1. Overview

Urbanization has progressed rapidly in Ecuador. In 1950 only 28.5% of the population lived in the cities; by 1975 that proportion had grown to 41.6%. The strong urbanization has relied on the acceleration of internal emigration from rural areas. In Quito as much as 43% of the population was not born in the city; in Guayaquil this share is 33%. Of 2.8 million urban dwellers in 1975, as many as 1.1 million or 38% were rural-born. This process of rapid urbanization has created a precarious life-style, known as "marginalidad", for many people. In Guayaquil almost one-half of the population (400,000) live in substandard housing and are deprived of sanitary services. The same is true for Machala, Santo Domingo de Los Colorados, Quevedo, and some sections of Quito. It should be noted that a substantial effort has been made to construct new dwelling units. About 175,000 new units were built between 1974-79. Of these, 101,000 were constructed through public sector programs with about one million people benefiting. However, 98% of this construction has taken place in urban areas, of which Quito and Guayaquil accounted for 75%.

1.1 Settlement by Region

The Costa

During the 1970's, the Costa was the most urbanized region, although the city of Guayaquil alone accounted for two-thirds of the area's urban population. In 1974 the region had 49% of the total Ecuadorian population; Guayas Province with Guayaquil as its hub accounted for 23%. The other urban centers are smaller and of recent origin. A majority are located on or close to the coastline; Esmeraldas and Manta, in particular, have grown with the development of the fishing industry. Away from the coast, most villages are located along or near streams that served as the main arteries of communication before the installation of a highway system. The rural population of the Costa is not crowded. In the rain forest of the north, the settlement pattern follows the system of slash-and-burn agriculture practiced by semi-nomadic farmers who move to new lands as the soil is exhausted. There are also some permanent settlements concentrated around banana plantations. Farther to the south where rainfall is lighter, farming is sedentary. Inland, along the western base of the Andes, the population is dispersed in cattle ranches and plantations of sugarcane and other export crops. Close to the Peruvian border, settlement is limited by the scanty rainfall.

The Sierra

In 1974, 48% of the population lived in the Sierra. The Pichincha area, with Quito in its center, accounted for 15% of the total population. From the town of Tulcan on the Colombian border to Macara on the border with Peru, the provincial capitals and nearly all of the larger Sierra towns are situated at the bottom of basins and are on or close to the Pan American Highway. The rural majority of the Sierra population lives for the most part clustered in farm villages scattered around the slopes of the basins, at elevations of 7,500 to 10,000 feet.

The Oriente

Settlement of virgin lands in the Oriente has been an important facet of recent Ecuadorian development. The government plan called for the establishment of directed and semi-directed settlement schemes where the government would provide basic infrastructure and housing for new settlers. However, in practice, colonization has been mostly spontaneous and, except for land titling, it has received little government support.

The population of the Oriente can be divided into two groups: "old" settlers and "new" settlers. "Old" settlers are located mostly on the Andean slopes (along the Baeza/Tena/Puyo/Macas line) where permanent settlements began to be established in the late 19th century, with another influx in the 1930's and 40's. "Old" settlers' farms are either concentrated in small villages or scattered throughout the territory in irregular fashion. A few are found in the lowlands, almost always spread along the banks of the major rivers. These populations consist primarily of indigenous Indian groups.

Nearly all of the "new" settlers have established themselves in a regular pattern along both sides of the new roads in the region. They stake out a claim to a plot along the road which is 200-250 meters wide and 2,000 m deep (providing 40-50 ha). As locations immediately alongside the road fill up, newcomers stake their claim 2,000 m back where the earlier settlers' property ends. Along the Lago Agrio-Coca road as well as on several others in Napo and Morona provinces, these settlement lines (respaldos) are now four to six deep, putting those in the last line at least 6 to 10 km away from all-weather roads, access to services, and even to local markets.

1.2 Housing Deficit

The most serious problem facing Ecuadorian housing authorities is the severe shortage of housing units. Production of new housing has been unable to keep up with population increases, causing many families to move into dwellings that are already occupied. This overcrowding is made worse by the fact that most of these houses are already in deteriorating condition and lack adequate services. A recent tendency on the part of developers has been to use vacant land on the periphery of the cities where land prices are lower. This policy favors continued and often uncontrolled expansion of the urban area, and results in the increased deficit of urban services as well as higher public utility costs due to increased distances involved. While urban renewal (which includes housing) is costly, such an effort would have a favorable impact on the urban core, halting deterioration and outmigration, and assuring maximum use of existing infrastructure. JNV/BEV housing programs should also be directed at urban centers of medium size (40,000 to 100,000 population). Although the housing deficit is greater in Quito and Guayaquil, the problems of congestion and higher costs for urban services will become increasingly severe if these areas are the only ones which offer new and better housing.

The demand for housing is expected to increase by about 54,000 units annually over the next five years.

2. Housing Policy and Institutions

The major goal of the national housing policy is to reduce the housing deficit, with special programs directed at sectors of the population with the least economic resources. Emphasis has also been placed on the provision of essential public services in an attempt to create more healthy and stable living environments. Housing is seen as a social investment as well as an economic investment.

Consejo Nacional de Desarrollo--CONADE (National Planning Board)--prepares economic and social development plans and coordinates the development activities of all bilateral and multilateral donors in Ecuador.

Instituto Ecuatoriano de Obras Sanitarias--IEOS (Ecuadorean Institute of Sanitary Works)--plans and executes sanitation programs at the national level.

Instituto Ecuatoriano de Seguridad Social (Ecuadorean Institute of Social Security)--provides financial assistance and social services, and housing to affiliates of the system who are middle-income, mostly urban.

Junta Nacional de la Vivienda--JNV (National Housing Board)--has directed the development and implementation of the nation's housing policy since 1973. The JNV has responsibility for planning, site preparation, and construction; it also has authority to import building materials. JNV controls and supervises the operations of the Banco Ecuatoriano de la Vivienda (BEV) and requires BEV to finance housing programs of "social significance." To assure that the JNV and BEV follow identical policies, the president of the JNV is also the president of the BEV.

Banco Ecuatoriano de la Vivienda--BEV (Ecuadorean Housing Bank)--is the financial arm of JNV in charge of loans, collections, and contracts. The responsibility of financing new construction and providing loans to lower economic groups is in the hands of JNV/BEV.

Mutualista system - consists of 11 member associations organized along the same lines as U.S. savings and loan institutions. The system was created to offer more flexible financing for the purchase of housing than was available in the private banking system. The Mutualistas are chartered as private business organizations but have received some aid from and are regulated by BEV. Occasionally the Mutualistas act as developers, planning the acquisition and development of the site and contracting out the actual construction of the housing unit.

