who controlled both the agricultural production and the commercial arenas. Imported advances in transportation and communication, and massive public works projects now allowed those inhabitants to establish residential enclaves on the perimeter of the urban areas, leaving the colonial cores as their business centers. The vacated colonial dwellings were quickly converted into dense low cost rental units and were rapidly occupied by the peasant influx.

This housing stock being consumed, the migrants were then forced to seek housing solutions through other means. Housing institutions, both the private and the newly established public agencies that supplied dwelling units to the middle and upper economic classes, did not respond adequately to the needs of the lower economic class. Alternatives had to be sought outside the existing social, legal, and physical order, generally taking the form of provisional shelters, rudimentary in nature, illegally built on publicly or privately held land in a clandestine manner by migrant families acting individually or in large groups, often numbering in the thousands. Land could also be attained from private entrepreneurs who, capable of withstanding social and political pressure, would sell parcels illegally.[3] These areas grew quickly as cities doubled in size every twenty years, with low income families approaching 50% of the urban population.

Seen on the one hand, the growth of *invasion* and "illegal" housing settlements was condoned, perhaps even secretly supported, by governmental agencies and political parties if only to gain the political support of the migrants, silence their demand for housing, and avert facing the major problems of urban development directly.[4] This was accompanied by official political and professional positions declaring such settlements as festering sores—rings of poverty, filth, and political radicalism that encircled and threatened the peaceful and orderly social, economic, and physical operation of cities. Settlements were decried as illegal, unplanned, dangerous growths that blighted the environment and whose only solution was eradication.[5] At

the same time national and international development interests recognized the potential promise and danger of a rapidly urbanizing Latin America and sought to create standards and master plans to guide and control growth and development.[6]

During the 1960s, the study of the origins and organizations of these settlements began. It became apparent that while their development was outside the framework of traditional, overt powers and controls, the settlements had mass political potential and (in and among themselves) possessed a high degree of planning and organization. The view of squatter settlements changed to one of marginality—a group of homogeneous developments characterized by illegal land tenure and owner-built housing, with a migrant base, but necessarily outside the mainstream of urban life. Studies emphasized the internal organization of the settlements and their roles in the urbanization of peasants as the last step of the rural to urban, colonial core to fringe settlement migration pattern.[7] It was recognized that the settlement dweller's objective in coming to the city to seek opportunities was fulfilled to the greatest extent through acquisition of housing. The social and physical redeeming graces of squatter settlements and their part in providing housing were explained.

The "festering sore" view of squatter settlement development demanded overt control of urban growth by traditional means, assuming that settlements could be forcefully removed and replaced by institutionalized housing solutions. The "marginality" view suggested that the settlement phenomenon was separate from its larger urban context, particularly physically, and established a characterization of homogeneous micro-organizations residual to urban growth as a whole. Neither view is adequate.

Squatter settlements are diverse in their characteristics. Their formation takes place in a variety of patterns that respond to social and political organization, leadership availability, economic status, and ability to operate effectively in the larger urban environment. Migration may take place directly to the settlement from rural or semi-rural areas without participation in the inner city urbanization process.[8] Although their adult population is still predominantly migrant, squatter settlement population will soon be composed largely of first generation urban dwellers.

Land tenure is more complex than was originally presumed. Invasions and illegal formation of settlements form the basic land acquisition methods, later complemented by organized, complex systems of buying, selling, and renting land parcels. The development potential of squatter settlements, which give an opportunity for capital formation through land acquisition and building, not only has been recognized by the dwellers themselves, but also has been discovered by the more traditional and institutional land development interests, who have sought entrance into the market.[9]

Self-help housing (*autoconstruccion*), the term usually applied to owner-built dwelling units, has generally characterized the housing development, but there is a growing occurrence of owner-contracted housing, built by a variety of subcontractors for fees or in-kind services by the owner. The volume of such construction approaches conventional housing construction in quantity and represents a substantial part of total consumption of construction materials.[10]

