



HARVARD GRADUATE SCHOOL OF DESIGN
UNIT FOR HOUSING AND URBANIZATION

RABAT'S URBAN FRINGE

Text by Mona Serageldin

Research and Documentation by:

Doum Case Study - Samir Abdulac

Field Survey - Fathallah Debbi

Urban Context - Agnes Deboulet

Housing Policy and Land Development - Mona Serageldin

Research Assistants - Isabelle Guetta

Jennifer Wayne

Graphics - Hung-Song Oh

Production - Randa Tukan

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RABAT'S URBAN FRINGE

I. National Background.

1.1 Geography and Climate.

Morocco is located at the northwestern corner of Africa. Its long coastline stretches from the Mediterranean Sea, across the straits of Gibraltar and along the Atlantic Ocean to the edge of the Southern Sahara. It consists of five highly diverse regions:

- the foothills of the Rif Mountains, along the Mediterranean coast;
- the fertile plateau and plains bordering on the Atlantic Ocean;
- the eastern plateau stretching to the edge of the Moulouya depression at the foot of the Atlas Mountains;
- the Atlas Mountains separating the arid southern areas from the humid northern coast;
- the hot, arid southern region at the edges of the Sahara Desert.

Geographic location and latitude endow coastal plains with a humid temperate climate; summers in the southern region are hot and dry and winters in the mountainous regions are cold enough to sustain a snow cap. Sedentarized and nomadic Berber tribes predominate in the mountain areas while the farmers in the fertile coastal plains are mostly of Arab descent.

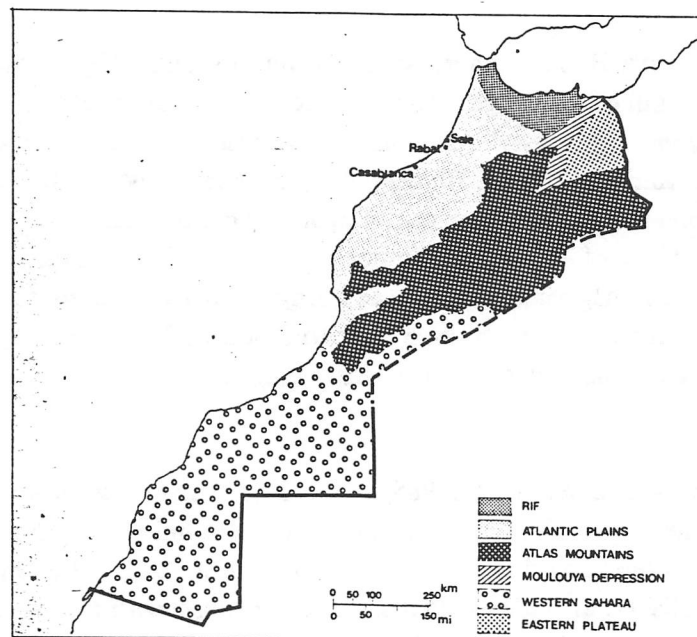


Figure 1 - Morocco: Geographic Regions

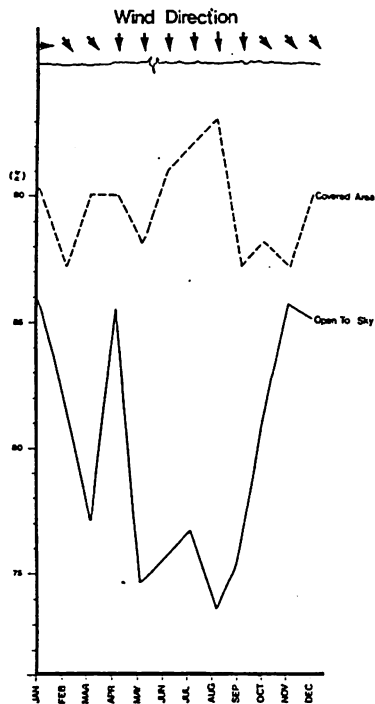


Figure 2 - Relative Humidity

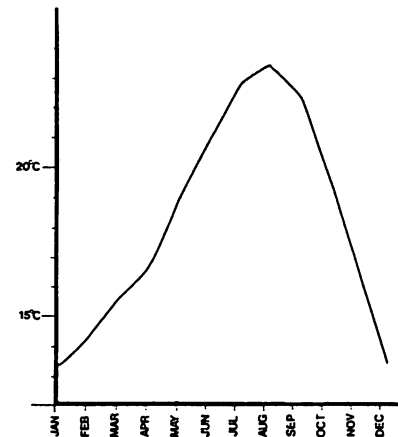


Figure 3 - Average Temperature

1.2 History.

In the 6th century B.C., northern Morocco was dominated by Carthage (near modern Tunis). In 42 A.D., after the fall of Carthage, Morocco became part of the Roman Empire. Roman control did not extend beyond the coastal zones and Berber nomadic tribes roamed the interior and the mountain ranges unhindered. In the 7th century, the Arabs wrested the eastern mediterranean and north African regions from the Byzantines. Egypt was conquered in 641. From Alexandria, armies overran the coastal cities of Tripolitana (modern Libya) and took over Tunisia in 670 A.D. From there, they swept across Algeria and Morocco along the coastal plains and the foothills of the Atlas Mountains. From Morocco they crossed over to Spain in 711. Thus, by 700 A.D., Arab Islamic culture had spread over the entire north African region.

The Shi'i Idrissid dynasty (799-985) marked the emergence of an independent Islamic state in Morocco with the city of Fez as its capital. The Fatimids united north Africa under a Shi'i Caliphate and moved the capital to Cairo in 969. A century later a Berber dynasty, the Almoravids (1061-1147), reestablished an independent state in Morocco with a new capital, Marrakesh. After the fall of the Umayyad Caliphate of Spain, the Almoravids extended their control to southern Spain. The Arab-Andalousian civilization permeated throughout Morocco and has largely influenced its culture, arts and architecture. Spain was progressively reconquered by the Christian forces during

the Almohads (1147-1269). Only the small kingdom of Granada remained until 1492 when many of the Andalusian Arabs were deported to Tetouan.

From the 13th to 19th centuries, Morocco was virtually independent and governed by a succession of local dynasties, the Marinids from the 13th to the 15th century, the Sa'adians (1554-1660) and the Alawites from 1660 to the present. Remote, marginalized within the Islamic world dominated by the Ottoman Empire, by-passed by international trade, Morocco was forced to open its borders to European traders. This paved the way for western economic and political domination in the 19th century and facilitated the French conquest in 1906. In 1912, Morocco became a French protectorate except its northwestern province, the Ifni Territory, which was assigned to Spain. General Lyautey instituted a strong French colonial administration; but after World War II, the nationalist movement led by the Istiqlal party gathered strength forcing the French to reinstate the exiled Sultan. Finally, sustained popular opposition and the rising tide of nationalism won independence from France in 1956. Since then, Morocco has been governed by a constitutional monarchy.

1.3 Economy.

The Moroccan economy is still dominated by the agricultural sector which employs 46% of the labor force but accounts only for 13% of a gross domestic product (GDP) that was valued at Dh 154.3 billion in 1986.¹ The sector comprises both small traditional farms under a variety of tenure arrangements planting cereals, vegetables and fruits and larger estates in individual, joint or cooperative ownership inherited from the colonial plantations of grapevines, olive trees, citrus groves and orchards producing export crops using modern techniques of cultivation.

The industrial sector started to develop during the second World War. Extractive industries (mostly phosphate, but also iron and manganese) were the only ones of interest to colonial powers. In the decade between the end of World War II and 1954 foreign investments increased by a factor of three, but only light industries were established, mainly textiles, food processing, fisheries and phosphate processing. Independence triggered an outflow of foreign capital and policies, relying on the private sector, failed to strengthen and diversify the nascent industrial sector. The inability of the country to attract foreign investment led policy makers to look to other sectors to sustain economic growth. The 1965-1967 Plan focused on agriculture and tourism and set manpower training as a priority to generate a labor pool with the skills required to support economic development.

¹ See Statistical Appendix for additional economic and demographic data.

The tripling of phosphate prices in 1973 and the resulting sharp increase in export revenues encouraged the government to pursue ambitious investment policies and industrialization programs. By 1988, the industrial sector accounted for 23% of the GDP and provided employment for 18% of the labor force. But trade and services, inclusive of public administration, continued to dominate the urban economy and jointly accounted for 60% of the GDP, reflecting the importance of tourism in the national economy.²

In the late 70s, phosphate prices tumbled, but industrialization programs were not curtailed. Consequently, oil imports continued to increase and had to be financed by foreign borrowing. By 1978, the government adopted a three-year stabilization program in order to cope with a rising foreign debt and worsening fiscal and balance-of-payments deficits. The program called for reducing public expenditures and imposing import controls. Despite these measures, the 1980s have witnessed a further deterioration of the situation. The growth rates of both industrial and agricultural production declined and the value of the dirham dropped by half against the dollar and major European currencies between 1978 and 1987. Limited resources and higher prices of imports preclude any relaxation of the austerity measures. The government has further curtailed public expenditures in an attempt to reduce the deficit and contain the growth of the foreign debt. (Debt service currently consumes close to 1/3 of export earnings.) In the short term, these retrenchment policies are bound to affect investment, limit employment growth and can therefore trigger social unrest exemplified by the bread riots ("les journées du pain") in 1983.

Since the beginning of this century, Morocco has undergone an economic transformation which resulted in substantial changes in the structure of its labor force. The coastal corridor, where most of the population, industry and modern agriculture are located, has experienced the most profound changes. Today, 75% of the urban labor force works in the private sector and 40% are self employed; small-scale entrepreneurs, artisans or traders.

From 1978 onwards, the impact of the recession started to be felt. The rate of growth of the economy fell to an annual average of 2.9% barely keeping up with population growth. Incomes stagnated. In real terms, the G.N.P. per capita at \$600 in 1985 was practically unchanged from its 1977 level. Rapid population growth, sluggish industrial development and massive rural-urban migration have led to the emergence of a floating proletariat seeking casual employment as day laborers. This group, estimated to account for 25% of the urban labor force consists mainly of young people 15 to 24 years old with no stable job and no regular income. They drift around in the informal sector shifting between productive and unproductive occupations.

According to World Bank estimates, the median household income in 1987 was 2380 dirhams (\$250 per month). An estimated 40 to 45% of Moroccan households cannot secure decent sanitary housing on the open market.

² Ministère du Plan, *Le Maroc en chiffres*, 1988.