2.1 Urban Zoning and Planning

Zoning in Ecuador is very flexible. The implementation of regulations rests with the municipal government, which often does not have the ability to carry out the task. At the same time, the flexibility permits the establishment of mixed-use zones, principally mixes of commercial and residential use, which reduce the reliance on vehicles for simple shopping activities. The majority of sites used by the JNV have not had any zoning regulations for use or density. Of Ecuador's 119 municipalities only three, Cuenca, Guayaquil, and Quito, have complied with the requirements of the Municipal Management Law (Ley de Regimen Municipal), which requires that municipalities plan their development. This means that JNV projects in the remaining urban areas are developed without local guidance.

After the earthquake in Ambato in 1949, a building code, with standards adapted from the California Uniform Building Code, was developed for areas prone to seismic activity. The BEV also developed the "Minimal Technical Specifications for Housing Construction" for the Guaranteed Housing Program, which details the specifications for building materials and design standards. In 1976, the municipal government of Quito was re-

viewing standards for high-rise construction and the Instituto Ecuatoriano de Normalizacion was consolidating existing standards in order to draw up a national code. The final stage, dealing with project execution, was expected to be most difficult because of an inadequate inspection process. Greater interest in quality control of building materials and project execution was needed.

3. Disaster/Low-cost Housing

The housing units constructed during the 1974-79 period fell far short of meeting the growing housing demand, and little effort has been made otherwise in the formal housing sector to provide affordable housing for low-income groups. The new management of BEV-JNV has announced a shift in the orientation of those institutions, however, more toward the needs of the poor. At the same time, an ambitious BEV-JNV shelter program for low-income families of Guayaquil was outlined which included an IBRD-financed project as well as the construction of 10,000 units at a cost of about US$4,000 each.

The IBRD's first Guayaquil Urban Development Project, to be carried out between 1980 and 1985, includes two components which relate to low-cost housing: 1) Services to low-income areas --upgrading (landfill and infrastructure) in two squatter settlements, Lotizacion Mapasingue and Guasmo North, and development of 3,700 serviced plots in two new areas, Alegria and Floresta Pilot; 2) Housing loans --small loans for home improvements and/or construction of new units will be provided through BEV to about 9,700 residents of the project sites and in other low-income areas.

4. Housing Types, Materials, Construction and Services

4.1 Housing Types

Urban

Both Quito and Guayaquil have undergone tremendous growth in their housing stocks. In 1974 the combined totals for the two cities equaled 58% of the national urban housing stock. In Quito colonial homes of volcanic stone are numerous in the inner city. The newer buildings are of modern design and are constructed of earthquake-resistant materials. A majority of working-class dwellings are of simple adobe construction with tiled roofs. Quito also has squalid suburban slums; some of the units are shacks made of scrap materials; others are dilapidated houses with ten rooms which

may house as many as ten families. Their working class occupants are usually slum dwellers, less because of poverty than because of the severity of the housing shortage.

New housing in Guayaquil is of fire-/and earthquake-resistant design, constructed under a strict code. Most of the modern apartment buildings in Ecuador are in Guayaquil. A majority of the houses are of impermanent materials, a large proportion of them built by migrants from rural areas. Many of the poorer houses are built in swampy sites on the outskirts of the city. Although suburban slums are less common in the provincial cities and towns, they can be found in some of the faster growing urban centers of the Costa.

The second national housing census completed in 1974 (concurrently with the third population census) showed a stock of 1.2 million units. The census classified the different types of housing units as follows:

Casa or Villa - permanent construction of resistant materials such as concrete, wood, brick, adobe, or stone with wood; tile or brick floor; exclusive use of sanitary facilities

Apartment - a group of rooms for residence, forming part of a building of one or more floors, with independent entry and exclusive use of water supply and sanitary facilities

Rooms in a boarding house - belonging to a building with a common entrance. Access to water and sanitary facilities is usually shared, these services being available to the building as a whole

Mediagua - one story construction with walls of adobe, mud, or wood and with a roof of tile or metal

Rancho or Covacha - a unit covered with straw, palm leaves or other vegetation, with walls of cane or bajareque and floors of wood, cane or earth

Choza - a unit with walls of adobe or straw, earth floor, and straw roof

Other - this category includes huts, caves, kiosks, boats, wagons, tents, etc.

Distribution by Types of Housing Units, 1974

Types	No. of Units
Casa or Villa	329,388
Apartment	93,396
Rooms in a boarding house	164,897
Mediagua	196,106
Rancho or Covacha	302,400
Choza	111,833
Other	2,146
Areas not designated for housing	1,844
National Stock	1,202,010

Source: AID, Ecuador Shelter Sector Analysis and Recommendations, 1976.

Rural

Approximately 59% of the nation's housing stock is located in rural areas. Of this total more than 80% lack electricity, exclusive use of sanitary facilities, drainage, and drinking water. At least 30% of the rural housing units consist of one room inhabited by three or more persons. Nearly all rural housing is made of adobe, adobe brick, reed or cane, or wattle and daub. Cane or reed is most frequently used in the Costa where units are often constructed on stilts to avoid flooding. Thatch is the most common roofing material, although many units in the rural Sierra and most of the two-story adobe houses lining the main streets of provincial towns have tile roofs. The typical house in the Indian villages of the Sierra consists of a single room with a dirt floor, mud walls, and a thatch roof. There are no windows, and the walls are coated with soot from cooking and heating fires. The home serves as a storage place for produce, and during the rainy season domestic animals are often sheltered inside.

4.2 Construction Methods

The traditional house covers 20 to 30 sq m and consists of two rooms. The first is a bedroom which also serves as the living room. The second room is the kitchen with a hearth. Any remaining area is used for storage. Ventilation is achieved by an opening in the roof because the walls have few or no windows for security reasons. Construction methods and the use of building materials vary with the climatic region. In the Sierra, where cold weather is common, the following construction characteristics describe the average house:

Floor: earth, bricks, or boards, sometimes covered with a mat of fiber

Walls: adobe, brick, wood

Ceiling: fiber matting

Roof: wood, clay tile

Windows: wood

Doors: wood

Along the coast and in the central valley, where the climate is hot and humid, lighter building materials are used. Usually the house is constructed on pilings due to marshy conditions and the need for ventilation.

Floor: earth, cane, wood, fiber matting

Walls: cane, wood, whitewashed clay

Ceiling: cane

Roof: cane, palm or paramo straw

Windows: wood

Doors: wood

Settler housing in the Oriente is generally a one-room (6 m x 4 m) hut with a slightly elevated rough wood floor, wall, and roof supports. The walls are made of hollow cane; the roof often consists of a leaf cover, but metal is preferred and is installed as soon as the settler can afford it. A small part of the house is partitioned off for sleeping quarters. Stoves are primitively fashioned of clay and metal, and most households use wood for cooking fuel. Furniture is usually no more than a table and some stools or benches. By contrast indigenous people build larger and more solidly constructed houses, usually measuring 7 x 12 m. Living quarters are always separated from the kitchen, and floors are raised well above the ground to protect against humidity as well as animals.