Most importantly, squatter settlements have shaped the urban areas. Their development responds to locational factors in much the same fashion as other sectors of the private housing market. Because of their magnitude, they have dramatically altered the growth patterns of many cities, forming away from and beyond the existing infrastructure of the city, thus dictating where future transportation and other services must be located. Substantially altering master plans, their growth demands a review of existing construction standards, zoning and building ordinances, and housing policies and programs. Squatter settlements are the most dynamic, adaptive physical environment in the urban setting, reflecting a determination and ability to grow and change.[11]

III. HOUSING: SHELTER AND COMMUNITY

Much of the study of squatter settlements stems from the view that these communities have one function to perform—that of shelter. Their formation and development are seen as evolving from fulfillment of this need.

Squatter settlements certainly have as their basis the provision of shelter. Because of the inability of settlement dwellers to gain substantial control over the provision for other needs they possess—employment, education, health services, transportation, clothing, food—they find shelter the only necessity of their daily lives over which they can exact overt control. Whether inside or outside the existing social, economic, and political standards, shelter is obtained.

Governments and institutions, in the face of rapidly increasing urban population, seek to provide housing alternatives for low income families. The objective is to house as many families as economically and efficiently as possible. Minimum space standards become maximum accommodations. The production of dwelling units (shelter) through a variety of projects—self help, sweat equity (investment in housing through manual labor), sites and services, core units, etc.—often becomes the short, medium, and long-range goals of the housing programs.

At the outset, then, squatter settlements and public sector housing begin at the same level: shelter. And just as shelter reflects only one need, aggregations of housing units at their inception represent only the static beginning

to a dynamic process of creating a community. Growth and change occurs. Communities mature; commercial uses are immediately introduced; infrastructure elements are upgraded or established if not already present. A transformation takes place which allows for integration into the larger urban context.

The growth and change which takes place in the settlements provides for security of ownership, protection from the elements, investment in housing as formation of capital, supplementing family income with home-based business, and the need to establish and identify the dwelling as a personal possession.[12]

For Bogotá, it would appear that the issue should not be the share of production of low income housing the public and private sectors must assume, but whether these sectors will be able to continue to deliver the opportunity for evolutionary development of housing at the same rate that it has been delivered in the past. *Autoconstruccion* (self-built housing through private sector initiative and government housing programs) has accounted for approximately 50% of the housing unit starts in Bogotá in recent years.[13] These settlements have been instrumental in providing shelter to low income families, as well as opportunities for formation of capital, immediate utilization of available disposable income, reduction of housing costs, and sources of income through renting or creation of non-residential uses.

There are advantages, however, to the government's taking a more dominant role in the development of urban areas, particularly with regard to the development of low income housing. Because of the explosion of squatter settlement development over the last three decades, the ability of the government in most cases to determine growth patterns has been minimal. The principal advantages of planning for further growth, however, do not lie so much in the more efficient development of the dwelling unit itself,[14] as in the guiding of the growth of the city as a whole and, most importantly, in the adequate provision of necessary transportation, utilities, health, education, and social services.

IV. INCOME AND LOW INCOME HOUSING DEVELOPMENT

Because the preponderance of low income families find housing solutions through self-contracted, self-help means in the *invasion, pirata,* and government sectors of the housing market, it is necessary to examine the income characteristics of those families and the importance the dwelling unit as a source of income. DANE estimates that 50% of all Bogotá households earn less than 2,500 pesos (1970) per month.[15] Family income categories are distributed across the housing submarket groups as shown in table 1.