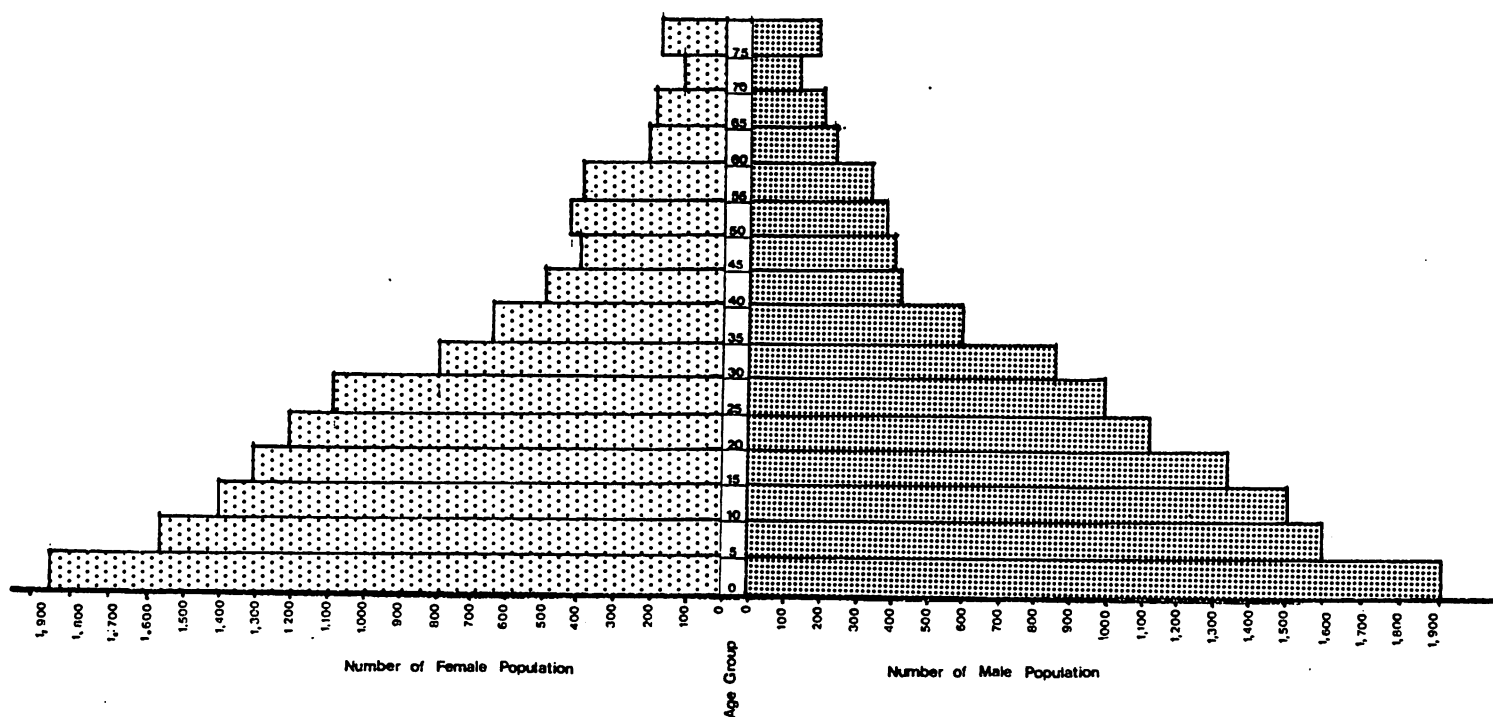


Figure 4 - Age-Sex Structure of the Population, 1988

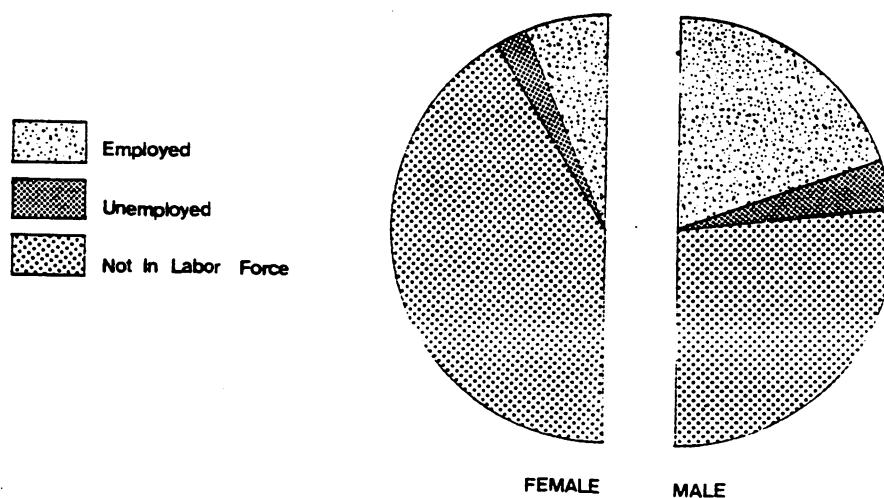


Figure 5 - Economically Active Population, 1985

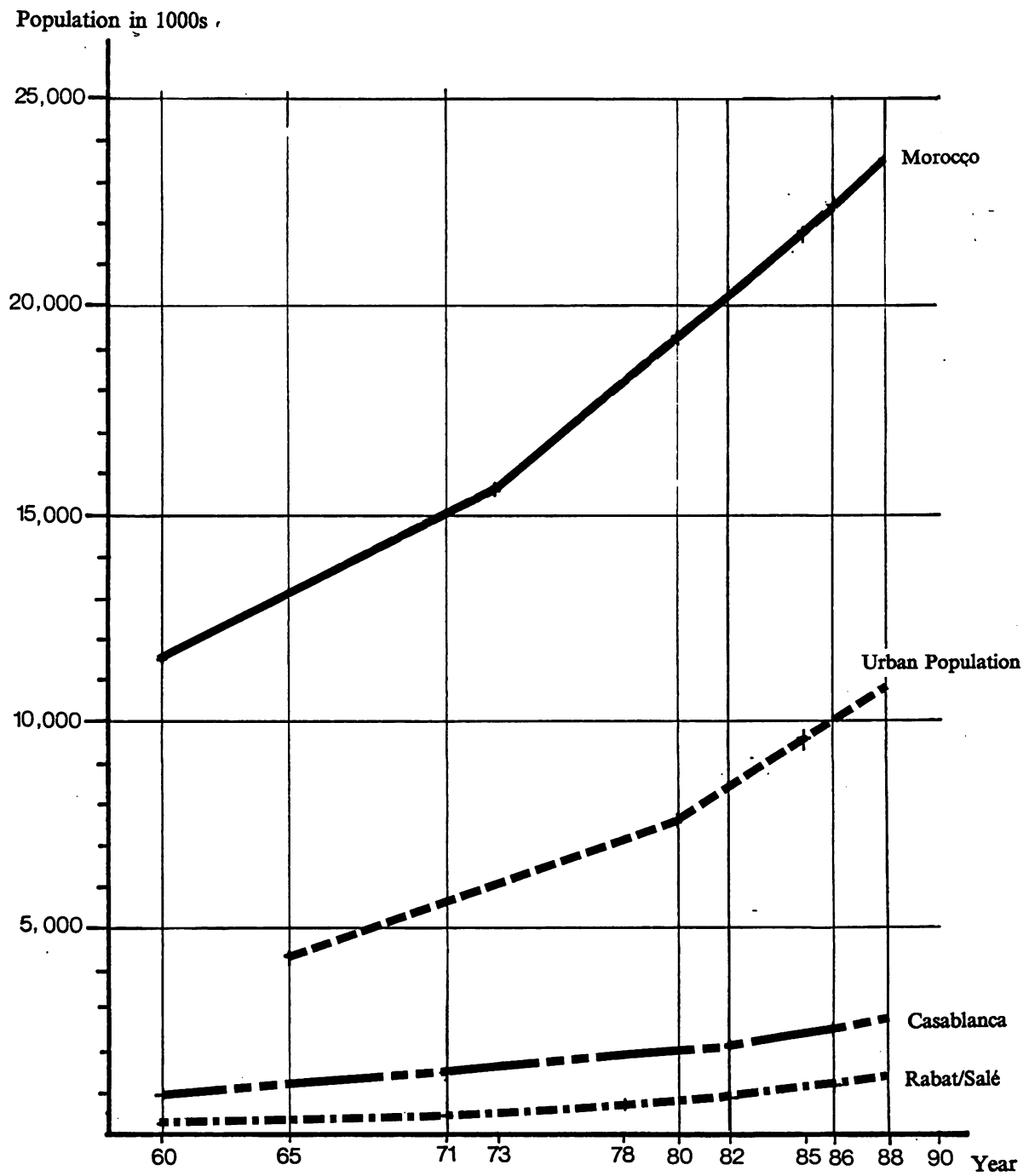


Figure 6 - Population

II. The Process of Urbanization

2.1 Urban Growth.

In 1988, Morocco's total population was 23.9 million growing at a rate of 2.6%. Since the beginning of the century, in a matter of four generations, the urban population has increased by a factor of 15. The process was sparked by the dislocation of traditional agriculture systems during the colonial period and the displacement of masses of rural laborers. European "colons" acquired large estates and intensively farmed them for the production of export crops. The post-war industrial boom in the cities and the economic depression in the rural areas (the income of the *fellahs* (agricultural laborers) fell by 60% in four years) sent waves of rural migrants to the cities in search of employment.

The proportion of the population in urban centers rose from 35% in 1968 to more than 45% in 1988 and is projected to reach 60% by the end of the century, making Morocco one of Africa's most urbanized nations. In the last 20 years, growth has tended to slow down, declining from 5.4% in 1968 to 4.4% in the 1980s. Still it remains very high as an annual increase of 4.4% implies a doubling of the population every thirteen years. This is due to the combined effect of a very high rate of natural increase and unabated rural-urban migration which is estimated to account for about 40% of population growth in the urban areas. Economic opportunity and wage differentials sustain this outmigration from the countryside. Urban wages are, on average, 30% higher than rural wages and about 67% of the Gross Domestic Product is generated in the cities.

Unemployment, underemployment and housing shortages are acute problems in the fast-growing urban centers. The inability of municipalities to cope with the influx of rural migrants has resulted in the emergence of "bidonvilles", shanty towns, opportunistically located across the urban landscape, while development pressures have generated dense, poorly planned and un-serviced informal districts at the fringe.

History and economy have combined to give Morocco a relatively well-balanced distribution of urban centers. The coastal region, from Kenitra to Safi, is the wealthiest part of the country. The majority of Morocco's population, industry, cash crop agriculture, its largest cities and ports are located in this region. The region is the most densely settled and receives the bulk of the rural migrants.

The dominant economic center of the nation is Casablanca with a population of 2.15 million. Commercial and industrial activities are concentrated there. The political and administrative center is Rabat with a population of 810,000. It is Morocco's capital city and the seat of its government. Anchored by the two largest cities and well-serviced by port, rail and highway systems, the Rabat-Casablanca corridor was bound to become the most dynamic development zone in the nation. Yet, a new trend is emerging: the rate of growth of the large cities has tended to decline.

Middle-sized cities are experiencing rapid growth in response to the modernization of agricultural production, the decentralization of industrial development and the expansion of their service sector.

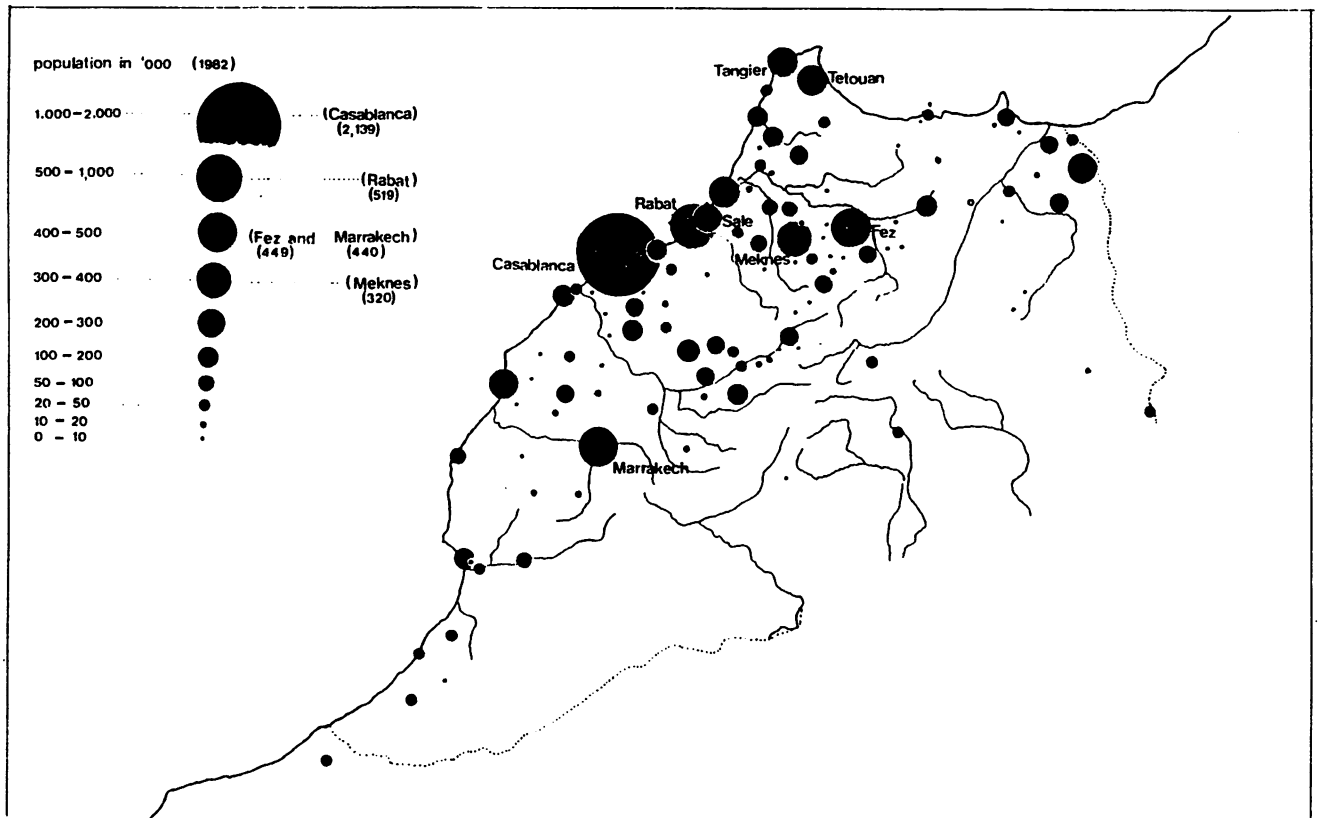


Figure 7 - Distribution of Urban Settlements

Growth rates vary widely and depend on size, location and history. The smaller dynamic cities - first along the coast with populations under 150,000 and, more recently, in the interior - have experienced growth rates of up to 10% per year (e.g., Safi, Oujda, Kenitra). The larger, traditional and royal cities (e.g., Fez, Marrakesh, Meknes) with populations of approximately 300,000 inhabitants have been growing at 3 to 4% a year.

2.2 Urban Development Policies.

In 1912, the French architect Henri Prost was given the responsibility to develop urban plans and design guidelines for the colonial administration. Two related policies guided his approach: the maintenance of the old medinas and the development of adjacent colonial extensions, the New Towns. This segregationist view strongly differentiated the new towns, exclusively designed and re-

served for European settlers from the medinas housing the indigenous population. Western planning methods, high design standards and expensive utility systems were applied in the new towns while the medinas were maintained but not upgraded as they ought to have been; they absorbed more population through a densification of the built environment without adequate support infrastructure, a situation which could only accelerate their deterioration.

In the late 1920s, the squatter settlements within the urban perimeters were demolished. Displaced populations re-established themselves on the outskirts of the cities, thereby creating belts of new settlements encircling the older districts. By the end of World War II, the problems of the urban poor could no longer be ignored.

Social unrest with political overtones forced the colonial administration to give some attention to the needs of the Moroccan population. In 1946, Prost's successor, Michel Ecochard, recognized the necessity to formulate a comprehensive urban development framework which included coherent policies regarding the accommodation of limited income groups and, in particular, rural migrants. His concepts included the delineation of migrant reception zones and the construction of large-scale low-cost housing projects (*habitat économique*).

However, demographic pressure overwhelmed his efforts. Municipal authorities failed to effectively control the urban fringe while the Economic Housing projects, invariably relegated to peripheral locations, provided an impetus for bidonville development in adjacent areas. His projects, laid out on an 8 meter by 8 meter grid system, had a long-lasting impact on the urban scene in Morocco. To implement a policy of decentralized urban expansion, he instituted planning procedures, land management systems and legislation for expropriation by eminent domain to create land reserves and regulate development processes.

After independence, the government formulated ambitious social policies, but the economic crisis of the 60s and early 70s hampered their implementation. The basic needs approach adopted by international organizations oriented Morocco's urban policy towards the recognition of the rights of bidonville inhabitants to decent sanitary shelter and advocated on-site rehousing schemes to avoid displacement and dislocation of squatter communities. But it is only in the 70s that such concepts were actually implemented.

The Ministry of Housing and Land Development was established in 1971 and prepared the urban programs for the 1973-77 Development Plan. After 1973, the availability of funds revived interest in urban projects. The programs were expanded and included both public housing and sites and services projects. The ambitious targets were not fully achieved. Only one-third of the projected 120,000 housing units were actually built. Nevertheless, this large-scale effort has had a major impact on the country's urban policies. Housing for limited income groups became the major component of urban improvement programs. The institutional framework for planning was restructured. In 1977, the Ministry of Housing and Regional Development was reorganized and a

research institute (CERF) was created to study methods of improving low-cost housing production.

The 1978-82 Development Plan reflected the realities of the economic downturn: the urban component focused on upgrading of existing slums and squatter settlements. The urban development plan (P.D.U.), developed with World Bank technical and financial assistance, underscored this concern with avoiding displacement of inhabitants in squatter and informal areas. It aimed to:

- legalize tenure;
- build infrastructure systems and community facilities;
- provide credit for home improvement irrespective of whether the work is carried out through self help or contracted labor;
- create job opportunities by establishing industrial zones close to the larger concentrations of informal settlements.