Modern construction methods are heavily dependent on imported materials (steel, concrete) as Ecuadorean production capacity has been insufficient to deal with the dramatic increase in construction activity.

Although the JNV has begun to experiment with the substitution of local materials for imported products, most of the materials used in new construction still come from outside the country. The JNV also attempted to introduce pre-fabricated materials; however, they met with unfavorable reaction from potential consumers. The reduction in the use of local labor and the problems of assuring a supply of consistently high quality materials were also seen as major disadvantages of pre-fabrication.

Materials Used by Dwelling Unit and Price
(in Feb. 76)

Materials	Unit	Average Estimate/D.U.	Average Price Sucres
Aggregates			
Sand	M^3	16.0	70.00
Gravel	M^3	10.0	105.00
Crushed stone	M^3	4.0	100.00
Pebbles	M^3	3.0	50.00
Cement			
Portland cement	Bag (50 kg)	96.0	66.00
White cement	Bag (50 kg)	0.3	265.00
Limestone	pounds	2,200.0	0.60
Masonry Units			
Bricks small	U (100)	302.0	120.00
Bricks regular	U (100)	40.0	160.00
Concrete blocks - 10 cm	U	203.0	3.50
Concrete blocks - 15 cm	U	34.0	4.30
Flooring			
Cement tiles	M^2	25.0	73.00
Pipes and Cement Products			
Pipes - 15 cm	M.L.	2.0	25.20
Pipes - 10 cm	M.L.	18.0	17.20
Pipes - 8 cm	M.L.	2.0	n.a.
Metals - Iron and Steel			
Steel - 6 mm	qq.	3.0	595.00
Steel - 9 mm	qq.	5.0	470.00
Steel - 12 mm	qq.	2.0	460.00
Wire No. 18	qq.	0.1	1,118.00

Materials	Unit	Average Estimate/D.U.	Average Price Sucres
Wood			
Forms	U	56.0	17.00
Mouldings	M	65.0	7.00
Wooden Floors			
Industrial type	M^2	68.0	50.00
Finishing Materials			
Ceramic tiles	M^2	9.0	82.20
Roofing			
Asbestos cement panels	U	28.0	406.70
Roof hips	U	6.0	88.40
Plumbing Fixtures			
Lavatories	U	1.0	370.00
Toilets	U	2.0	1,365.00
Sinks	U	1.0	638.00
Glass			
Glass panels - 2 cm	M^2	7.0	85.00

Source: AID, Ecuador Shelter Sector Analysis and Recommendations, 1976.

4.3 Services

Water Supply

Of the 1.2 million occupied units in 1974, approximately 42% had public water supply and of this total only 19% had service within the unit itself. In rural areas only 14% of the houses had public water supply, and of those 2.4% had supply within the unit. Both regularity of service and water quality are major problems. Although responsibility for water supply lies with the municipalities, the scarce financial resources of these authorities makes it difficult for them to expand or improve their systems.

The principal water treatment plant in Quito is located in the El Tajar section of the city and provides about 60% of the city's water. The remainder of the supply is provided by small auxiliary plants and by wells. Distribution is handled by 25 networks of uniform pressure.

However, due to the inadequate water supply, the municipal government has applied a program of density control through limitations on building height. The inefficiency of the supply systems in both Quito and Guayaquil has forced the municipalities to establish systems of distribution via tank trucks. This is often supplemented by distribution in steel drums set up in central locations to which area residents go with pails. Such techniques greatly increase the risk of contamination. Rural areas do not have even minimal levels of service.

Sanitary Facilities

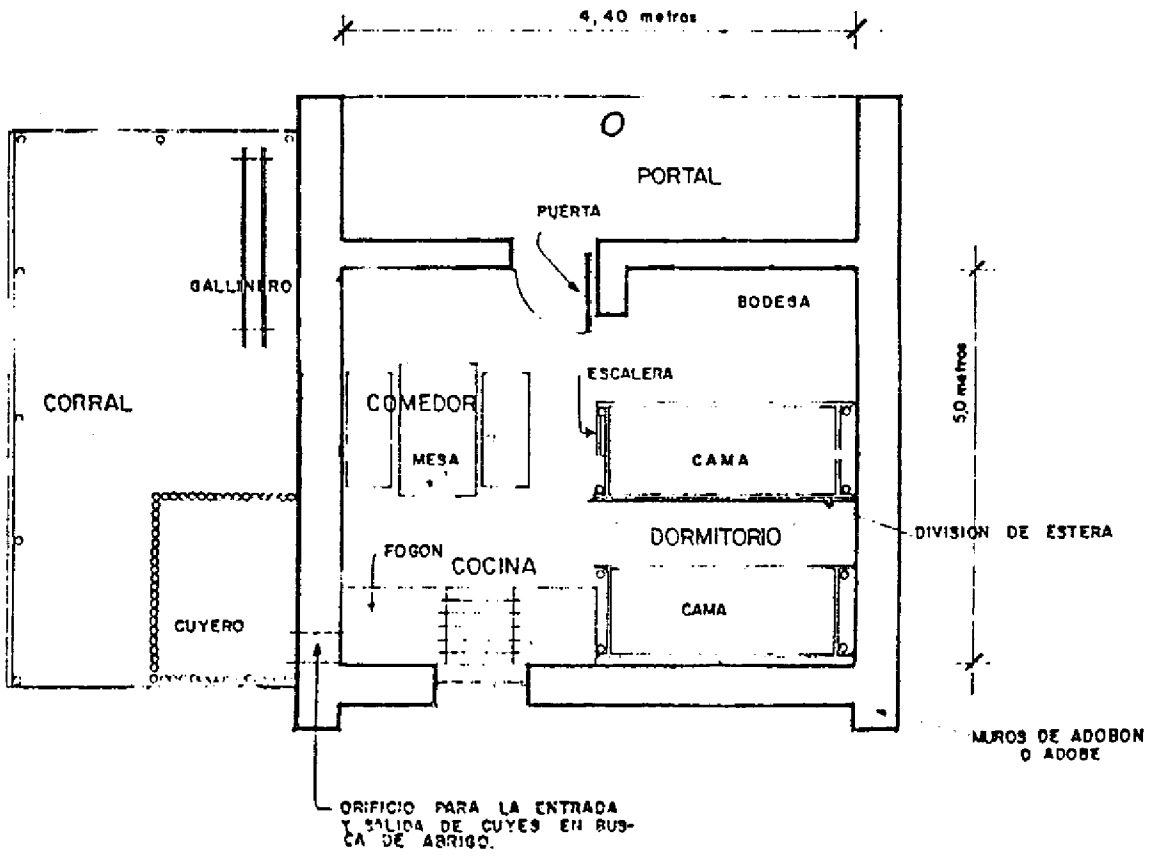
Forty percent of urban housing units have exclusive access to sanitary facilities, while only 33% of rural units do. 15% of urban units have no access to facilities, 87% of rural units. Sewer treatment by public network is available to 64% of urban houses, with 17% having no service. Only 2.4% of rural houses are served by a public system, with 89% having no service of any kind.