TABLE I

FAMILY INCOME BY HOUSING SUBMARKETS, BOGOTÁ

Income/month (1970 pesos)	*Invasion*	*Pirata*	Government	Commercial	Total units	Percentage
0-500	653	9,392	1,930	21,530	33,505	7.4
501-1250	2,863	87,897	8,673	21,850	121,283	26.9
1251-2500	1,333	85,143	21,419	13,431	121,326	26.9
2501-4000	104	21,847	10,295	61,382	93,628	20.8
4001+	—	—	6,426	74,934	91,360	18.0
Total	4,955	204,182	48,740	193,124	451,102	100.0
Percentage	1.1	45.3	10.8	42.8	100.0	

Source: Valenzuela and Vernez, *La Actividad Constructora Popular: Analisis General Y Elementos Para Una Politica de Apoyo* (DNP, April 1972), p. 27.

Since the dwelling units these families occupy are primarily single family attached units built over an extended period (excluding the commercial submarket), it can be assumed that 79.4% (from tables 1 and 2) of families with monthly incomes of 2,500 pesos or less are finding their housing solution as owners, renters, or roomers in self-contracted units.[16] Examining the housing tenure status of these families brings into focus the importance of accumulation of capital through the housing development process. In tenure status, owners represent the majority in all housing submarkets except the commercial (see table 2).[17] Renters occupy the majority of commercial submarket units and approximately one-fifth of the *pirata* units, but are not found in the government submarket (government housing for this income category offers ownership rather than rental programs). For the *pirata* and government submarkets, roomers account for a significant portion of the households and most likely represent the portion above unity (.2 to .3) of the ratio of the number of households per dwelling unit (1.2 to 1.3).[18]

TABLE 2

HOUSEHOLD DISTRIBUTION BY HOUSING SUBMARKET AND HOUSING TENURE

Housing submarket	Tenure owners	Renters	Roomers	Total percentage
Pirata	52.9	19.7	27.4	100.0
Invasion	61.8	0.0	38.2	100.0
Government	85.7	0.0	14.3	100.0
Commercial	34.7	65.3	—	100.0

Source: Valenzuela and Vernez, *Actividad Constructora Popular: Analisis General Y Elementos Para Una Politica de Apoyo* (DNP, April 1972), p. 30.

Berry's previous studies of housing expenditures indicate that for the *pirata* settlements, 51% of the households pay nothing for housing services,[19] a figure approximately equal to the 52.9% of the households who are owners in this housing submarket. In *invasion* settlements, an even higher percentage pays nothing for housing services.

For those households in this low income category (2,500 pesos or less per month) that do pay for housing services, the cost is generally 20-25% of monthly incomes.[20] Actual payments seldom exceed 500 pesos and are seldom less than 150 pesos[21] with a median cost of 200 to 250 pesos.[22]

If the fraction of households per dwelling unit over unity (.2 to .3) can be attributed to roomers in owner occupied or rented dwelling units, it can be estimated that for the families who rent to roomers (approximately 25%), the income derived is 26% of total monetary income (median rent paid divided by median total income).[23] This figure, no doubt, varies greatly from household to household.

A study limited to three distinct settlements—*invasion, pirata,* and government—at different levels of development and distinct locations in the city, indicates a similar occurrence of roomers and income generated. The percentage of dwelling units with roomers varies between 38% and 22% for the government and *pirata* settlements, respectively (both settlements more than 85% developed into permanent structures).[24] The percentage of total monthly income represented by income from dwelling units with roomers is 24.1% for the government settlement and 21.5% for the *pirata*.[25] The study indicates that the roomers occupied 1.6 rooms per dwelling or 27.2% of the total rooms in the unit (excluding baths, patios, and storage areas). Although more detailed study of the phenomenon is necessary, these figures may serve to indicate the importance of renting as an income source to a primary occupant of a dwelling unit who has the ability to develop and expand his unit to other uses over a period of time.