From 1981 onwards, a more focused approach concentrated on lowering the cost of urban development as well as on improving cost recovery mechanisms for housing and infrastructure. The underlying rationale was that the combined effect of lower capital requirements and higher rates of recovery of development costs would make programs and projects affordable and, therefore, replicable, leading to a widespread improvement in urban living conditions. These same concepts were applied to the rehabilitation of medinas and other older districts. The new programs entail fundamental improvements in urban management capabilities and a greater sensitivity towards the urban architectural heritage.

In 1983, a new national agency, ANHI, was set up to halt the spread of substandard housing. It is responsible for all upgrading activities, sites and services and relocation projects. Inadequate funding and the dearth of land suitable for low-cost housing projects is hampering its operations.

2.3 Policies for Urban Development.

Urban development policies have had to address a variety of issues:

- Pressing current needs and problems;
- The consequences of the past and prospective evolution of existing urban zones;
- Anticipating the direction and requirements of future growth.

There have been few attempts to formulate a comprehensive set of strategies to deal simultaneously with the problems of urban growth and housing shortages.

Ecochard's plan for Rabat in 1950 was the first urbanistic scheme to bring together a land use and infrastructure plan and a housing program. The deliberate creation of development nodes around industrial zones at the urban periphery served to channel growth into planned new residential districts within the nodes and along the axis linking them to the main agglomeration. The modular approach to low cost housing and the design of an expandable core unit allowed the rapid construction of projects from 1953 to 1955 for the relocation of nearly bidonville residents.

The preemption of these projects by groups other than their intended beneficiaries did not invalidate the conceptual approach. It indicated the existence of a more acute housing shortage affecting a broader segment of the population whose needs remained unmet.

The 1968-1972 Five-Year Plan introduced the concept of upgradable urban zones for households with incomes below 200 dirhams per month. The deferred infrastructure investment program aimed at correlating density of settlement, level of infrastructure services and residents' ability to pay. Urban extension zones (ZEP = zones d'expansion planifiée) were designated with reference to the expected rate of progressive servicing by utilities over 5 (ZEP 5) to 15 years (ZEP 15). The strategy proposed by the 1973-77 plan built upon the Ecochard experience and widened the scope of government intervention in the housing sector to meet the demand of large segments of the middle classes which had largely been ignored by private developers. Low-cost projects (HBM) were to channel urban growth to desired sectors. Government owned land in the vicinity, which could be serviced using the same trunk infrastructure, would be used for social housing projects and resettlement of bidonville residents.

The deferred infrastructure investment program provided a mechanism to release unserviced and partially serviced plots that superseded the subdivision regulations issued in 1953 which mandated full servicing of the land to be subdivided. Production doubled from under 20,000 units in 1973 to over 44,000 in 1977. To ensure affordability the financial package entailed cost recovery ranging from 70% in ZEP 5 to 40% in ZEP 15. Minimizing non-recoverable outlays implied meeting ZEP 5 demand first then working out to ZEP 15 at later stages. The curtailment of the program in 1978 and its reactivation in 1981 to deliver only serviced plots (with or without sanitary cores) has per force reduced production. Bidonville residents and rural migrants must look to the informal sector for their housing needs.

In the 80s, the emphasis on rehabilitating Medinas and upgrading fringe settlements did not address the fundamental causes promoting the spread of unregulated development. Despite their social merit these projects could neither guide nor control urban growth.

The control, since the early 1950s, of land acquisition, site development, and housing finance by the central authorities, has focused their efforts in the urban sector on project planning and execu-

tion rather than on policy formulation, the coordination of development and the supervision of program implementation. Economic recession and budget cuts are forcing a rethinking of the government's role. Greater reliance on the private sector is now advocated. Government sponsored programs seek to foster private participation and public-private partnerships. Unfortunately fiscal and regulatory measures have yet to be used as instruments of urban development policy.

Nevertheless, broadening the spectrum of economic groups served by individual programs and improving the physical integration of program elements and components are positive aspects in program planning and design. After all, segregation of activities and narrow targeting of beneficiaries have never really been in the Moroccan tradition.

2.4 Land reserves and land acquisition by the public sector.

The National Land Agency was established in 1982 to record and monitor the status of vacant land in public ownership located within the urban perimeter or the designated peripheral zones of municipal jurisdictions. The administration of the land remained with the authorities to whom it belonged: the State, the Habous, the municipalities, the subunits of local government (communes), the army and various public authorities. The Directorate of Public Lands (Direction de Domaines) continued to be in charge of acquiring land for the state to meet the spatial and locational requirements of utilities, public services and low cost housing.

As part of its urban development program in Morocco, the World Bank has established a line of credit for land banking purposes. But in the absence of overall plans defining a framework for future growth, land acquisition will remain an expedient used opportunistically for project implementation rather than an instrument used deliberately to implement development policy.

The complexity of the land tenure system and the coexistence of the traditional recording of transactions with the courts (*adoulia*) alongside the modern registration of titles with municipal authorities (*immatriculation*) have complicated land acquisition procedures. Unclear titles and the multiplicity of claimants to various property rights make negotiated agreements difficult and time consuming.

The marked appreciation in land values since 1973 has introduced a constraining economic dimension. Caught between counter appraisals, inflated claims, third party liens and the cost of unpredictable delays, the Directorate of Lands has increasingly turned to appropriation by eminent domain.

Superceding the 1951 legislation, a sweeping law was enacted in 1983. The intent was to overcome cumbersome and lengthy procedures which jeopardized the implementation of development projects including infrastructure and housing.

Focusing on the property rather than the parties involved, the new legislation has managed to:

- compress the time between the certification of a public interest objective and the expropriation decree from 2 to 3 years to 2-3 months
- give the project agency immediate control of the appropriated land since the expropriation order cannot be appealed. Only the appraised valuation of the property can be challenged.
- litigation arising from grievances regarding compensation or disputes among holders of various property rights and liens can proceed without interfering with project implementation.

The sharp rise in land values since 1973 has put premium on public land on the urban fringe which municipalities could acquire at half the cost of privately owned land. In 1985, there were 10,000 hectares of undeveloped land in government ownership, mostly located on the fringe of urban centers. Remoteness, topography, soils or designation for alternative uses limited the area which could be released for urban development. Available reserves thus fall far short of the estimated 80,000 hectares required for future expansion. It is unrealistic to assume that the gap will be bridged anytime soon. Currently 500 to 700 hectares are purchased annually but the average cost per hectare has escalated from Dh 137/ha in 1983 to Dh 310/ha in 1985. There is an urgent need for:

- a rational and coordinated strategy for urban development;
- a more efficient use of land in residential projects;
- realistic pricing and cost recovery formulas;
- restraints on the speculation usually associated with new projects;
- promotion of innovative approaches to housing development drawing on the very mechanisms which sustain the dynamic informal sector.

2.5 Land development processes.

Land subdivisions must in theory conform to the guidelines stipulated in master plans, subdivision regulations and building codes. Only serviced building plots can be legally marketed. The intent was to control speculation on urban real estate and replenish local revenue. Titles to illegally subdivided land cannot be registered with municipal authorities, neither can permits be

issued to buildings on such plots. Housing finance mechanisms whether for short term construction loans or long term mortgages require that titles be registered.

Fees charged for the registration of titles are scaled in proportion to an assessed value based on the sales price. Rates have progressively increased since the 50s. A tax on real estate profits at a rate of 15% was instituted in 1978. It is collected on all transactions (sales, exchanges, conversions, subdivisions, etc.) The tax must of course be paid by the seller but in reality it is passed on to the buyer by jacking up prices. Interestingly a tax on vacant land also instituted in 1978 was quickly rescinded. The release of land for urban development would have helped restrain speculation. However, the experience of marketing partially serviced lots was equally short-lived.

Development pressure, obsolete plans, lagging infrastructure and housing shortages have progressively eroded the ability of local authorities to control urban expansion and forced them to tolerate informal subdivisions. Municipalities have thus lost both the control over their own development and the revenue derived from it. Real estate taxes, plot charges and other fees cannot be levied on property which has no legal status.

This situation has undermined the effectiveness of all regulatory and fiscal instruments enacted to manage the urban land markets.

2.5.1 The role of housing agencies. The various public and semi-public agencies implementing large scale housing (CGI, ERAC, SNCI, SOCOPAR, OLM, ONCF) have continued to offer fully serviced plots differently sized for specific target groups. High land development standards reflected well the aspiration of their middle class constituency but in the process consumed large amounts of public land. They have commandeered state lands for their large scale projects but failed to account for the cost of this valuable resource. The land reserves accumulated in the 50s and 60s were being depleted at a fast rate in the 70s and funds to replenish them were sorely lacking.

Over 60,000 plots have been allocated at highly subsidized or token prices mostly to middle income beneficiaries many of whom promptly resell the lots at market value thus reaping windfall profits to the detriment of the State. The long term consequences of non-recovery of land costs were compounded by the inability to recapture the appreciation in value due to public action. Public projects triggered a wave of speculative investment in surrounding areas. Land values in the impacted zones rose by a factor of 3 or 4 in no time. When acquiring parcels for public purposes in such areas the government discounts half the appreciation in excess of 20% as speculative. Yet this awareness has not been translated into effective taxation of all impacted land.

2.5.2 The role of private developers. Local private builders operate at various locations on a limited scale. They usually develop housing projects of 10 to 30 dwelling units. They are active in spot redevelopment in the Medinas, the central districts and legalized settlements and bidonvilles.

Since the 70s they have taken the lead in the informal market. They buy large tracts in outlying zones at prices below Dh 10/m² and hold the land until the area is ripe for urbanization. At the appropriate time, the tract is subdivided and minimal services provided: streets of varying widths; water supply from wells; on site disposal of untreated waste water. The land platting ensures that 70 to 75% of the tract's area is saleable. The land disposal strategy is to sell first smaller plots and back lots at lower prices (Dh 150-300/m²). The best parcels are held in reserve until population and activities build up. By then, land values would have doubled.

To attract buyers, developers offer credit by allowing immediate occupancy against a down payment. The buyer can then start construction without delay and settle the balance in installments over 2 to 3 years. He would be already living in his new house by the time his land is finally paid for. Nevertheless, developers would still be making an annual return on investment of 20%. The social cost of the venture is conveniently passed on to the public as municipal authorities will eventually have to retrofit a densified settlement at high cost.

III The Housing Sector

In the early 1980s, 25% of the existing urban housing stock consisted of substandard shelters in slums and squatter settlements and another 15% were old and dilapidated structures in the Medinas. In addition, about 50% of the urban households lacked direct access to piped water supply, 30% did not have electricity and 45% had no sanitary installations. Deteriorating and overloaded utility networks and inadequate services are severe problems in the populous districts. Nationwide, the current housing deficit is estimated to range from 700,000 to 900,000 units and the gap between supply and demand continues to increase.

Rapid urbanization, rigid development strategies and timid housing policies have led to the proliferation of squatter settlements and semi-urbanized douars where rural migrants and the urban poor live in makeshift shelters and shacks. 25% of the urban population lives in these areas which are growing twice as fast as the overall rate for urban centers. The larger settlements constitute quasi-autonomous entities with up to 100,000 inhabitants.

The first squatter settlements appeared at the beginning of the century, but their rapid expansion occurred in the 1930s. Paradoxically, the largest settlements grew from attempts by colonial administrators to contain and control the unruly migrant populations by grouping them geographically. But most others grew spontaneously at locations selected for their unsuitability for conventional development and their proximity to employment opportunities, particularly casual work sought by recent migrants. These locational choices constrained potential expansion of individual settlements and implied that population spill overs had to be accommodated elsewhere: in deteriorating medinas, peripheral shanty towns or small bidon-villes embedded within the urban fabric.

In the last 20 years, informal housing subdivisions, referred to as "new medinas," have developed haphazardly and illegally at the urban periphery, fueled by remittances of expatriate workers which reached a peak of \$1 billion in 1981. Densely platted, with minimal open space, they are considered informal because they are undertaken without permits or registration of property titles. Unable to cope with urban areas expanding by 400 to 700 hectares per year and an ever increasing housing shortage, local authorities tolerate these semi-legal "new medinas". They have proliferated over the past decade, growing at an annual rate of 10% which is faster than the squatter settlements themselves. 40% of households living in informal subdivisions have electricity; 35% have access to potable water and 26 % have rudimentary sanitary installations. Densities mount quickly in reinforced concrete structures and can reach over 600 persons per hectare in three to four story buildings overloading their inadequate infrastructure.

3.1. Housing Supply

The 1982 census of housing noted an increase in both household size and dwelling size. Households with 3 persons or less declined from 40% in 1971 to 31% in 1982 while households with 5 persons or more grew from 50% to 57% resulting in an overall increase in the average urban household size from 5.2 to 5.4 persons. Paralleling this trend the number of rooms per dwelling also rose from 2.2 to 2.6 and the occupancy ratio declined from 2.3 persons per room to 2.1.

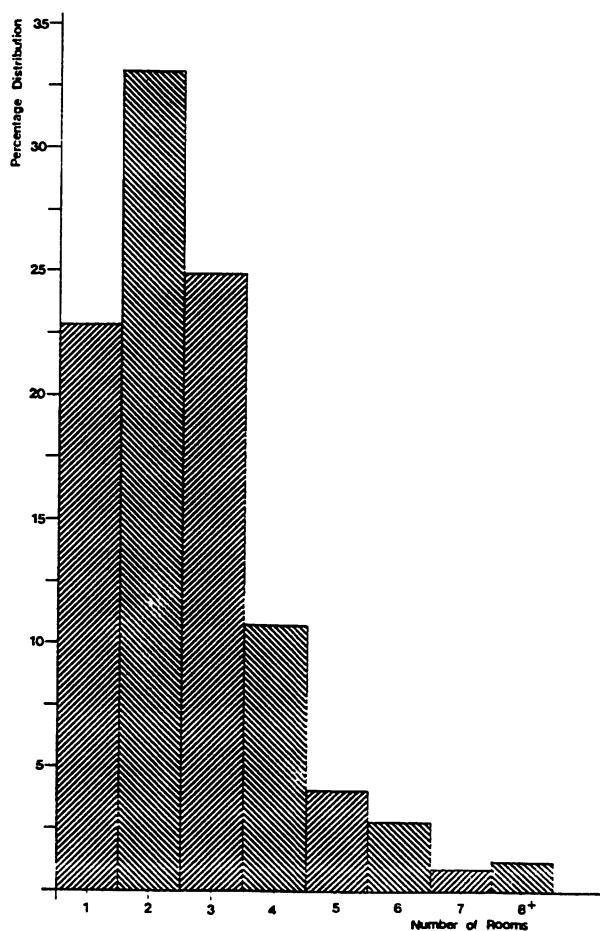


Figure 8 - Distribution of Dwelling Units, by size - 1982

This marked improvement in living conditions may seem perplexing in light of a growing housing shortage. It reflects the direct impact of informal development which has been adding well built and more spacious units to the housing stock.