Garbage and trash collection in the principal urban centers is generally satisfactory except in urban slum areas where sanitary services are virtually nonexistent. In rural areas sanitation is left up to the local municipalities which organize voluntary cleanup groups when needed. The Institute of Sanitary Works, part of the Ministry of Public Health, has a program of well-digging and latrine construction in rural areas with populations of 3,000-5,000. However, there are no plans for bringing sanitary services to smaller rural settlements. The government also conducts spraying and fumigation programs in Indian villages to rid them of disease-carrying rats and insects.

Electric Power Service

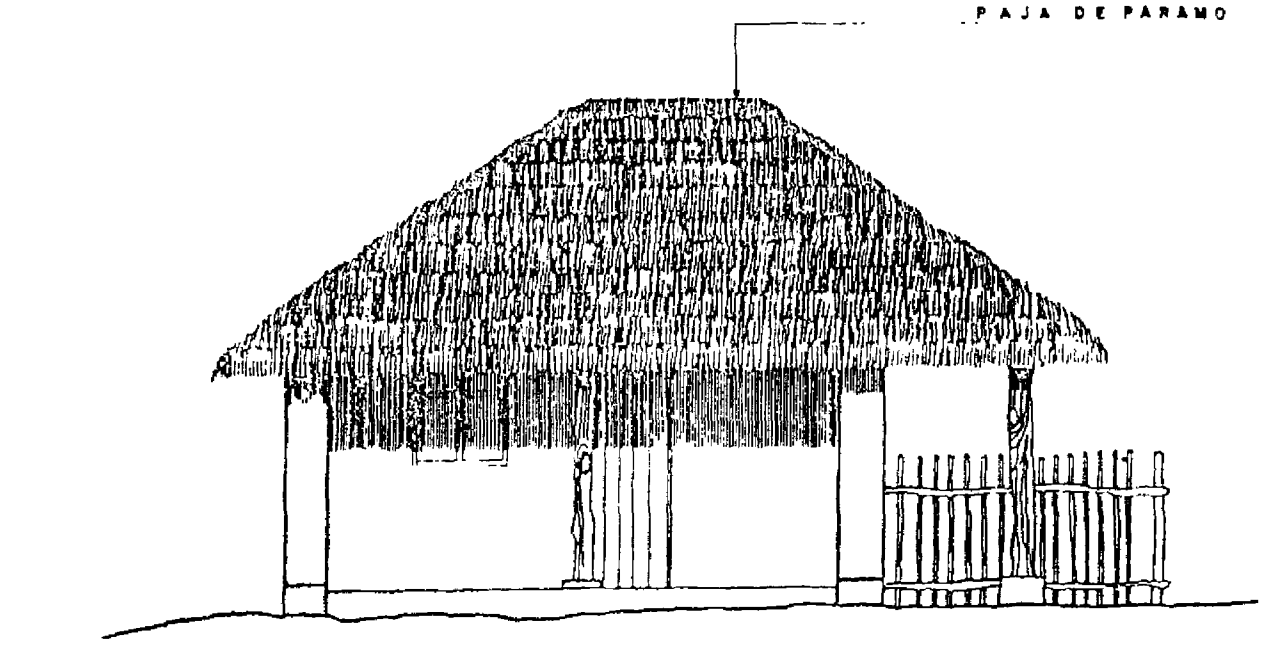
Almost 60% of all occupied units are without power service. In urban areas 82% have service, but in rural areas 88% are without. Because electric power is transmitted by overhead cables, it can easily adjust to spontaneous urban development and, as a consequence, reaches many areas that cannot expect provision of other essential services for some time. The extension of electric power ro spontaneously developed neighborhoods is often the first step toward reccgnition of the area as a formal part of the city.

CASA TRADICIONAL - TRADITIONAL HOUSE
PLANTA - FLOOR PLAN



Source: AID, Shelter Sector Analysis and Recommendations, July 1976.

CASA TRADICIONAL - TRADITIONAL HOUSE
ELEVACION - ELEVATION



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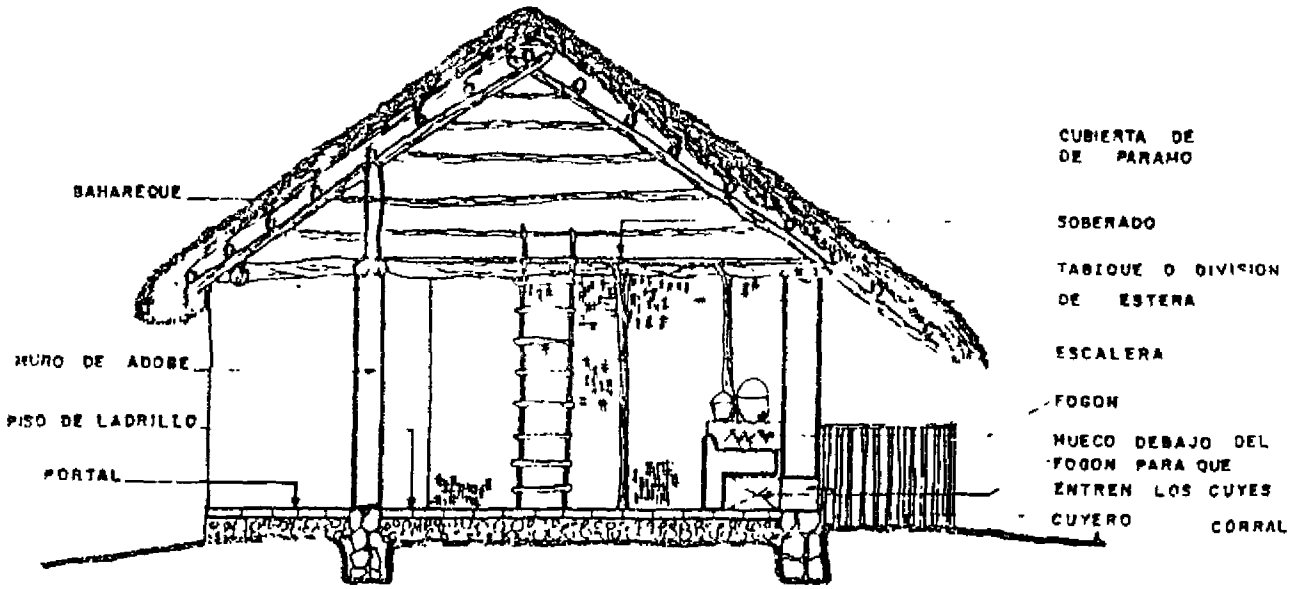
Source: AID, Shelter Sector Analysis and Recommendations, July 1976.