Current migration patterns reinforce the importance of offering housing services to low income migrant families. Vernez estimates that between 50% and 80% of the immigrants to arrive in Bogotá became roomers in *pirata* and *invasion* settlements. Only 7% to 27% of the immigrants arriving go first to the city's center, their traditional destination,[26] the remaining migrants going directly to low income settlement areas. Migrants pay a portion of their income as rent to families who are investing that income in developing housing services. Self-contracted housing, then, includes self-financing. Low income families provide housing solutions for families with income characteristics similar to theirs, substantially aiding in the resolution of the housing shortage in Bogotá, and, at the same time, increase their ownership of capital.

A second important source of revenue for low income families is utilization of the dwelling unit for nonresidential purposes. There has been little

study done of the importance of non-wage income as part of the total earnings of low income families. Given that underemployment or occasional employment is prevalent among low income families, the opportunities to supplement fixed income with rental of dwelling unit space for non-residential uses or the use of space by the family for business or commercial concerns deserves attention. Berry states that when small shops in the dwelling provide the principal income source for the family, incomes from these businesses surpass wages from labor or salaried employment. Moreover, a small sample study in Bogotá and Cali indicates that goods-producing shops represent the principal income for 14-25% of the families.[27]

A land use inventory of the three previously mentioned settlements plus an additional *pirata* and *invasion* settlement (both more than 75% developed into permanent construction), done by the author in 1973, shows that 21-29% of all dwelling units quarter some type of non-residential use.[28] The percentage of different types of non-residential use is shown in table 3.

TABLE 3
NONRESIDENTIAL USES IN FIVE LOW INCOME SETTLEMENTS (BOGOTÁ)

Settlement	Small food store	Small production shop (goods)	Small retail shop (goods & services)	Restaurant	Office	Percentage
Pirata	30.3	21.4	22.3	16.5	9.5	100.0
Invasion	38.0	27.5	19.7	11.3	3.5	100.0
Government	25.2	18.9	30.8	9.4	15.7	100.0

Source: Bender Settlement Land Use Inventory, 1973-74.

The most prevalent activities found are those which provide commercial goods and services to the community (small food stores, small retail shops, and restaurants). These are probably operated by someone other than the head of the household—the women and children in the family—who can operate the businesses while carrying on the functions of the family. The two remaining activities (small production shops and offices) most likely are activities carried on by the heads of households, and they perhaps offer employment to other persons.[29] Although no detailed information concerning income from these activities is available, the study by Bender and Gauhan may provide some insight. For the first group of activities—conducted by non-heads of households—the incomes from these represented 15.9, 21.7, and 25.5% of total income in *pirata, invasion,* and government settlements, respectively. For those activities conducted by heads of households, the percentages were 19.5, 24.9, and 13.4%, respectively. The lower percentage in the government settlement for the second group is probably due to the income requirements of the government housing programs, which

tend to accept heads of households with stable employment. In addition, the reduced size of rooms and lots in the government programs make space allocations to nonresidential uses difficult.

Of the nonresidential uses identified in the three-settlement study, less than 13% occur in rooms identified as rented space, indicating that these activities are carried on by the primary occupants of the dwelling unit. Comparing the percentage of total income that these business activities represent and the rental value of the space they occupy, it appears that the return is approximately the same. Moreover, as Berry points out, these shops often provide the family with goods at wholesale prices, thus increasing the value of having a business in the dwelling unit.[30] There would also appear to be more family satisfaction in operating a business, in that it gives the appearance (if not the income) that the family is progressing and economically active. Also, business activities may interfere less with family life than the presence of roomers who must share sanitary facilities.

Less than 2% of those dwelling units with roomers indicated that they also rented space for nonresidential uses. Unfortunately, specific data is not available as to whether or not roomers are also present in those dwelling units with businesses operated by dwelling owners or renter families. From the above, it would seem that it is improbable. Since dwellings in these settlements tend to have 5.77 rooms and 7 persons per unit, it can be assumed that no more than 1 to 1.6 rooms per dwelling would be devoted to nonfamily use (the family occupying a living area, kitchen, and two sleeping areas).