The correlation between tenure and housing typology highlights the importance of the conventional Moroccan house which accounts for 64% of the standing stock in urban areas. More importantly it provides the bulk of rental accommodations housing 60% of all renters. Because it is privately built and expanded incrementally it offers wide possibilities for flexible tenure arrangements. A formula derived from *zina*, a traditional usufruct right as distinct from ownership, is particularly popular among limited income groups.

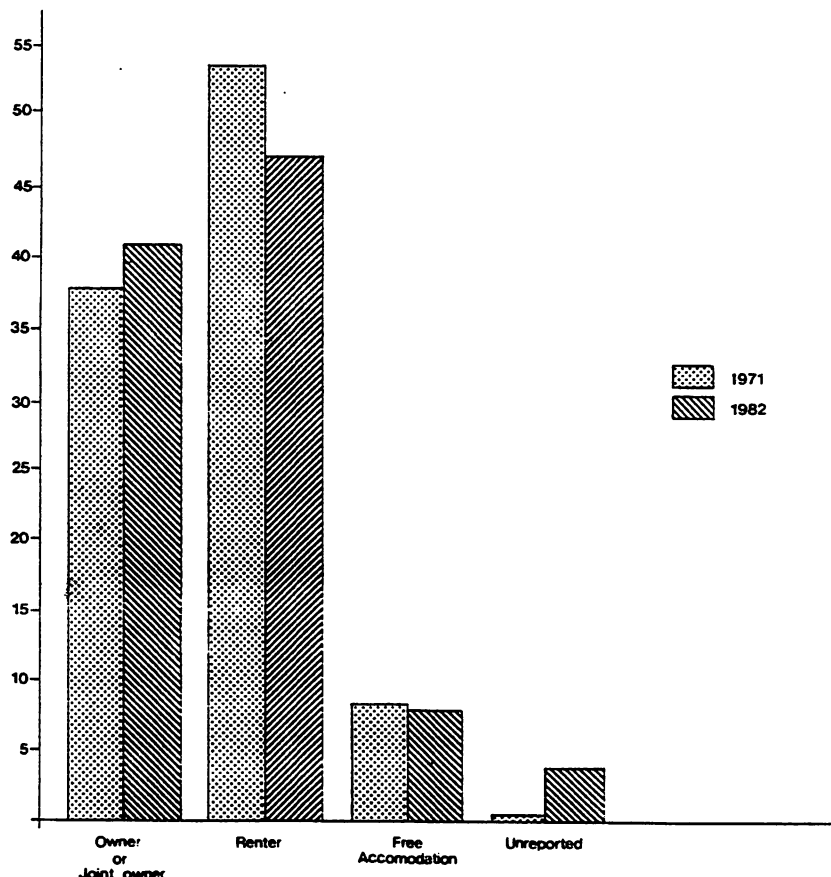


Figure 9 - Distribution of Dwelling Units, by tenure - 1982

A family with sufficient capital to build a house enters into an agreement with a landowner lacking funds to develop the land on his own to build a structure where they can each have a dwelling unit.

Despite the major improvements recorded in the 1970s, 37% of households did not have piped water supply in their dwelling in 1982, 26% lacked electricity and 74% did not have baths or showers and 15% had no W.C.

Improving overall conditions should not mask the overcrowding which still prevails in specific segments of the housing market. The detailed structure of space consumption by urban households shows that 22.7% live in 1 room dwellings and 32.8% live at densities of 3 or more persons per room.

3.2 Housing Demand.

In Morocco, as in most developing countries, demand has constantly out paced supply resulting in a growing shortfall. To understand the structure of demand it is necessary to disaggregate it since housing is a very segmented market.

At the outset it is important to differentiate between shelter and housing. In a temperate climate, makeshift shacks provide shelter at a modest cost. It is a solution which households in the lower 20% of the income distribution are forced to adopt out of necessity. However households in the 20th to 40th percentile often select this option in preference to other alternatives for a variety of reasons:

- low priority placed on housing as a commodity
- locational priorities precluding other options
- lack of seed capital to enter the housing market (i.e., to cover the down payment on land and building materials).

The surveys conducted in bidonvilles have repeatedly confirmed this phenomenon.

Home ownership embodies the aspirations of the middle classes which account for half of the total housing needs in urban areas and generate the bulk of effective demand in Rabat due to the predominance of civil service employees. A dwelling built of permanent materials is a valued asset. When opportunities arise, households will devote a disproportionately high percentage of their earnings to acquire land, build a small structure and then expand it incrementally.

Fueled by remittances from expatriate workers, investment in housing rose sharply in the 70s accounting for 14% of gross fixed capital formation. The sudden entry into the market of large numbers of households with sufficient resources to purchase some form of housing led to a rapid inflation in land values and construction costs. The prices of building materials doubled because of perpetual shortages.

Between 1975 and 1985 land values soared, rising by a factor of 10. In elite areas where lot sizes are large, prices rose from DH 100/m². In middle income areas where demand pressure is high and building plots small, prices rose from Dh 200/m² to Dh 2,000/m². However the increase registered in informal settlements was even more dramatic as prices rose from under Dh 20/m² to over Dh 300/m². During the same period construction costs of a conventional Moroccan house tripled increasing from Dh 400/m² to Dh 1,200/m². The price of land and the cost of site improvement at

the standards required by existing codes - which amount to Dh 400/m² of saleable area - limit the range of incomes that developers in the formal sector can build for. These more affluent groups are numerically too small to spark an effective filtering process.

The public housing programs do target special groups within the middle classes but production is too limited to loosen the grid locked market.

Informal housing development is driven by the demand of middle income groups. The economics of urban land markets entail continued outward expansion through illegal subdivisions at the fringe. Unregulated rents lead to overcrowding in small apartments. This densification is only constrained by holding capacities at saturation levels. Densities build up rapidly from under 400 persons per hectare to over 1,000. The average density of settlements in Rabat (620 persons/hectare) is lower than Casablanca's (1010 persons/hectare) but higher than in other major centers (under 500 persons/hectare).

The proliferation of uncontrolled spontaneous or clandestine settlements has triggered significant intra-urban population movements and allowed a degree of residential mobility for an important segment of the urban population. Lower income households and to a large extent limited income households and young families have few housing options: deteriorating rental units in the Medina; shared accommodations with relatives; one or two rooms in an informal fringe settlement. In all cases choice of accommodations remains unrelated to locational preferences or space requirements. Reliance on present conditions to project future trends can therefore be very misleading.

Households with earnings in the lower 20% of the income distribution are outside the market for housing, formal and informal. They form the hard core of the poor who live in bidonvilles. Displaced, they swell the population of other bidonvilles or establish new ones. For them, the priority is stable employment and not housing.

3.3 Low Cost Housing Programs.

Prior to independence, Ecochard's low-cost housing schemes were developed on an 8 meter by 8 meter grid layout that became known as the "Ecochard Frame". The housing unit consisted of a 64 square meter walled-in lot containing a two-room dwelling, a lavatory and a courtyard with a cooking area. The "8 x 8" grid was economical to build and easy to service. But, more importantly, it allowed a variety of spatial combinations, creating a hierarchy of pleasant public and semi-public spaces which could provide a suitable living environment for tightly-knit social communities.

Since independence, the government has been willing to experiment with a wide spectrum of housing programs. Projects have been implemented under both the economic housing and the social housing program. Incremental upgrading of newly platted areas under the deferred infrastructure program was first tested in Casablanca and Rabat. Densities were kept purposefully as low as 80 plots per hectare and sanitary core units were provided. A total of 4,600 "social" units were built.

The public housing of the 60s included two different programs:

- 1) The Affordable Housing Program (HBM) offered prototypical two- and three-story apartment buildings with a single two-bedroom apartment per floor (Figure 8). Financing was provided through a public sector agency (FNAET) and down payments from prospective owners were used to cover the cost of site improvements. Regional public sector construction agencies (ERAC) were responsible for actual construction.
- 2) The Social Housing Program run directly by the ministry through its regional offices, using ERACs or private contractors, was intended for families earning between DH 600 and 1,500 per month. It offered 30square-meter core houses on 100 m₂ plots. Eligible families could acquire the units on a lease-purchase basis and expand them horizontally and vertically, up to three stories, according to need and financial resources. Total production has been about 20,000 units. The discrepancy between their cost and the income of intended target groups were such that only one quarter of the actual beneficiaries ended up being relocatees from the squatter areas.

In spite of the government's effort to encourage the phased construction of infrastructure through its 1968 ZEP program, in order to maintain the affordability of housing, municipalities have always preferred to market fully serviced plots and the limited experiment with partial services was not successful.

The 1973-77 plan included only ZEP 5 and ZEP 15 zones. The first provided 100 m² with core houses primarily intended for families with income below the HBM level. The ZEP 15 zones offered only lots and assistance in obtaining building materials and were earmarked for the resettlement of bidonville inhabitants. The lots were serviced by standard sanitation systems, but only rudimentary roads, communal water taps and minimal street lighting were initially provided. The plan called for piped water supply by year 5, electricity by year 8 and a complete street network in 10 years. However, within five years the beneficiaries had developed their properties to the maximum allowable height of 3 stories and sometimes exceeded this limit irrespective of ZEP designation. Still, the distribution of serviced sites and building materials for self-help led to the construction of 80,000 units.

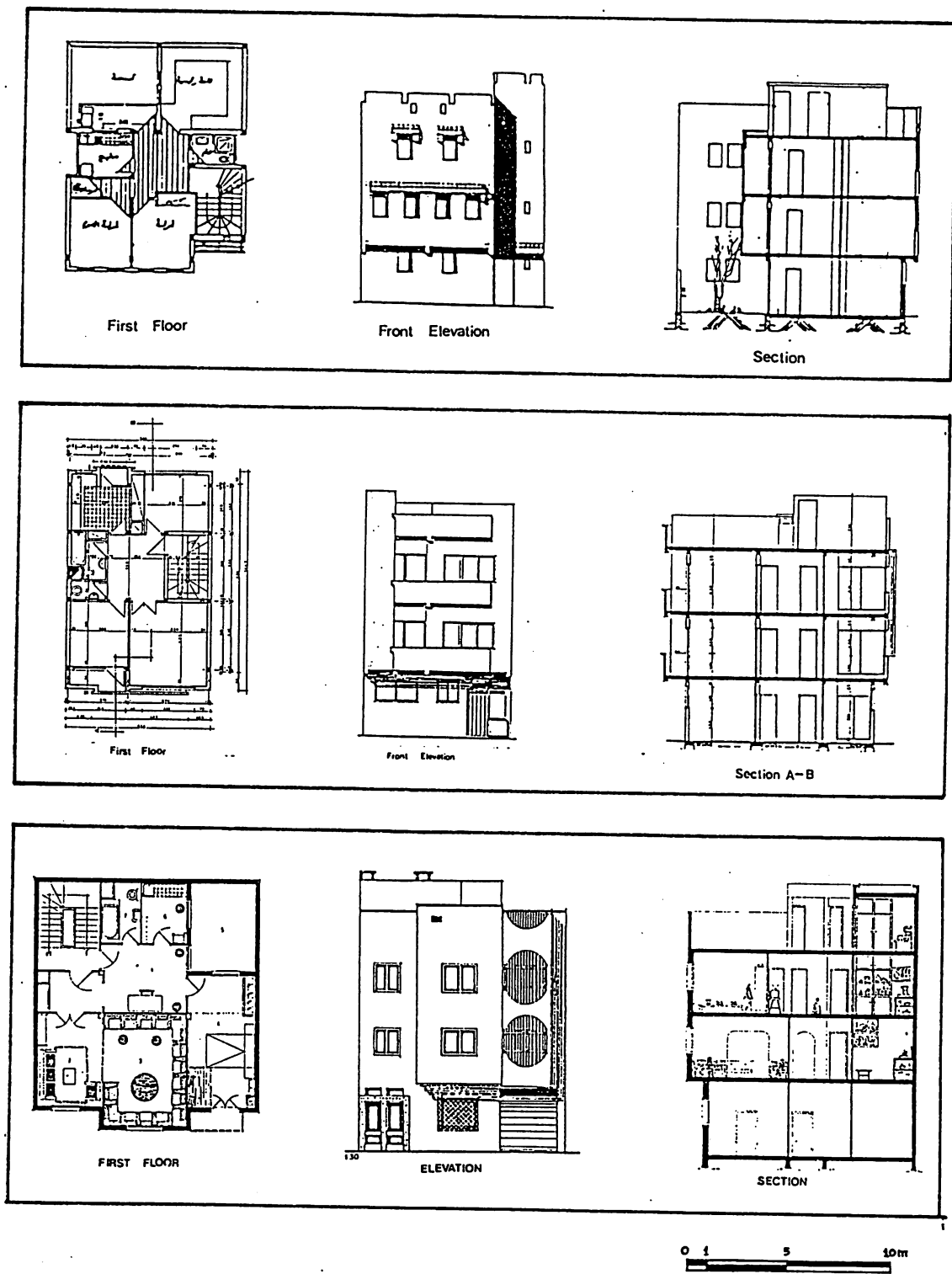


Figure 10 - Housing Prototypes

(Source: Ministry of Housing and Land Development)

As part of an immediate action social program, sites and services projects included a credit line to assist beneficiaries in securing the loans needed to purchase plots and build houses. However, the inflation in construction costs and the high standards of development resulted in housing prices of \$12,900, thus preventing the program from having any real impact on the housing problems of limited income groups. 16,000 units were created but again less than half of the beneficiaries belonged to the target population.