CASA TRADICIONAL - TRADITIONAL HOUSE
SECCION - SECTION



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Source: AID, Shelter Sector Analysis and Recommendations, July 1976.

Services in Dwelling Units

	Urban		Rural		Total	
	No.	%	No.	%	No.	%
No. of Housing Units	489,151	40.7%	712,856	59.3%	1,202,007	100.00%
Electricity	400,309	81.84%	79,415	11.14%	479,724	39.91%
None	86,023	17.59%	627,615	88.04%	713,638	59.37%
Water						
Inside	209,435	42.81%	16,747	2.35%	226,182	18.82%
Outside	52,861	10.80%	60,907	8.54%	113,768	9.46%
Toilet	197,038	40.28%	23,836	3.34%	220,874	18.37%
None	76,303	15.60%	621,470	87.18%	697,773	58.05%
Sewer	313,421	64.07%	16,896	2.37%	330,317	27.48%
None	81,732	16.70%	634,584	89.02%	716,316	59.59%

Source: JNV, Dept. de Programacion, 1976

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1. Overview

Because ethnic and cultural diversity is minimal, Salvadorean settlement patterns vary only with urban or rural location and economic status. Highly skewed income distribution is reflected in Salvadorean settlement patterns. Majority of urban and rural population is unable to purchase land or housing, resulting in a proliferation of high density informal settlements with substandard housing.

Total Urban Population in Informal Settlements by Urban Area, 1975

Urban Area	Total Urban Population	Informal Settlments Population	Percent Informal Settlements
Metropolitan Area of San Salvador	564,967	351,899	62.3
Santa Ana	98,433	65,831	66.9
San Miguel	61,940	37,763	61.0
Usulutan	19,783	14,912	75.4
Sonsonate	33,302	18,539	55.7
TOTAL	778,425	488,944	63.0

Source: AID, El Salvador: Shelter Section Assessment (Draft 1980)

2. Housing Policy and Institutions

Housing institutions have traditionally concentrated resources on middle-income housing, with the exception of the private institution, Fundacion Salvadorrena de Desarrollo y Vivienda Minima (FSDVM). Housing investments have proceeded in a largely uncoordinated fashion and without reference to urban development plans. Recent change in political atmosphere, along with a major World Bank/UNDP urban study and resulting recommendations, have brought about a new focus on the upgrading of low income housing. The following institutions are expected to play a major role in home financing and technical assistance for low-income groups and have been used in the past by international organizations to channel housing assistance to El Salvador.

Public

Instituto de Vivienda Urbana (IVU)--public corporation created in 1950 to construct housing for low- and middle-income urban families. Until recently, IVU tended to build units significantly beyond the reach of lower income groups and focused on San Salvador. However, since 1977, emphasis

has shifted to secondary cities--Santa Ana, San Miguel, and Sonsonate, and low-income families. Recent IVU loan terms have been 7% for 20 years, with a 10% mortgage downpayment for families with an average annual income of $160 to $240.

Direccion de Desarrollo Comunal (DIDECO)--located in the Ministry of the Interior. DIDECO normally provides technical assistance for construction and upgrading of access roads, streets, bridges, water systems, secondary electric distribution systems, school buildings, health facilities, homes, latrines, etc., in which the target community supplies labor. DIDECO maintains four regional offices in San Miguel, Santa Ana, San Salvador, and San Vincente and anticipates frequently used construction materials at DIDECO regional office and/or regional MOP warehouses. DIDECO is the only major GOES organization capable of carrying out several small scale infrastructure projects outside of San Salvador and the major secondary cities.

Fondo Social Para La Vivienda (FDV)--a semi-autonomous entity of the GOES with regional offices in San Miguel and Santa Ana created to administer a fund consisting of employee and employer contributions. Mortgage financing is limited to workers who contribute to the FSV. FSV purchases housing from private developers and resells to its contributors.

Financiera Nacional de la Vivienda (FNV)--a regulatory agency of the savings and loan associations. Financed 4,000 units per year at an average cost of over $15,000, but recent loss of resources has reduced system's liquidity.

Federacion de Cajas de Credito (FEDECREDITO) and Federacion de Asociaciones Cooperatives de Ahorro y Credito de El Salvador (FEDECACES) have network of 84 credit unions in very small communities. FEDECREDITO extends small loans to "grupos solidarios", composed of 5-9 people, in marginal SSMA settlements (for small enterprise "micro-empresa").

Direccion General de Urbanismo y Arquitectura (DUA)--controls the physical development of urban centers and potential urban centers by setting standards, plans and installing storm drainage systems. Has not addressed problems associated with illegal settlements or coordinated its project specific approach with other shelter-service institutions.

Municipal Governments--have no authority or tax base at present to implement urban planning or shelter activities. These functions remain the responsibility of a highly centralized national government.

Salvadorean Institute for Agrarian Transformation (ISTA)--provides rural housing as part of integrated rural development projects. Scope of activities includes socio-economic studies of project areas, organi-

zation of agricultural cooperatives, small agro-industries, the promotion of productive activities by women's associations and youth groups, and promotion of small community infrastructure projects such as street improvements, school construction and structural repairs to buildings.

PRIDECO (formally ONCOM - Oficina de Mejoramiento de Comunidades Marginales)--operates under the Ministry of the Presidency, implementing projects similar to those of DIDECO; in the San Salvador metropolitan area supplies technical assistance, materials and finacial assistance. Lacks focus and employs highly centralized decision making.

Ayuda-Mutua (Mutual Assistance - Ministry of Public Works)--provides materials, supervision and occasionally funds to help community groups in marginal areas carry out physical projects with community labor. Works only with groups which already are organized and request assistance and primarily in "colonias ilegales" to provide basic urban services.

Private

Fundacion Salvadorena de Desarrollo y Vivienda Minima (FUNDASAL)--private non-profit entity created in 1970 to improve the living conditions of the lowest income groups, especially their squatter settlements. Internationally recognized model for low-income shelter projects.

Basic concept is to use housing as an incentive for community development, rather than an end in itself. FUNDASAL project involvement consists of three stages, spanning five years total:

(1) basic technical infrastructure and foundations built by a contractor. Cooperative action plan prepared by community and social workers.

(2) mutual-help phase for construction lasts 6-8 months. Individual houses are then assigned by lottery.

(3) communities encouraged to resolve their own problems and establish community services and enterprises. FUNDASAL monitors this several-year phase.