Summing the percentages of dwelling units with nonresidential uses and those with roomers, 10% to 57% of the dwelling units surveyed utilize dwelling unit space as an income producing source representing 15% to 25% of the total monthly family income. While further study is needed in this area, the Bender-Gauhan study indicates the importance of the dwelling unit as an income source to the families during the development of the settlement.

TABLE 4

SPACE UTILIZATION IN LOW INCOME SETTLEMENTS (BOGOTÁ)

	Settlement		
	Pirata	*Invasion**	Government
% Nonresidential	21	7	19
% Boarders	22	3	38
% Total	43	10	57

*The low percentage of income producing uses in the *invasion* settlement is due to its state of development and location rather than to its condition of being an *invasion* settlement (see note 30).

Sources: Bender Land Use Survey in Five Bogotá Settlements, 1973-74; Bender and Gauhan Settlement Study, 1973-74.

Almost all income producing use of dwelling unit space takes place in units which are of permanent construction. Rental of space to roomers is most commonly found in smaller units and is associated with households with lower incomes. Nonresidential activities are likewise most generally found in dwelling units of permanent construction, and total monthly incomes of the households who own the units are usually higher than incomes of those who rent space.

In summary, the income derived from utilization of dwelling unit space can be matched with perceived opportunities for investment by the dwelling unit owner. Needs can be closely matched to resources at any given moment, providing a flexibility that is not offered by other investment opportunities. It is doubtful that the available funds and labor of low income families can be invested in other sectors so effectively and efficiently.

A third important source of income to the settlement families is the housing expenditure relief that possession of dwelling unit (with or without legal title) represents. As noted earlier, it is estimated that half of the low income families in the *pirata* settlements pay nothing for housing services.

The amount that this housing expenditure relief represents as a percentage of total income calls for comment. Since most units average from 4.5 (*invasion*) to 6.6 (*pirata*) rooms per dwelling,[31] it can be assumed that for dwelling units without rental space the value of monthly housing services consumed is from 1,125 to 1,650 pesos (250 pesos per room) for units without rental space, and from 750 to 1,125 pesos for units with rented space.[32] Table 5 presents the imputed value of housing services as a percentage of total monthly family income.

TABLE 5
IMPUTED VALUE OF HOUSING SERVICES
(Percentage of Total Monthly Family Income*)

Settlement		Monetary Family Income Level (pesos)		
		1,250	2,500	4,000
Pirata unit	w/rental space	47.4%	31.0%	22.0%
	w/o rental space	61.1%	39.8%	29.2%
Invasion unit	w/rental space	37.5%	23.1%	15.6%
	w/o rental space	47.4%	31.0%	22.0%

*Based on 1) 4.5 rooms/dwelling unit in *invasion* settlements and 6.5 rooms/dwelling unit in *pirata* settlements, 2) 250 pesos per room per month rent, and 3) 1.5 rooms rented.

Although only approximate in nature, the percentage of total income represented by the consumption of housing services is significant, particularly in the lower income categories. Clearly, if families who possess dwelling units in these settlements were forced to seek housing on the rental market,

it would be extremely difficult for them to duplicate the services that they are now consuming. They, like the families to whom they rent, would be forced to locate in fewer rooms, lose the income resources the dwelling unit represents, and pay a significant portion of their real income for rent.

V. SOME SUMMARY REMARKS

The income generated through rents and home-based businesses, and the reduction of housing costs through home ownership, are significant when compared with the total incomes for low income families. The opportunity for these families to continue to better their economic situation through this type of housing development is changed, however, by several key issues. Access to land, availability of construction materials, provision of public services, and the decision to create, develop and maintain one's own dwelling are priority issues to be dealt with if the process is to continue.