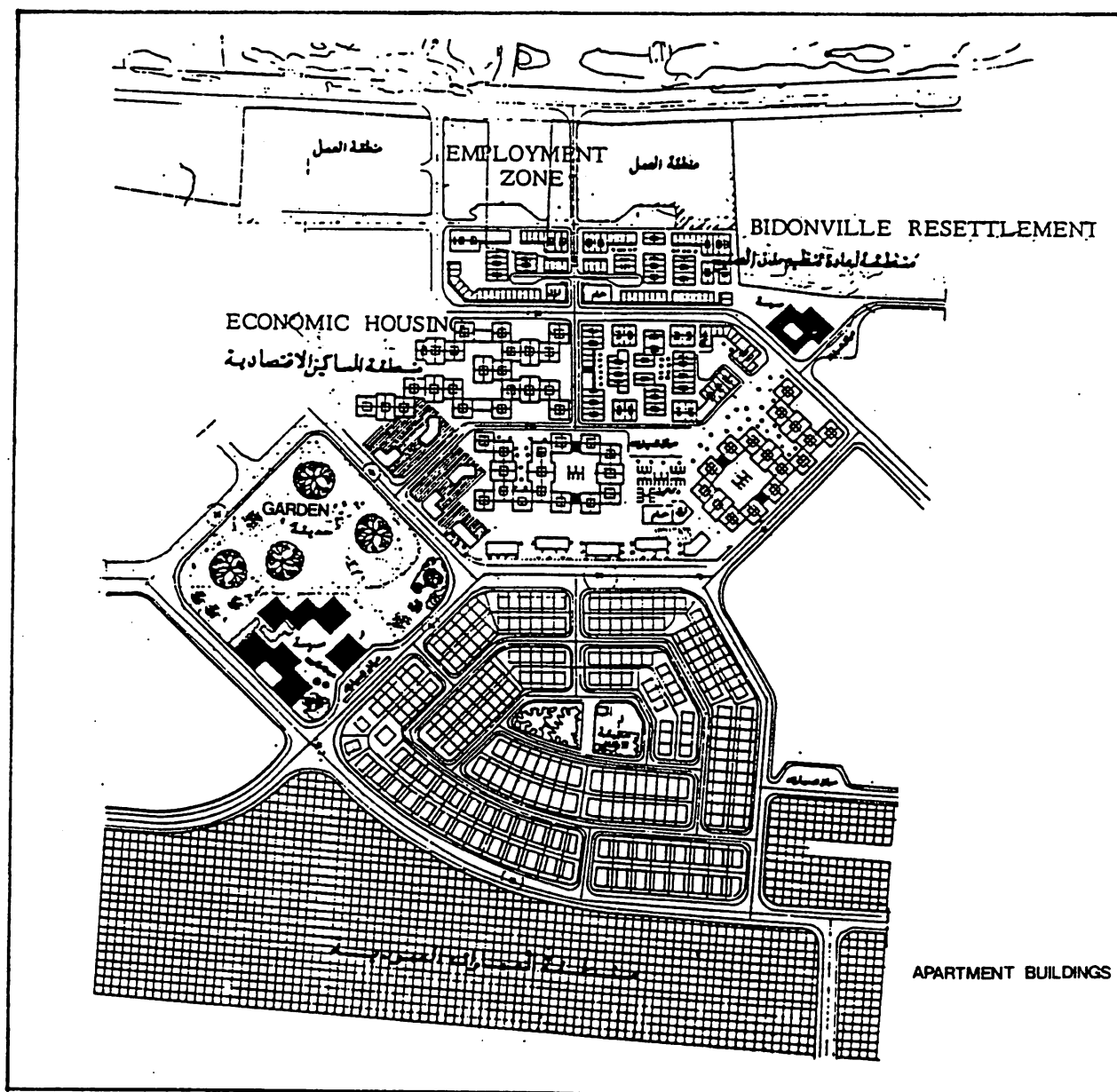


Figure 11 - Al Quds City, Casablanca

(Source: Ministry of Housing and Land Development)

The 1978-82 Development Plan focused on upgrading of existing substandard and unsanitary housing. The social program was reactivated in 1981 and continued to provide core houses, but lots had to be completely serviced prior to transfer of title.

The most popular government housing by far has been the sites and services projects which were used to relocate bidonville inhabitants. A striking example is Tabriquet in Salé, where the availability of utilities prompted rebuilding in durable materials. The rigid symmetry of the layout contrasts with the colorful popular architecture of the structures. Meanwhile, new urban districts were laid out (e.g., Souissi), but the overall impact of these projects was too limited to arrest the growth of uncontrolled urbanization and the densification of the older settlements.

From 1970 to 1980, housing production never exceeded 5,000 units per year implying a growing shortage. Furthermore, the high cost of the units precluded their allocation to limited income households without subsidization. At the peak of production, during the 1973-77 period, 13,000 housing units were built; 4,300 of them were considered low-cost "social housing". However, at a cost of \$5,000 per unit, the housing was not affordable to 50% of the general population or 80% of the squatters. In 1978, about 27% of Rabat-Salé's population lived in squatter settlements; 17% in the medinas; 15% in apartments; and slightly over 40% in sound one- to three-story houses in formal or informal subdivisions. About half the population of the Medinas, the squatter areas and the informal settlements is rural-born. Disregarding the shacks in bidonvilles, informal settlements account for 65% of housing starts. Formal housing production accounts for 35% of housing starts. Half of the units are two- and three-story houses; 13% are villas; 35% apartment buildings, and the remainder are units added by the vertical expansion of existing buildings.

3.4 Housing finance.

In 1985, the average cost of a dwelling was DH 100,000 for an HBM apartment and DH 50,000 for a social program core house. This compares with DH 70,000 for an informal sector house and DH 2,000 for a bidonville shack. Families with incomes above the eligibility limit who are feeling the pressure of housing shortages must somehow secure apartments or plots under a subsidized housing program or find accommodations in the informal settlements.

Households finance their housing out of savings and credit provided by family, shopkeepers, developers, builders or craftsmen, etc. Official credit mechanisms have failed to reach down below the median: 75% of mortgage loans granted under the HBM program, administered by the Banque Centrale Populaire, were located in Casablanca and Rabat-Salé; 40% went to government employees; 30% helped finance single family homes; and 50% to salaried employees above the income eligibility limit. Loans granted under general terms by the main mortgage institution, the Crédit Immobilier et Hôtelier, went to more affluent groups.

The government's housing credit finance programs are heavily subsidized. Mortgage loans can cover up to 90% of the value of the dwelling to be purchased and are amortized over 15 to 25 years at an interest rate of 6 to 8% depending on the total value of the unit. This is approximately half the going market rate. Despite these advantageous terms there are no waiting lists. Proposals have focused on further easing the terms of credit applicable to lots under 200 m² in size rather than eligibility requirements.

A registered title is a prerequisite to obtain a government loan; yet the difficulties and expenses involved have consistently deterred limited income families from attempting to register land transactions. To encourage registration, fees applicable to land for owner occupied housing were sharply reduced in 1980. However the informal sector remains by definition excluded from access to finance through formal channels.

IV. Rabat-Salé: the Capital City.

4.1 Historical Development.

Rabat, Morocco's capital city, is located on the Atlantic coast on the southern bank of the Bou Regreg River which separates it from Salé. The two medinas at the estuary of the river are over 700 years old and Rabat's fort, the Qasba, was built by the Almohads in 1150. Located on the top of a 30-meter hill dominating the coast and the channel, this fortified precinct included a palace, a mosque, barracks, warehouses and cisterns. An area of 420 hectares was enclosed by defensive walls to provide space for residential and commercial uses. Construction was started on a great mosque, but never finished. The new settlement, called Ribat-al-Fath, had ample room for growth; several centuries were needed to fill the enclosed area.

From the 13th to the 16th century, Rabat experienced a marked decline despite the sporadic construction of monuments. Yet, by then, the settlement must have spilled beyond its enclosing walls since the great mosque and the new public bath, the Hammam, were built by the Merinids in the Medina. The arrival of Andalusian refugees in the 17th century and the refurbishing of the Qasba which acquired three new palaces, additional defenses and naval fortifications, sparked new life in the stagnating city. It became a home port for buccaneers operating along the Barbary coast from the 17th to the 19th century.

The Almohad walls were extended to encompass the Medina and enclose an area covering 840 hectares. A new palace was built at the southwestern corner of the original enclosure. These two projects revived the old royal city and shaped the physical development of the medina.

The French colonial administration radically changed the design and structure of the city. Rabat, which had been selected as the capital city, received special attention from Henri Prost, the chief urban planner and architect, who had been charged by General Lyautey to develop 10 new towns for European settlers - one in each of the larger cities. Wedged between the palace and the medina, Rabat's new town extended west of the walls which were partially demolished to make way for this development. Major monuments close to the walls were preserved, but the surrounding fabric was cleared and replaced by landscaped areas and gardens to create vistas and perspectives (e.g., the Hassan Tower overlooking the estuary).

The major north-south axis of the New Town, aligned to the main streets of the medina sought to present a deceptively integrating link between the two entities. This artificial treatment failed to mask the basic premise of colonial urban development in Morocco which imposed a strict segregation between the indigenous and the European settlements in the protectorate.

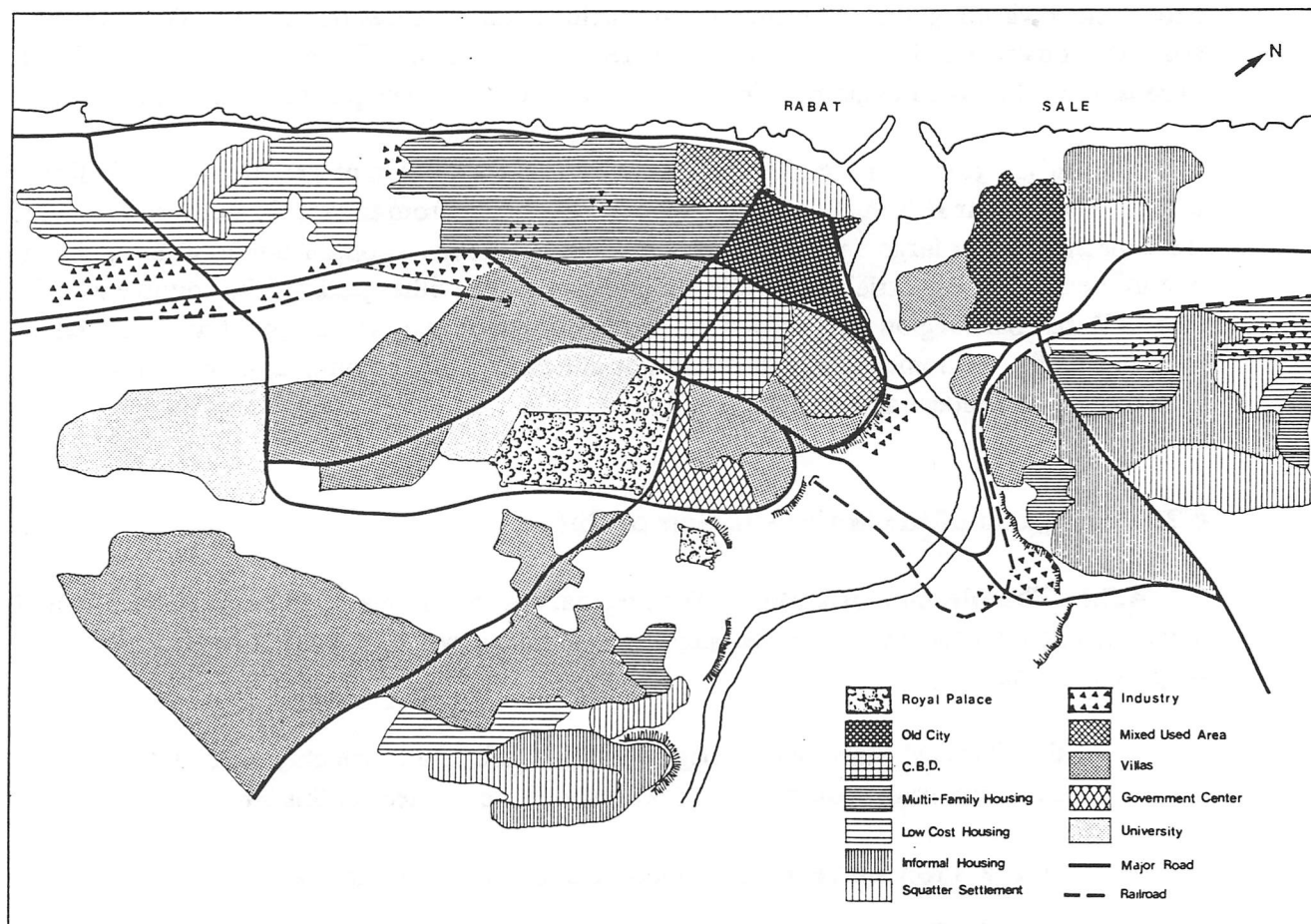


Figure 12 - Rabat-Salé Generalized Land Use

The planning and design of the European new town with its large boulevards, public squares, open spaces, gardens and modern architecture reflected the principles endorsed by the Athens Charter including segregation of land uses with separate zones designated for industrial, commercial and residential districts. The application of these principles to a colonial situation led to the division of Rabat into four distinct zones:

- the medina, with about 200,000 inhabitants, preserved without upgrading its inadequate infrastructure ;
- the "Océan" district west of the medina, housed the European middle-class population;
- the main government buildings as well as the university were located south of the medina;
- in the center, the European modern business district.

Prost's static vision and rigid design had far-reaching consequences on the city's development. The spatially constrained Medina could no longer be expanded. There were no plans for future expansion of the urban agglomeration and no plans for the development of the Rabat-Sale region.

The urban growth of the 1935-45 decade led to the evolution of similar patterns in Rabat and in Salé. World War II brought an influx of seeking a refuge from the war in Europe. Droughts and the consolidation of large agricultural estates, new employment opportunities in the public sector and in the nascent industrial sector attracted migrants from other parts of the country who flocked to the Rabat-Sale region and settled on the outskirts of the two cities. Overwhelmed by the magnitude of a phenomenon which it had not anticipated, the colonial administration was forced to develop new residential districts after the end of the war.

4.2 Description of the Major Districts of Rabat.

4.2.1 The old city of Rabat. The medina, covers an area of 91 hectares. Its boundaries have remained practically unchanged since the 14th century. Its layout is organized around two perpendicular axes.

- the Consuls' Street which begins at the Qasbah and roughly follows the river. Port activities, trade, commerce and workshops are located on this street;
- Soufya Street where the large mosque and markets are located.