FUNDASAL employs about 80-90 social workers who live in the project area.

Informal

Since it is difficult for low-income families to obtain access to credit in formal capital markets, they frequently pay high rates of interest (60%) to moneylenders in the informal sector.

Policy

The 5-year National Development Plan (1978-1982) proposes an urban growth policy guided by development plans for the major urban areas and by yet-to-be-adopted zoning regulations. No mention is made of the illegal settlements.

Two key laws, the Ley de Urbanismo y Construccion (1951) and the Ley de Planos Reguladores (1955) legislate urban development in El Salvador. The first promulgates urban subdivision standards and regulations. The second sets forth urban planning procedures and norms. Some of the major cities have adopted urban plans, but do not use them, and secondary cities generally have no plans at all. Ineffective enforcement of the existing legislation is also a problem.

3. Disaster/Low-cost Housing

Rehabilitation and upgrading of marginal urban area to be carried out in 10 marginal settlements in San Salvador Standard Statistical Metropolitan Area (SSMA) with World Bank funding utilizing FUNDASAL, FEDECCREDITO and IVU.

4. Housing Types, Materials, Construction and Services

Urban

Marginal settlements dominate urban landscape. An estimated 47% of the 1976 San Salvador metropolitan area (SSMA) population lived in marginal settlements. The total is projected to reach 54% in 1987 based on current migration and home construction rates.

In Santa Ana, El Salvador's second largest city, an estimated 70% of the population live in marginal housing. Five types of marginal settlements exist: tugurios, campamentos, mesones, casas viejas, and colonias ilegales.

Urban Housing Types, Services and Building Materials

Settlement Type	Builder	Materials	Water/ Sanitary Facilities	Electricity
Tugurios	Household/or informal contractor	Debris (cardboard, plastic, wood), bajareque or adobe	Potable water (standpipe or trucked in)/ pit latrines	Generally available
Campamentos	Government	Wooden structure and walls, cement floor, asphalted cardboard or aluminum roof	Piped water/ Shared toilet	Generally available
Mesones	Private contractor	Floors: cement or mud and cement bricks. Walls: bajareque, wood, metal sheets or debris. Roof: tile, metal sheets, or debris	Piped water/ Shared toilet	Generally available
Casa Viejas	Private contractor	Floors: cement or mud and cement bricks. Walls: bajareque, metal sheets or wood. Roof: aluminum sheets or tile	Piped water/ Shared toilet	Generally available
Colonias Ilegales	Private contractor or household	Same as materials in tugurios: cement and bricks with asbestos cement roofs	Potable water (standpipe or trucked in)/ Pit latrines	Generally available

Characteristics of San Salvador Marginal Settlements
(representative of urban marginal settlements)

Housing Type & Locale	# of Houses	Average Household Size	Total Population	Total Area	% Metro Population
Apartments; tenements; located along ravines, steambeds, public lands and easements	8,060[1]	4.7[1]	38,000[1]	72.46[1]	5.4[1]
Provisional post 1965 earthquake housing on public land throughout city	4,320[2]	4.7[2]	20,300[2]	12.00[2]	2.9[2]
Apartments; tenements located in central city area	34,130[3]	3.8[3]	129,700[3]	95.00[3]	17.8[3]
Old, central city houses converted to multi-family units	5,230[4]	4.0[4]	20,900[4]	26.00[4]	2.9[4]
Single family units on periphery of city on steep terrain	23,360[5]	5.8[5]	135,500[5]	1,533[5]	18.7[5]

1/ Tugurios; 2/ Campamentos; 3/ Mesones; 4/ Casas Viejas; 5/ Colonias Ilegales

Source: World Bank, EDURES, 1978.

Rural

Overcrowding is symptomatic of rapid population growth; 63.5% of one room homes are occupied by 5 or more people. Mean family size is 5.9 individuals, although more than one family generally resides within one household. 57% of rural population own homes, 5% rent and 38% either borrow homes, live in houses as caretakers or are squatters. Colonias chorizos, a rural counterpart to urban marginal settlements, are long, high density rows of crude housing. Colonias chorizos are located along highway rights of way.

Locally available hand-made housing materials are typical; a one room adobe structure with a dirt floor and tile roof most common, followed by bajareque (mud supported by a framework of small tree branches, split bamboo, adobe, straw or grasses). Roofs are thatched with sugarcane leaves or jarajua grass. Since barareque cottages are not durable, adobe dwellings are preferred by rural residents. Rural kitchens are generally separated from the rest of the house.

Principal fuels for cooking are wood, corn cobs, husks and stalks, bagazo (sugar cane); tobacco stems are also used. Kerosene lanterns are most common source of light; 10% of the homes have electrical connections. Latrines are rare. Rivers or springs supply water for half of the population while community wells or public standpipes are other sources. Pilas (open basins to collect rainwater from roofs) supply water for washing. Water is distributed either by filling metal containers, if the water source is close, or by collecting water from a public tap or stream in 50 gallon barrels set on carts.

Construction Costs Per Square Meter of Covered Space
(colones)

	Informal	Bajareque	Wood	Adobe	Mixed
Structure:					
Wooden poles		9.00		11.00	
Cardboard			19.50		
Reinforced concrete					30.50
Bamboo, twigs, etc.	6.25				
Baked bricks					34.00

	Informal	Bajareque	Wood	Adobe	Mixed
Walls:					
Mud and mixed materials		14.00			
Wood boards			31.50		
Adobe				28.00	
Cardboard, plastic, etc.	4.17				
Roof:					
Tiles		34.50		34.50	
Galvanized iron			18.00		
Asbestos sheets					22.00
Cardboard, plastic, etc.	2.50				
Floor:					
Earth					
Cement tiles					9.50
Cement		6.50	6.50	6.50	
Cost per m^2	12.50	64.00	75.67	79.33	96.23
Total cost for $12m^2$ house (C)	150.05	768.00	908.00	952.00	1,154.80

Source: World Bank, EDURES, 1978.

Services and Facilities for Houses in El Salvador

Characteristics	Urban	Rural	National Total
Electricity	83.8	14.4	49.1
Cooking material			
Firewood	46.5	96.5	71.5
Propane gas	26.5	0.7	13.6
Water source-private	38.9	3.5	21.2
Domestic connection-public	27.3	2.0	14.7
Standpipe outside house	20.2	9.9	15.1
Well	1.5	11.0	6.3
Private	2.2	24.8	13.5
River	9.8	48.8	29.3

Characteristics	Urban	Rural	National Total
Bathing areas			
Private	38.8	4.4	21.4
Public	29.9	3.1	16.5
Sanitary facility			
None	12.5	79.0	45.8
Private toilet	29.0	0.0	14.5
Shared toilet	10.0	0.0	5.0
Septic tank	20.8	5.8	13.3
Latrines	27.7	15.2	21.4

Source: World Bank, Economic Memorandum on El Salvador, 1979.