The issue of access to land is critical. Clearly, land costs will be an important factor in determining the composition of the housing market in Bogotá in the future, the locational characteristics low income family settlements will have, and the type and density of dwelling units that will be developed. Undeveloped land will have to be made available to low income families at affordable prices. Although little empirical information is available at present, it appears important to understand the trade-offs between long-range development of dwelling units which may be modified over a period of time and short-range development of multifamily, multistory structures, which support high land costs, but which may be modified to an extremely limited degree. Given the importance of income generated from dwelling unit use, it would seem unlikely that the multifamily, multistory solution is appropriate unless the opportunity cost of using the dwelling unit as an income source is replaced by higher, fixed-wage incomes or by a subsidy. If ownership of capital (land and its improvements) is now seen as the most effective way of redistributing income while achieving growth, housing may prove to be the most accessible capital to be acquired by the poor.

Regarding provision of public services, low income housing settlements are often established before there is adequate provision of water and sewerage systems, paved streets, public transportation, education and health facilities, telephones, etc. This is particularly true in the case of *invasion* and *pirata* settlements. A long process through legal, political, and administrative channels then ensues to bring these services to the community, unless the settlements themselves attempt to provide them. Major development loan commitments of international and national agencies for provision of such services reflects the high priority given them by local governments and dwellers, although few studies have been conducted examining settlement origin, development patterns, and the impact these services have on the

ability of the settlements to develop. Given the limited amount of resources available for utility provision, priorities must be established which will enhance development capabilities. It is clear, however, that continued growth and development of low income housing settlements is dependent on their inclusion into the urban network of services.

The issue of availability of construction materials is similar to that of land accessibility. Limited quantities of basic construction materials are available. Settlement dwellers must purchase these materials on the open market, competing with the demands created by the institutionalized housing industry and the transportation, commercial, and manufacturing sectors. Unavailability of construction materials because of price or production severely limits the ability of the settlements to grow and expand, thus reducing the amount of housing and commercial services offered through settlement development.

Housing policies that increase the production of middle and upper income housing would appear to have as one effect a reduction of construction activity in low income family settlements, through decreasing the limited supply and inflating the cost of construction materials. Wages earned in the production of higher income housing by the small segment of the labor force involved in the construction industry may not be directly invested in development of low income housing units. Moreover, given that 45% of all households in Bogotá develop housing in an evolutionary manner, the income gains made by those few in the construction industry may not offset the constraints placed on construction material availability to the majority of the low income families in the city. As in the case of land, the access to construction materials at costs which allow low income families to invest in construction on a continuing basis is essential.

In summary, access to land and construction materials at affordable prices, and provision of public services, are necessary to permit continuing low income settlement development. These issues are, by and large, controlled by forces external to the settlements themselves. The benefits derived from the growth and change that take place enable many of the settlements' inhabitants to survive and prosper in the city.

It is important to remember, however, that a clear decision is made on the part of the low income settlement dweller to assume direct responsibility for the creation and maintenance of his dwelling unit as part of a settlement development process. He not only provides shelter for his family, but also maximizes the opportunity offered by investment in land and improvements made with the income gained through provision of housing and other goods and services.

At present, his decision comes from a lack of alternatives. There is no assurance, however, that future generations will accept direct participation in housing development. Instead, they may demand more traditional alternatives, realizable or not. There is also no guarantee that housing policies

and programs will provide the resources necessary for continued settlement development by the dwellers themselves. It cannot be simply assumed that settlement development will continue.

NOTES

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1. Patrick Geddes, *Town Planning Towards City Development*, a report prepared for the Durbar of Indore, India (1918), I, p. 85.

2. [Sic.] John C. Turner, "A New View of the Housing Deficit," San Juan Seminar Paper (April 1966).

3. This form of development, called *piratas* in Colombia, is especially prevalent in that country, accounting for 41% of all dwelling units in Bogotá; *invasion* settlement dwellings account for only one percent of the total dwelling units. See Jaime Valenzuela and George Vernez, *Actividad Constructora Popular: Analisis General y Elementos Para Una Politica de Apoyo* (DNP, April 1972), p. 68.