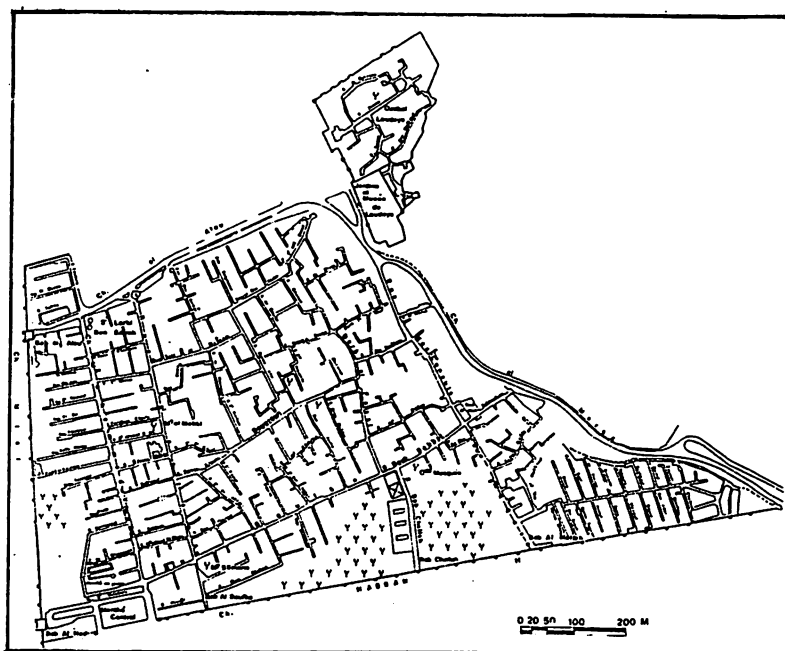


Figure 13 - The Medina of Rabat

The major streets run parallel to these major axes and lead to the city gates. The elite residential quarter where the notables lived lay in the central zone. Its alleyways are wider and houses more spacious with larger courtyards. The fabric of the Medina consists of a hierarchy of narrow alleyways and footpaths organized around an access spine (*derb*) branching off from a major street and providing access to smaller lanes, *zanqat*. The *derbs* give a strong spatial definition to the

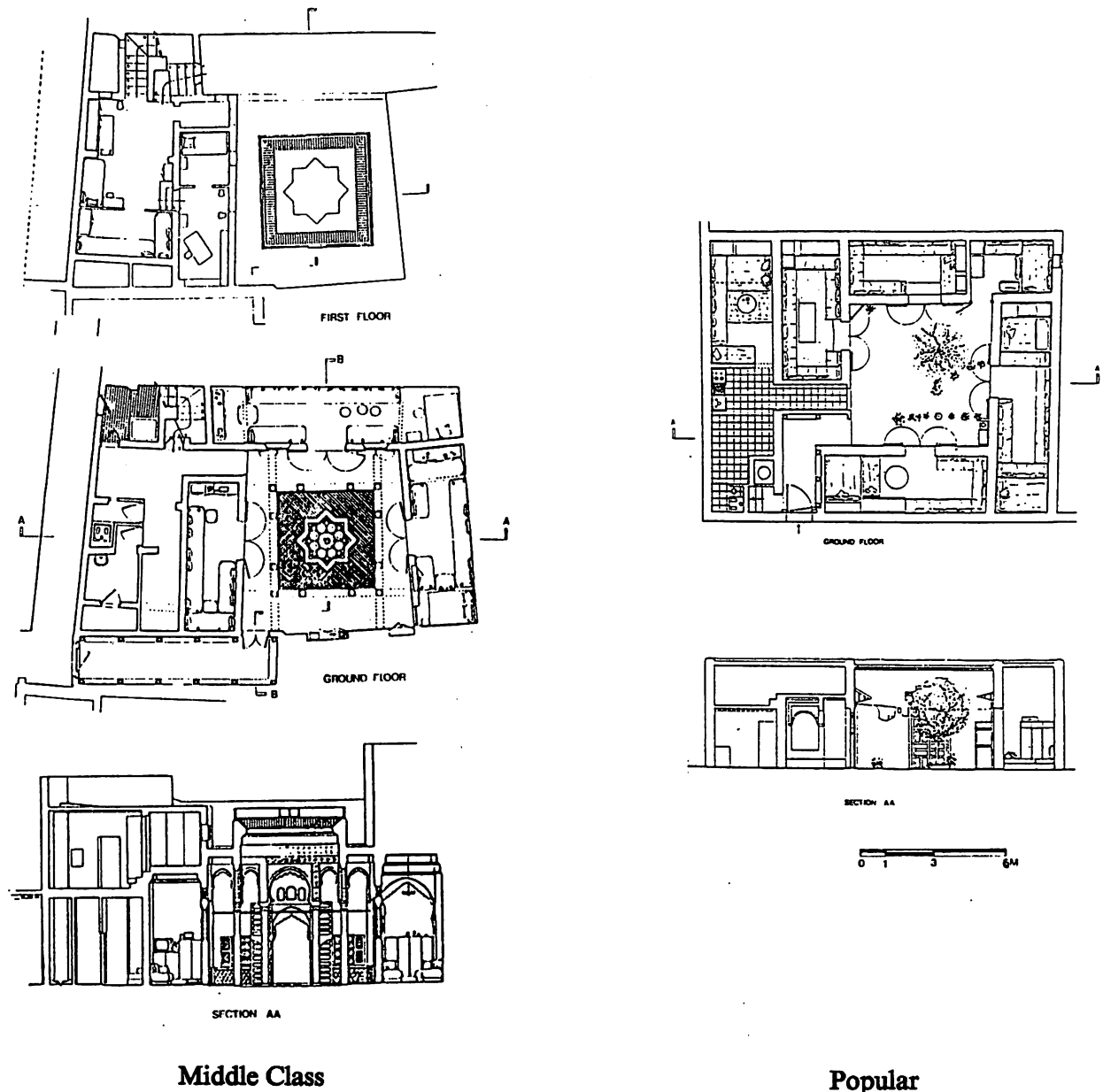


Figure 14 - Traditional Housing in the Medina

Source: L'habitat populaire au Maghreb, I.E.R.A.U., 1985

residential quarter whose inhabitants share common public facilities, (fountains, bread ovens, schools, etc.) and form a cohesive social group. The dwellings are built around interior courtyards which provided the bulk of the open space in the city. Residential densities range from 60 to 80 houses per hectare. The stark facade of residential streets with sparse fenestration contrasted sharply with the bustling linear markets (*souk*) lined with public buildings and shops.

Historically, urban services were provided by *habous*, charitable religious institutions benefiting from important private endowments. Residents contributed through civic duties and mutual assistance to the social life of the community.

Today, the medinas of Rabat-Sale are densely populated. Their housing stock is neglected and deteriorating. Their narrow streets do not allow vehicular circulation. Their utilities and services are unable to support the overload of excessive densification and the subdivision of houses into multiple living units. The average density in the Medina is 756 persons per hectare, but some quarters like the Mellah reach 937 persons per hectare.



Figure 15 - Morphology of the Medina

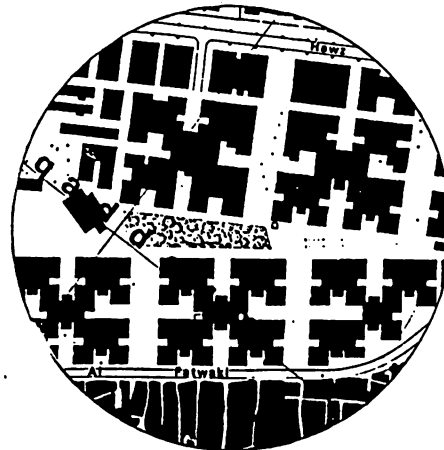
4.2.2 The colonial city and the central districts. The colonial city that started to be built at the beginning of the century covers about the same area as the Medina. Today, it encompasses the Central Business District and the administrative center of the capital. The main public buildings are located on Mohammad V Avenue: the central post office, the Bank of Morocco and the railway station. The former "Résidence Générale" of the colonial administration and the new ministries front on Touerga Avenue which leads to the royal palace. Modern hotels, shops, restaurants and apartment buildings line the broad avenues and well-maintained streets. Tree-lined boulevards, landscaped squares and public gardens offer ample open space. The predominant residential

typology was always the villa. The elite districts still display lavish villas surrounded by beautifully landscaped gardens. Closer to the Central Business District, apartment buildings allow a more intensive use of expensive land.

After independence, the colonial town provided a stock of quality housing to affluent Moroccans. Rising land values around the central business district have prompted densification through the replacement of villas by apartment buildings. Hassan, Residence and Agdal are three districts where this process is ongoing at the present time.



Central District



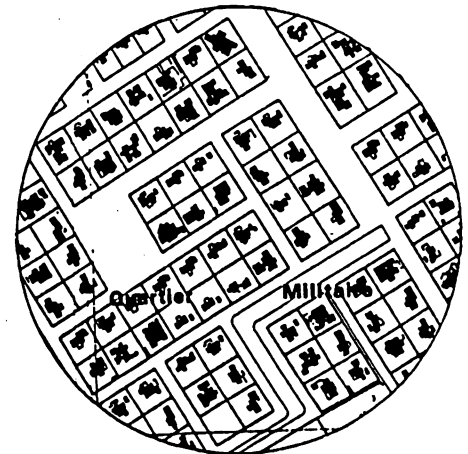
Low Cost Housing Project



Multi-Family Private Housing
100-150 M² Lots



Low Density Residential
Subdivision
1000-2000 M² Lots



Planned Residential District
800-1000 M² Lots



Figure 16 - Morphology of the Modern City

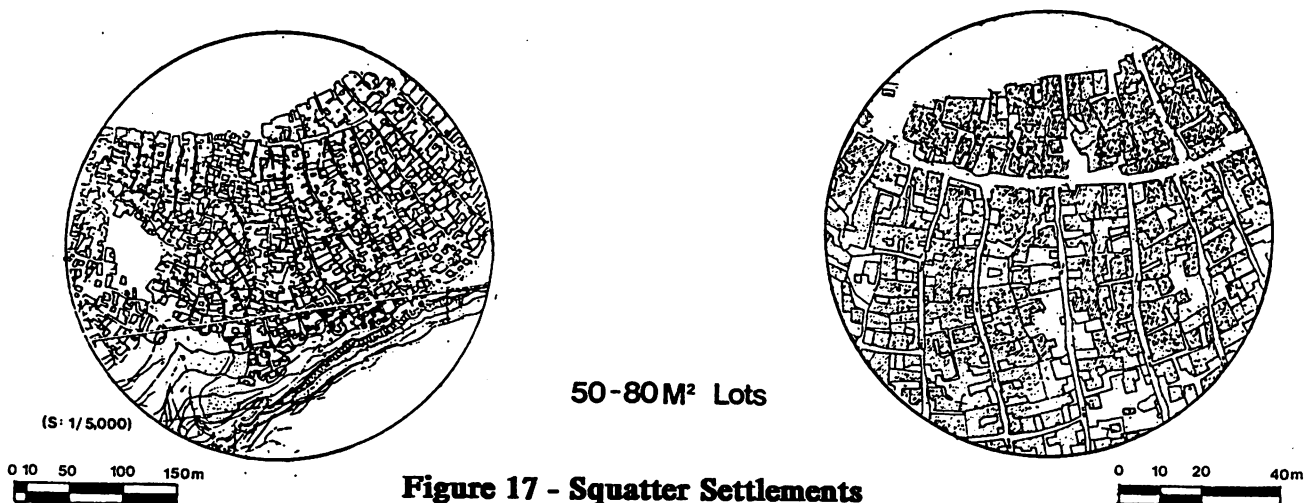
Further away from the CBD new elite districts replicate the residential pattern introduced in colonial times: the free standing villa surrounded by a garden on lots of 1,000 to 2,000 m². These sprawling subdivisions have consumed large amounts of urban land fully serviced by utilities and community facilities. It is a costly and wasteful pattern which has contributed in no small measure to the escalation of land prices in the city.

4.2.3 The urban fringe. The population of Rabat quintupled from 40,000 in 1913 to 200,000 in 1947, the bulk of the increase consisting of rural migrants. Yet, except for the habous project along Hassan II Avenue, the housing stock available to Moroccans remained unchanged. While accounting for 60% of the city's population, they occupied less than 17% of its land area. Shanty towns (*bidonvilles*) and illegal settlements (*douars*) sprouted at the urban fringe, particularly along the banks of the Bou Regreg River.

Throughout the 50s and 60s squatter settlements proliferated and housed 20% of the city's population in 1971. The three largest agglomerations resulting from an aggregation of smaller separate units are found near the industrial districts, in the southwest and southeastern fringe of Rabat and at the edge of the "Ville Neuve" of Sale. The settlements lack utilities and community facilities, particularly elementary schools and health centers. Services such as garbage collection and fire fighting are either inadequate or non-existent.

Squatter settlements house populations with a broad range of incomes. However, their common characteristics include:

- Rough topography and peripheral location;
- Illegal occupancy of the land;
- A predominantly young population, half of whom are recently-arrived migrants except in the older settlements like Douar Doum;



- An average density of 400 inhabitants per hectare which is lower than in the medinas or the informal settlements since dwellings do not exceed one story.
- Lots average 50 to 80 m² and the original parcels are often subdivided to carve out smaller lots for sale once the settlement is well-established;
- The typical dwelling, *zriba*, includes a shack on a fenced-in lot. The shack is built of timber and sheet metal and usually consists of a single room, 2.5 X 5 meters. There are no sanitary facilities. Shacks are built by self-help and/or paid construction workers, *maalem*.

4.3 Recent Development Trends.

The economy of Rabat-Sale is based on secondary and tertiary sector activities. However, since the closure of Sale's port, because of severe siltation problems, secondary activities have declined. Casablanca and neighboring Kenitra are now the leading industrial and port cities along the Atlantic coast. Rapid population growth sustained by high natural increase (2.6% per year) and massive rural immigration (3.7% per year) led to both unemployment and housing shortages. Unemployment was reported at 12.5% in 1976 just prior to the recession. Actual figures, including categories of job seekers not covered by official statistics, had to be much higher. Today it is estimated to be about 18%; underemployment and disguised unemployment are rampant.

From the 1920s to the mid-40s, there was no policy to address the problems of massive rural migration to the capital city. Bidonvilles and douars proliferated. The few interventions by the colonial administration were confined to the relocation of burgeoning bidonvilles from sensitive sites. Since independence, Rabat-Salé has grown by about 26,000 persons annually; the number of squatter settlements continued to increase until the mid-70s and, by 1978, housed 27% of the population. Over the past 15 years, the expansion of peripheral shanty towns has slowed down, while clandestine settlements have emerged and proliferated in spite of the government's efforts to intervene in the housing market.