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1. Overview

Because a large percentage of the country's rural population is forced to migrate to urban centers to secure jobs, Guatemala City and other cities are growing faster than the nation as a whole. Urban population has grown from 25% of the total population in 1950 to about 40% in 1980.

The production of minimum standard shelter has lagged far behind this rapid urban population growth. Despite large national and internationally assisted efforts to build housing for victims of the 1976 earthquake, current production reaches 1/4 of the housing goal set forth in the current National Development Plan. As a result of this gap, the population has resorted to informal solutions, with an average housing production of over 18,000 units a year. The geography of Guatemala City, public policy and the skyrocketing cost of land around Guatemala City have severely constrained even the informal housing solution possibilities.

2. Housing Policy and Institutions

In November 1975, a document, "Development Policy of the Housing Sector," was prepared as part of the National Plan for 1975-79. The document proposed a national savings and loan system backed by BANVI (Banco Nacional de la Vivienda), an existing institution which engages in operations similar to those of commercial banks. BANVI would serve as the central institution and would create a National Housing and Urban Development Committee, which in turn would produce a National Housing Plan and a National Social Housing Plan.

At present the GOG has two major housing or housing-related agencies: the FHA (Instituto de Fomento de Hipotecas Aseguradas-Institute of Insured Mortgages) and BANVI (Banco Nacional de la Vivienda-National Housing Bank). The FHA, created in 1962, issues insured home mortgages representing up to 95% of the value of the house, and attempts to attract private capital to the housing market. BANVI was founded in 1973 and, as a federally owned development and finance institution, is responsible for formulating national housing policy.

The attention of these two agencies is focused primarily upon housing need in urban areas, especially Guatemala City. Although other institutions indirectly affect rural housing, no agency has been specifically designated to respond to rural housing needs.

Private commercial banks are the primary source of credit for housing in Guatemala, along with private insurance and finance companies. When these institutions are associated with FHA, risk free investment with high rates of return is guaranteed. However, there is a strong indication of a significant informal financing system operating outside the formal housing finance system. Short-term expensive credit serves middle and lower income groups and small entrepreneurs.

BANDESA, the National Agricultural Development Bank, is mandated to provide assistance for agricultural activities and rural housing. 34 agencies which authorize and administer loans, located throughout 7 regions, operate as field offices for BANDESA.

The cooperative movement also contributes to filling the housing need in rural Guatemala. The federations of cooperatives that represent credit unions and agricultural cooperatives, the National Federation of Credit Unions (FENACOAC) and the Federation of Regional Agricultural Cooperatives (FECOAR) constitute 85% of all legalized cooperatives.

FENACOAC, with regional offices and storage facilities in three urban centers outside Guatemala City, provides its members with credit, savings, insurance, administrative and accounting assistance, education, fertilizer supply and marketing services. In contrast, very few of the loans made by FECOAR cooperatives are for shelter needs. However, two FECOAR cooperatives have undertaken housing programs financed by BANDESA with Inter-American Development Bank funds.

There are about 90 construction firms registered with the Guatemalan Chamber of Commerce, the majority of which have the capability to work in housing construction. The firms are concentrated in the Guatemala City metropolitan area but only about 10 of them have experience with large scale housing projects. (The Guatemalan Chamber of Commerce should be contacted for current information on construction firms. See also Disaster Resources.)

Engineering analysis indicates a dangerous lack of construction industry standards, especially building codes and specifications. Among them: widespread failure to use non-structural masonry walls in reinforced-concrete framed structures (vulnerable to lateral loads and displacement); lack of reinforced-concrete columns (framing masonry vulnerable to collapse); preference for buildings with heavy parapets (extremely dangerous to people at street level). The recommendation from the US Geological Survey on 2/76 quake is adamant: adopt and enforce minimum standards for structural reinforcement, regardless of the material used.

Note: In rural highland areas, most families traditionally constructed homes of materials produced (adobe) or gathered (wood) by family members. Only roofing was likely to be purchased.

3. Disaster/Low Cost Housing

Most damage from the 1976 earthquake and previous earthquakes was due to the collapse of massive adobe brick walls and heavy tile roofs. Also, deaths resulted when squatter homes, built on ravine slopes, slid down following earthquake-induced landslides. The earthquake was characterized as "class conscious" in two respects:

- the poor lived in the most vulnerable areas, and therefore were most adversely affected;
- low-income individuals were the least able to afford the quality of construction which would ensure survival of their dwellings.

As a result of the earthquake of February 4, 1976, 258,000 housing units were damaged seriously or destroyed, 58,000 in Guatemala City alone of which 80%, about 46,000, are estimated to have belonged to the urban poor. Many of these units were already included in the housing deficit, but it is clear that the housing problem has been seriously aggravated by the earthquake. Since the earthquake, several large housing reconstruction loans have been made to Guatemala, as shown below.

Institution	No. of Units	House Sales Price $	Time Frame
*1. BANVI-WORLD BANK Sites-Services	10,000	1,400 to 3,600	77-79
*2. BANVI-International Agencies, e.g. Church World Services	3,700	2,500	76-78
*3. BANVI-GOG Self-Help	555	1,000	76-78
*4. BANVI-GOG	5,000	1,800	76-78

Institution	No. of Units	House Sales Price $	Time Frame
*5. BANVI-GOG Various Projects Outside City	1,100	1,600 to 3,000	76-78
*6. BANVI-CABEI	2,000	3,000	76-78
7. BANVI - Justo Rufino Barrios	200	5,500	77-78
*8. BANVI Bello Horizonte	880	6,500	77-78
9. BANVI El Tesoro	220	9,500	77-78
10. BANVI Individual Credits	800	2,000-6,000	76-78
11. Banco Granai & Townson			
Project 1)	355	16,000 to 32,000	
Project 2)	60	28,000 to 59,000	77-78
Project 3)	280	29,000 to 59,000	77-79
12. Banco Inmobiliario			
Project 1)	2,000	13,000 to 40,000	76-78
Project 2)	1,200	20,000	79-80
13. Banco International			
Project 1)	216	19,500	77-78
Project 2)	60	60,000	77-78
Project 3)	800	42,000	78-80
Project 4)	400	40,000	78-79

* Reconstruction Loans

Project 5)	120	65,000	78-80

Source: USAID, Office of Housing. Project Paper ROCAP--Urban Shelter Improvement 1978

For the reconstruction effort, the GOG decided to use the institutional framework already in place. BANVI and BANDESA took primary responsibility for the execution of the reconstruction program in housing. A substantial role was also planned for FHA and private banks. FENACOAC requested assistance from BANVI and BANDESA and purchased construction materials (roofing, concrete blocks and lumber). FECOAR purchased sheets of roofing for its members. The World Bank and Inter-American Bank channelled their loans through BANVI and BANDESA. In addition, the Penny Foundation (Fundacion del Centavo), a non-profit foundation whose objective is to assist in rural and urban development in Guatemala, sought donations for a home improvement program in rural areas.