4. See David Collier, "The Politics of Squatter Settlement Formation in Peru," February 1973 (mimeograph).

5. See William Mangin, "Latin American Squatter Settlements: A Problem and a Solution," *Latin American Research Review* **1**, no. 3 (Summer 1967): 65-98.

6. This parallels policy and planning thinking in most western, industrialized nations, particularly in the United States, laying the groundwork for vast urban renewal projects in deteriorated urban areas, and massive public expenditures to house the urban poor.

7. John C. Turner, "Housing Priorities, Settlement Patterns, and Urban Development in Modernizing Countries," *American Institute of Planners Journal* **34**, no. 6 (November 1968): 354-363.

8. Albert Berry, *Algunas Caracteristicas del Sector de Auto Construccion de Viviendas: Proyecciones de Su Importancia Relativa El Futuro* (DNP, 1972), p. 16; hereafter cited as Berry.

9. Research is underway to examine the legal aspects of *pirata* land sales and settlement development in Bogotá (FEDESARROLLO).

10. Valenzuela and Vernez, *Actividad Constructora Popular*, p. 13.

11. See DESAL, *Marginalidad en America Latina*, I and II (Santiago, Chile, 1967). For a critical analysis of this concept, see Jose Nun, "La Marginalidad en America Latina," *Revista Latinoamerica de Sociologia* **2** (July 1969).

12. Turner, "Housing Priorities," pp. 354-363.

13. Berry, p. 7.

14. It seems doubtful that more controlled construction practices in the development of low income housing, although eliminating some of the inefficiency incurred through phased construction, can offset hidden costs in administration, under-utilization of resources (time, money, exchange of services, etc.), and general loss of control of the owner over the building process.

15. DANE, Encuesta de Hogares (E-H2) (unpublished tables); see DAPD, *Mercadeo de Tierras en Barrios Clandestinos de Bogotá* (April 1973), p. 10.

16. Roomers include the "inquilinatos" or those who rent rooms from a household, sharing common sanitary facilities. As will be discussed later, the government housing solutions offered in this income category are of a self-contracted nature, with the family making modifications and/or additions to the units they build or buy through the government programs. See Valenzuela and Vernez, *Actividad Constructora Popular*, pp. 27 and 30.

17. *Invasion* settlements are eliminated from the discussion because of their minor role (1.8% of total families) in housing this income category (see table 1).

Renters and roomers represent 65.3% of the families in the commercial submarket. Moreover, this submarket houses the poorest segment of the population—76.0% of the families in the submarket have household incomes of 1,250 pesos or less.

18. See DAPD, *Mercadeo de Tierras*, p. 78.

19. Berry, p. 8.

20. DAPD, *Mercadeo de Tierras*, p. 25.

21. ICT, Normas Minimas.

22. DAPD, *Mercadeo de Tierras*, p. 48.

23. Berry, p. 12.

24. 1974 study of three settlements by Stephen Bender and Timothy Gauhan, Program of Development Studies, Rice University, Houston, Texas.

25. The *invasion* settlement was less than 30% developed into permanent housing, was situated 350 meters above the city in the hills to the southeast of the central business district, and was a 35-minute bus ride away.

26. Berry, p. 16.

27. Ibid., p. 5.

28. The *invasion* settlement mentioned earlier (see note 25) showed only 7% of the dwelling units having some type of nonresidential use. This would appear to be due to the recent establishment of the settlement (1967), the still-provisional condition of most of the construction present, the small size of the dwellings, the noncontiguous, hilly characteristics of the terrain, and the lack of clearly defined streets.

29. Berry, p. 5.

30. Ibid.

31. Bender and Gauhan *Survey*. These figures correspond to 31 m^2 (*invasion*) and 58 m^2 (*pirata*) as described by Valenzuela and Vernez, *Actividad Constructora Popular*, p. 78.

32. Bender and Gauhan Settlement Study, 1973, 1974. Also see DAPD, *Mercadeo de Tierras*, p. 67.