4.3.1 Government housing projects. The first low-cost government housing project on the city's periphery, designed by Ecochard was completed in 1954. Designed to accommodate 5,000 inhabitants, it was to provide relocation housing for the squatters living in nearby Doum but was preempted by middle class residents. The area is known today as Takadoum.

The large scale of more recent public housing projects in Morocco has given rise to clearly identifiable quarters within the city fabric. The projects built in the 1960s consisted of walk-up apartments and row houses built on the 8 m x 8 m grid of the *trame Ecochard* which provided 60 m² lots grouped in various combinations for an overall density of 60 lots per hectare more or less, depending on the extent of public open space provided in each project. The social housing projects

of the 70s were laid out on 10 m x 10 m grids and offered 30 m² core houses on 80 to 100 m² lots at densities of 50 to 60 lots per hectare.

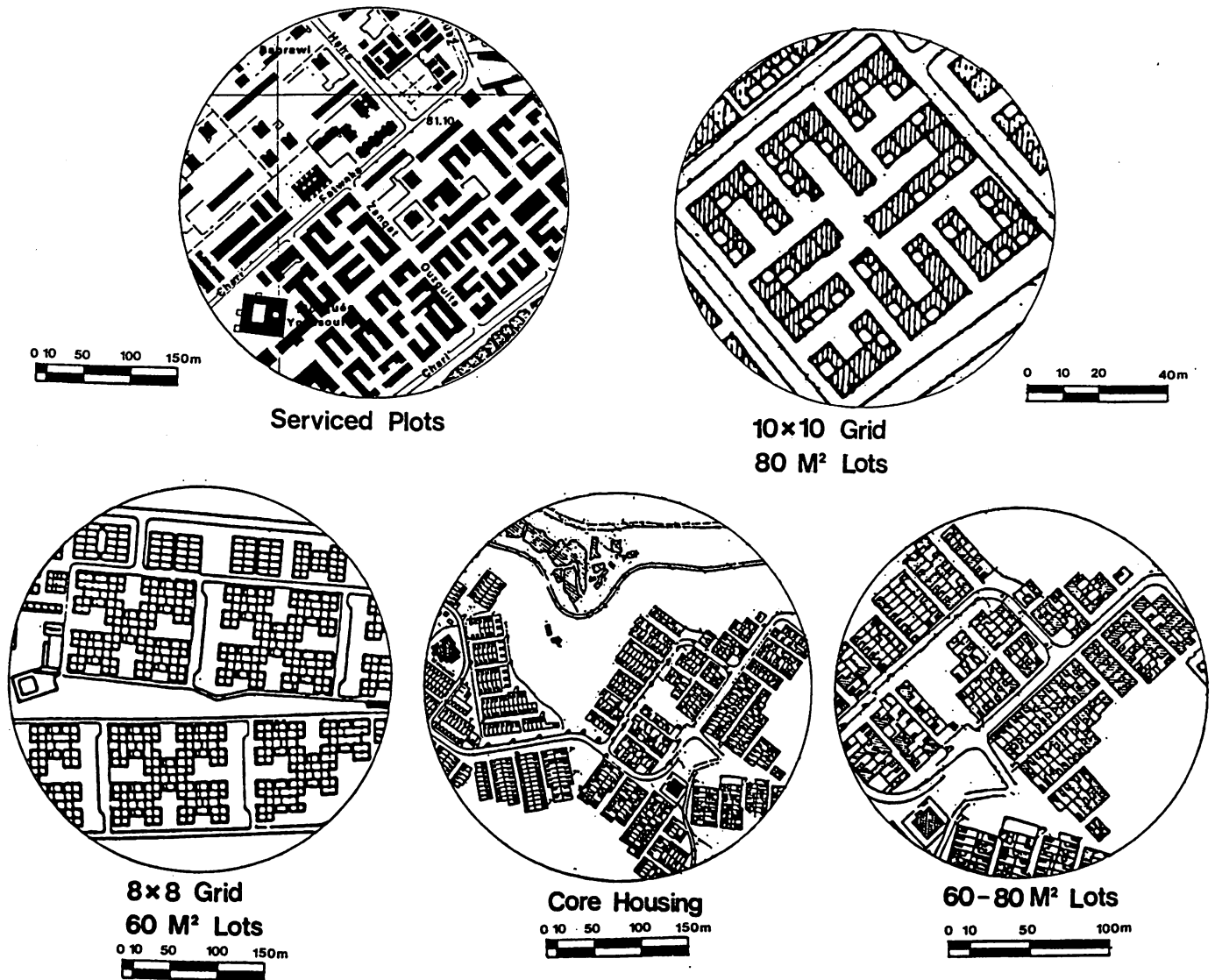


Figure 18 - Government Housing Projects

4.3.2 Popular districts. The most widespread residential pattern is the densely platted subdivision with building lots ranging from 100 to 150 m². The prototypical designs distributed by municipal authorities to land owners applying for building permits have created a disturbing uniformity in built form which reinforces the monotony of rigid rectilinear layouts. They have also set the standard for modern middle class urban housing. The model 3-story multifamily house of 80 to 100 m² is commonly referred to as the conventional Moroccan house. Its ubiquity tends to obscure any visual differentiations between the older legal developments and the more recent "clandestine" subdivisions.

Denser, partially serviced sites are also provided for poorer families, with 80 lots per hectare. In the World Bank sponsored projects, the overriding concern with lowering costs has led to the adoption of smaller lots, narrower street frontage and greater depth. The subsequent transformation of prototypical designs illustrate the problems arising from densification when planned yard space is covered and built over. The original core houses are altered and integrated within the expanding structure.

Current subdivision regulations stipulate minimum lot size of 70 m² and require that 45% of the land area be allocated to roads, sites for community facilities and useable public open space.

4.3.3 Informal settlements. As the growing housing shortage eroded the ability of municipalities to contain uncontrolled urbanization, developers of clandestine subdivisions became bolder and buyers felt more secure. Banking on the inevitability of legalization, developers raised prices. Confident that they would be eventually regularized buyers were willing to pay. There has been a marked improvement in the quality of informal subdivisions over the past decade. Lot size has increased and layouts anticipate full service standards in sharp contrast to older settlements like Hajja when such expectations could not be entertained.

Informal settlements, developed mostly over the past two decades, cover about 400 hectares. Their proliferation has corresponded to the stagnation of existing bidonvilles and a noteworthy absence of newly formed ones on any significant scale. Emerging settlements of the bidonville type quickly evolve into second rate informal subdivisions with smaller lots, narrower streets and cement block and concrete housing. Despite a slowdown in the legalization and servicing of settlements due to budget constraints, the trend seems well established and is not likely to change.

Informal development is undertaken on a large scale by private real estate entrepreneurs. Land is subdivided illegally or marketed unserviced, in violation of existing codes, and buildings are constructed without permits. Mounting development pressures have led to the conversion of fringe land from agricultural to urban uses. Small landowners, farming at high risk and with narrow profit margins, find it difficult to resist offers of subdividing their land and marketing small building parcels for 100 DH/m². Highly productive holdings, particularly orchards, are much less likely to be preempted for informal speculative development. The lack of available building plots serviced by utilities and the backlog of unmet demand for affordable housing guarantees immediate success to entrepreneurs. In less than 15 years, the area covered by informal settlements has grown by a factor of 5 to 6. Production averages 10,000 to 12,000 dwelling units annually, more than twice the number of units legally constructed by the public and private sectors combined.

Their quality varies in response to the desirability of the location and the income of prospective buyers. Lot sizes range from 70 to 150 m². A few choice parcels can exceed 200 m². The circulation network integrates vehicular sized streets (5-8 m) with alleyways (2-4 m) and narrow dead end paths (1-2 m). The size of the roads and the proportion of small lots under 60 m² is a good indicator of the social standing of the settlement.

Unhindered by regulations, property owners have used their land and structure to generate additional income for the household. 40% have converted their ground floor to commercial use: shops and workshops (carpentry, plumbing, metal works, furniture, weaving, etc.) 60% have carved out rental units in their buildings. These units consist of 1 or 2 small rooms while the owner's apartment may have 4 or 5 rooms. The rental stock in informal settlements is clearly intended for households of more limited means.

Over time, roads are paved by the transport authority. Social, political and cultural organizations emerge. MSIDs (preschool religious classes) are set up and schools follow. Health centers and dispensaries are built and public services introduced. Eventually utility networks are laid out. The settlement is finally integrated into the modern urban fabric. By then it is virtually undistinguishable from other popular districts exhibiting similar land uses, building envelopes and street facades.

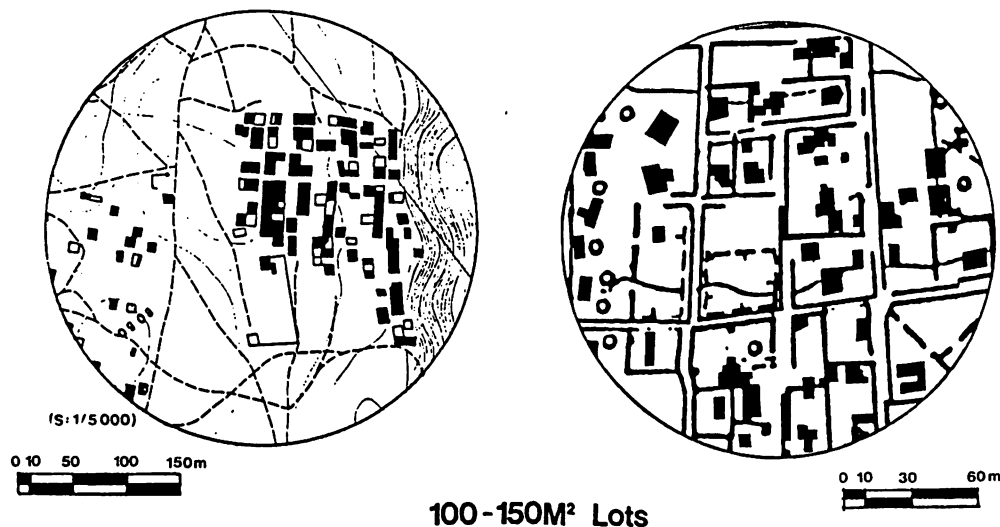


Figure 19 - Informal Housing Subdivision

Informal developments are dynamic, well-organized and involve to some degree land speculators and unscrupulous contractors who reap windfall profits. They have provided access to land and home ownership to the middle classes: households with earnings bracketing the median income of 500 DH per month. Reasonably sized building plots of 100 to 150m², lower development standards than those required by the building codes, the ability to build incrementally and tap a variety of credit sources (landowners, contractors and family) are important factors fueling their growth. The most common housing typology is the 2 to 3 story house with one apartment per floor. Whenever feasible, the ground level is converted to more lucrative commercial uses as soon as the population build up in the settlement can support their development.

The proliferation of informal settlements has resulted in important population movements within the urbanized zone. A survey carried out in 1985 in Salé showed that 15% of the residents came from the Medinas, 7% from bidonvilles 26% from other informal settlements and 30% from other parts of the cities. 40% had lived in Rabat-Salé for over 18 years and another 40% for less than 6 years. It is apparent that informal settlements house primarily a broad range of middle income groups seeking more spacious accommodations, better living conditions and opportunities to supplement earnings.



Figure 20 - Geomorphology of Rabat's Southern Fringe

V. The Southern Fringe of Rabat.

5.1 Physical Setting.

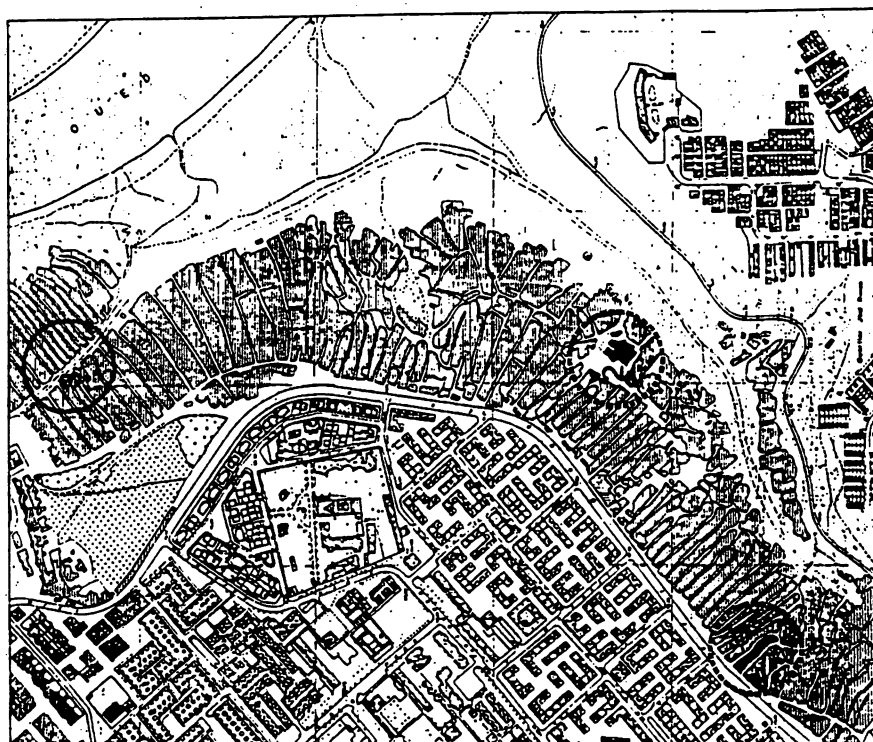
The southern fringe of Rabat offers an excellent opportunity for the planned expansion of the city. Its geomorphology has been shaped by the Bou Regreg River that meanders through a 1.5 to 2.0 km wide valley, a floodplain filled with alluvial deposits. North and south of the valley, the land rises sharply to an elevation of 80 meters to form a plateau gently sloping towards the ocean. The gradient of these escarpments can reach 50% in some locations. Wind and rains, which can be abundant in this coastal region, have weathered the hilly plateau. It is dissected by deep dry river beds (*wadis*) through which storm water drains into the Bou Regreg. The wadi slopes range from 10 to 30% and are steeper close to the valley. Subsoil on the plateau consists of calcareous sandstone covered by a layer of silty, clayey sand 2 meters deep.