The GOG adopted the following policy with regard to shelter reconstruction:

- The effort should be labor intensive and directed toward the re-establishment of small dwellings or enterprises destroyed or made inoperative by the earthquake.
- Provision of potable water, health services, electric power (especially for small establishments and domestic lighting), communication, and public transportation in low-income settlements should take priority.
- Low cost shelter should be within the financial reach of the poor.

Problems encountered in the shelter reconstruction effort were as follows:

- Earthquake occurred in the middle of the harvest season. As a result, many farmers were more concerned with gathering and marketing crops than with rebuilding or repairing their houses;
- Campsites did not permit people to be near their houses and livestock and many individuals did not want to leave what remained of their property unprotected. Therefore, many camps were not occupied;

- There was a failure to match casualty and damage statistics with relief supplies;
- Timber and adobe dust swept aside as rubbish should have been used as rebuilding materials, especially in lower income areas;
- Land tenure patterns and general settlement patterns were not observed in reconstruction projects.

However, several positive aspects emerged to balance the problems. Co-ops were utilized successfully to distribute relief supplies, especially to lower income individuals and families. The self help approach and sale of materials at subsidized prices (to prevent "handout" dependency) encouraged full participation of the population in the reconstruction effort.

In additon to the reconstruction projects mentioned, a $40 million urban reconstruction project was considered, utilizing a $2 million contribution from each of the other Central American countries, $3 million from CABEI's resources, $10 million from the IDB Social Progress Trust Fund and a $19 million HG loan from AID. After prolonged negotiation, it was determined that the IDB funds were not available.

However, a housing guaranty loan to the Central American Bank for Economic Integration (CABEI), augmented by funds from other Central American countries, was utilized by BANVI (National Housing Bank of Guatemala) for several construction projects: apartment units in Guatemala City; cooperative projects in the capital and secondary cities; and individual units on property already indlvidually owned by families in the capital and secondary cities.

The basic concrete frame design of these units incorporated seismic resistant features and the project was not located over any known faults. All proposed designs were evaluated for their seismic resistant features.

4. Housing Types, Materials, Construction and Services

In rural areas, housing typically consists of one room, covered by thatching. The floors are generally earthen, and the walls are built of cane and mud plaster or adobe. Services are lacking, with only 9% of rural housing having access to piped water, 40% to electricity, 10% to latrines.

Urban housing is characterized by concrete slab or corrugated asbestos cement-sheet roofing (although the second material is not accepted by the FHA). Walls are fabricated of clay blocks with "mochetas" or light columns

of steel rods and concrete filling the clay block cavities. The wall is capped by a reinforced concrete tie beam. Floors are concrete slabs covered with cement floor tiles in the living areas and with ceramic tile in the bathrooms. Concrete is utilized for footings, while typical windows are iron framed glass; doors and door frames are wood. Squatter settlements and lower income housing are constructed typically of adobe, which is especially vulnerable to earthquake damage.

TYPICAL MATERIALS FOR RURAL AND URBAN HOUSING COMPONENTS

	Rural	Urban
Roof	- thatched with paja (straw) in highlands or palma (palm leaves) in eastern region; used by min ity of population	- concrete slabs
		- duralite (corrugated asbestos-cement panels); not accepted by FHA
	- tile (1000-3000 tiles at a cost of Q20 - Q30 per 1000 tiles)	- tile cardboard or lamina for squatter settlements
	- lamina - corrugated steel sheeting galvanized with zinc	
Walls	- adobe bricks (mud, straw, pine needles)	- clay blocks with "mochetas" (light columns of steel)
	- cane; walls made of cornstalks, lined up and bound together (considered low prestige and used only by people who could not afford more expensive material)	- unreinforced adobe for squatter settlements; also, cardboard and wood
	- bajareque; walls made with rows of cane or wood filled with mud	
	- cement block (high prestige: very few houses)	
	- no corner posts with exception of cement	

	Rural	Urban
Floor	- earthen	- concrete slabs covered with cement floor tiles in living areas and with ceramic tile in the bathroom
		- earthen for squatter settlements.
Window	- open air, may be barred or shuttered; highland Indian houses often windowless	- iron framed glass
		- open air for squatter settlements.

In 1976, the overall material supply was about equal to the total construction demand. Total installed cement production capacity was more than adequate; however, sand and stone production were pressed. Precast concrete supply was less than the demand, and lumber has been scarce.

INSTALLED CAPACITY AND INDUSTRIAL PRODUCTION
OF THE PRINCIPAL CONSTRUCTION MATERIALS
1974

Materials	Production Volume		Value	Installed Capacity	Use of Capacity (%)
Dimension lumber	85,648	B.F.	11,309	100,000	85.6
Plywood	550,500	m^2	900	847,000	65.0
Boards of various widths	230,800	m^2	532	355,000	65.0
Cement	319,879	tons	10,914	460,000	69.5
Lime	36,480	tons	1,322	40,000	91.2
Aggregate	596,000	m^3	1,814	800,000	74.5
Common brick	6,669,000	units	121	8,500	78.5
Hollow bricks or clay tile	22,264,000	units	976	32,000	69.6
Clay tile	932,000	units	14	1,200	77.7
Cement flooring	421,000	m^2	755	525,000	80.2
Ceramic tile for walls and floors	282,500	m^2	765	480,000	58.9
Concrete blocks	7,534,000	units	965	11,000	68.5
Asbestos cement sheet	1,590,800	m^2	1,973	2,200,000	72.3
Asbestos cement pipe	277,300	m^2	614	465,000	59.6
Cement pipes	365,700	units	527	450,000	81.3
Cement laundry trays	3,342	units	26	4,600	72.7
Reinforcing rods	17,149	MT	7,030	35,000	49.0

Materials	Production Volume	Production Value	Installed Capacity	Use of Capacity (%)
Galvanized sheets for roofing	20,500 MT	6,455	28,000	73.2
Iron or steel pipes	8,400 "	5,149	11,800	71.2
Steel joists and trusses	7,500 "	5,600	12,000	62.5
Iron frames for doors and windows	675 "	565	1,050	64.3
Aluminum frames for doors and windows	1,600 "	1,680	2,200	72.7
PVC piping	1,080 "	1,210	1,600	67.5
Paint	4,400,000 liter	5,058	7,000,000	64.0

Source: AID, Office of Housing, Shelter and Related Development in Guatemala: Analysis and Recommendation for AID Support, May 1976.

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