5.2 Development Pattern.

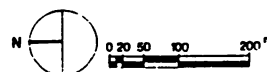
Heterogeneity in terms of population and built form characterizes the existing urban elements in the study area. The total resident population is estimated to be about 100,000 inhabitants. About 18,000 lower income households live in informal settlements, of whom 15,000 are in the three older settlements being upgraded and the remainder, who are also the poorest, in recently built bidonvilles. About 3,000 middle income families live in the public housing project constructed by Ecochard. 2,000 more affluent families reside in the villas of the single family district. About 1,500 limited income households live in the recently completed core housing project. Haphazard developments, incongruous juxtapositions and dynamic transformations characterize the urban fabric of the southern sector. An overall plan integrating its disparate elements is sorely lacking.

5.2.1 Squatter settlements. Douar Doum, developed in the 1920s as a loose aggregation of bidonvilles, terraced along the escarpment of the plateau along the Bou Regreg valley. The individual bidonvilles grew and merged into a tight mass of substandard dwellings that currently houses some 20,000 people. The main alleys in the settlement follow the topography. Lots are organized in the direction of the slope starting from the bottom of the ravine. Steep slopes, loose soils, drainage and circulation problems have prevented the vertical expansion of structures in Doum. Consequently, most of the original parcels have been subdivided into smaller lots as the settlement densified. The majority of structures are one or two stories high and densities are still under 1,000 persons per hectare.

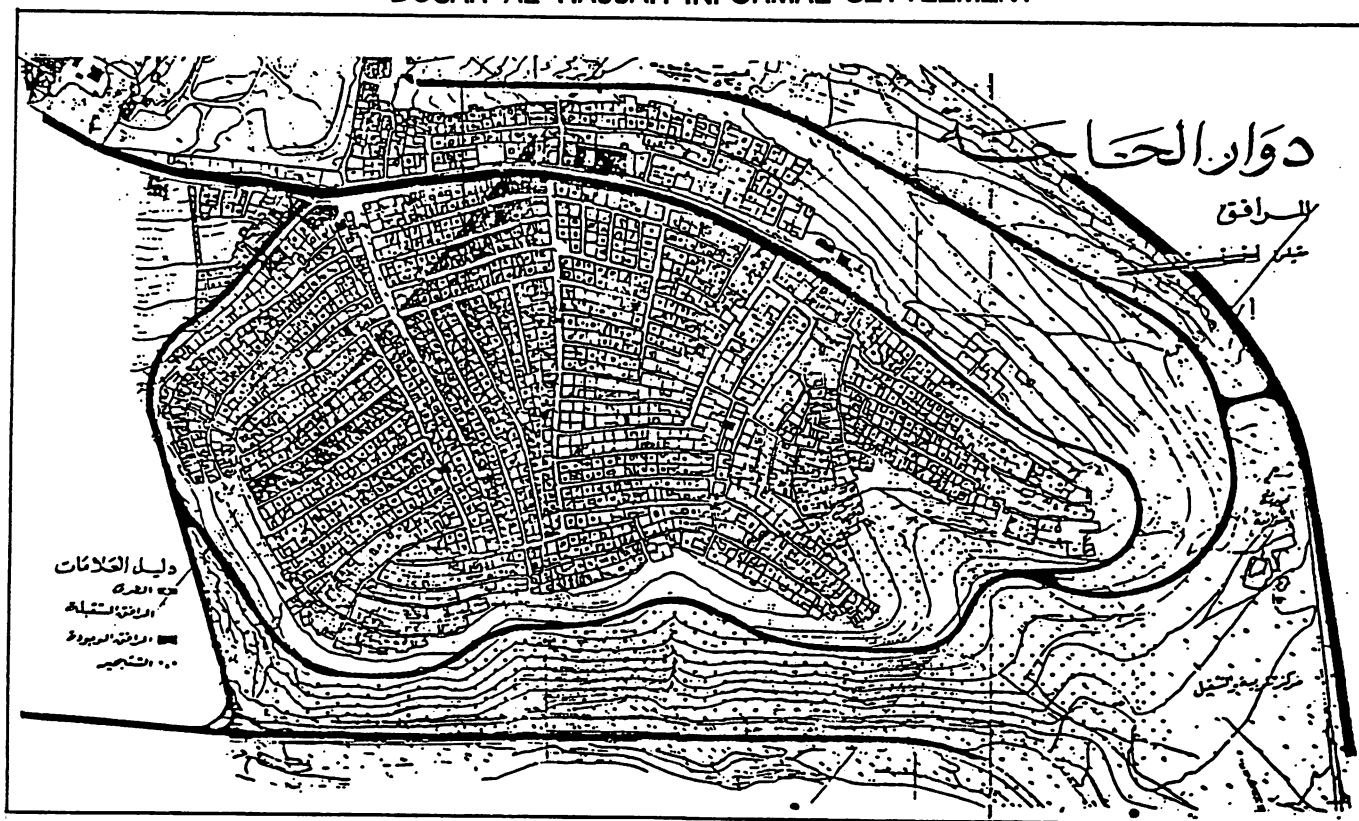
Douars Hajja and Maadid differ from Doum in that they are illegal subdivisions of private land rather than squatterized areas. Douar Hajja has developed on the plateau. Lots are laid out in concentric rings in accordance with the topography. Resting on firm sandstone, the buildings in Hajja rise three to five floors. The settlement houses 27,000 inhabitants and its density is the highest in the study area, close to 1,500 persons per hectare.



DOUM — Housing



DOUAR AL HAJJAH INFORMAL SETTLEMENT



SOURCE: MINISTRY OF HOUSING AND LAND DEVELOPMENT

Figure 21 - Douar Doum and Douar al Hajjah

Douar Maadid extends along the edge of the wadi adjacent to the Ecochard housing project which was a major factor promoting its growth. Despite the difficult topography, densities are high, about 1,400 persons per hectare, and the settlement now houses 26,000 persons mostly in 2 and 3 story buildings. A major commercial street runs between Maadid and Takadoum.

From inception to the present, population build-up in Doum, Hajja and Maadid has been steady but uneven responding to the general economic conditions and job opportunities. The early 70s witnessed the most rapid rates of growth exceeding 5% per year. But from 1978 onwards, there has been a slowdown as rates dropped to about 3%. Residents in the three settlements have built mosques and convenience services, namely ovens and shops.

In early 1987, a series of small shanties stretching along the road leading from Douar Doum (Bargach, Azgar and Chellah) were demolished. The poorest among the inhabitants were authorized to resettle on Hajja hill and in 1988, construction of 179 additional relocation units on the steep slope of Jebel Raissi was considered.

5.2.2 Takadoum. Constructed in the early 1950s, Takadoum exemplifies the typical 8 x 8 grid frame developed by Ecochard as a low cost housing solution. The original scheme consisted of 1,000 lots of 64 m² containing a two-room dwelling, a lavatory and a courtyard with a cooking area. The square lots were grouped in combinations of five to create a hierarchy of public and semi-public spaces. Elementary schools and open spaces were included in the scheme. The walk up blocks fronting on the main street to the north were added later.

Interestingly, Ecochard constructed the project as a resettlement scheme for the squatters living in Douar Doum. But upon its completion in 1953, the housing shortage was so acute that the units were promptly preempted by more affluent groups. Over time, the settlement has densified. Courtyards were covered except for a light well which also serves as ventilation shaft. The structures were expanded vertically 2 or 3 stories providing living space and rental units.

5.2.3 Youssoufia. The Youssoufia housing project was built in 1960. It grew out of another attempt to resettle the squatters of Douar Doum. It was a social housing project offering 30 m² core houses on 100 m² rectangular plots. Housing shortages and mounting pressure on urban land led to the disregard of limits on vertical expansion. Many buildings have acquired a fourth story exceeding the allowable height of 3. The community facilities incorporated in the project have served the population living in the neighboring squatter and informal settlements for over 20 years until schools and health centers were finally provided to them as part of the upgrading project. The residents of Youssoufia are middle income groups.

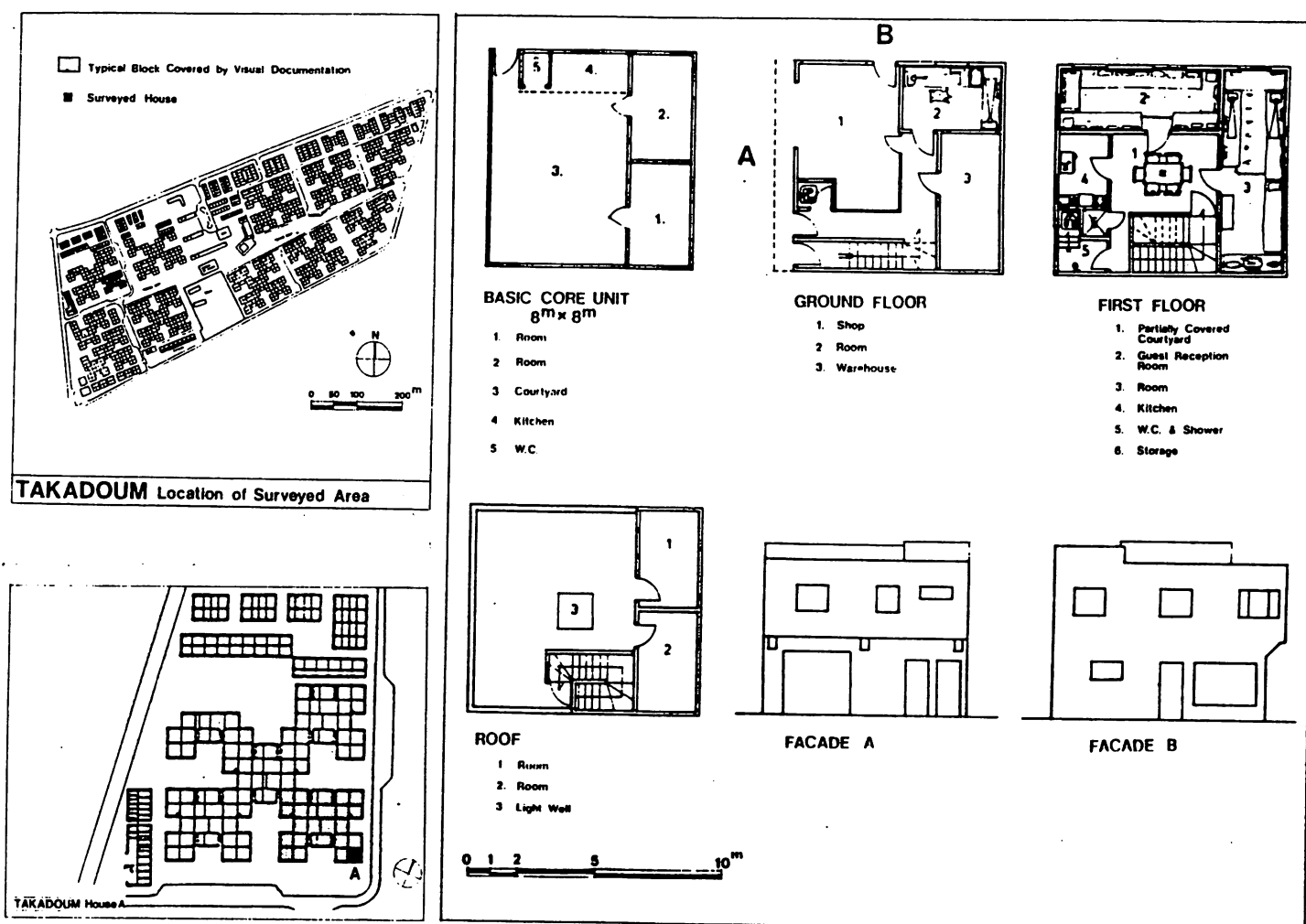


Figure 22 - Takadoun

5.2.4 The Aviation District. The Aviation District is a large-scale housing project developed by the armed forces for officers and their families. It is a fully serviced subdivision with single family housing. Both infrastructure and architecture design standards are quite high. It houses a solid middle class population.

5.3 The Upgrading of Douar Doum.

5.3.1 Socioeconomic characteristics of the squatters. In 1976, prior to the initiation of upgrading activities, the populations of Doum, Hajja and Maadid were 17,500, 19,500 and 22,000 inhabitants respectively. The preemption of projects designed to resettle the squatters entailed mounting densities in the three settlements.

Fifty years of continued occupancy had given Douar Doum a rather stable population: In 1971, only 20% of the households were recent arrivals (less than one year of residence) and by 1976, this proportion had fallen to 10%. The unemployment rate was 24%, double the overall rate prevailing in Rabat and Salé. Douar Doum had the highest rate, 31%; it was also the one most lacking in manpower skills and economic activities and its residents had lower incomes. School enrollment was dismal as only 64.7% of children 7 to 14 years of age were attending school, 12 points below the national average.

Hajja residents had higher incomes and larger household sizes, better manpower qualifications and rates of school enrollment (77%) compatible with the national average.

A small minority (2.7%) of the households in Doum had incomes of 1,200 DH¹² or more per month. More than 55% of housing rents ranged from 20 to 40 DH per month and 23.4% of the housing sites for sale were priced under 1,000 DH and 50% under 5,000 DH.

Housing types and building materials have evolved constantly. The original primitive shelter-tents of the 30s were replaced first by *mouallas*, reed huts with thatch roofs, then by barraques, timber frame and sheet metal shacks with corrugated metal roofs. Legalizing tenure brings about the discarding of temporary building materials in favor of solid cement and concrete structures which can be expanded incrementally.

Lots usually cover 50 to 60 square meters. Each unit possesses a water connection, a *metbakh* (kitchen) and a back yard prolonging the hall. Decorative elements reflect the origin of the residents since each province has its own distinctive style.

5.3.2 The upgrading project. The upgrading project aimed at slowing down the growth of substandard settlements on the outskirts of the cities. It was a pilot project purporting to demonstrate the viability of an alternative framework for planning and implementation of affordable housing options. It reflected the basic needs approach in its determination to tackle simultaneously the social, economic and physical problems of marginal urban settlements.

The project includes the following components:

- upgrading three squatter settlements;
- construction of an experimental sites and services core- housing scheme, La Butte, to accommodate households displaced by upgrading activities and designed to show the feasibility of lowering housing costs;
- an activity zone for light industry to generate employment opportunities;
- a vocational training program with financial assistance to the unemployed;

- Upgrading the capacity of trunk sewer lines and major roads in the area to enable the primary infrastructure to carry the additional load generated by the project.

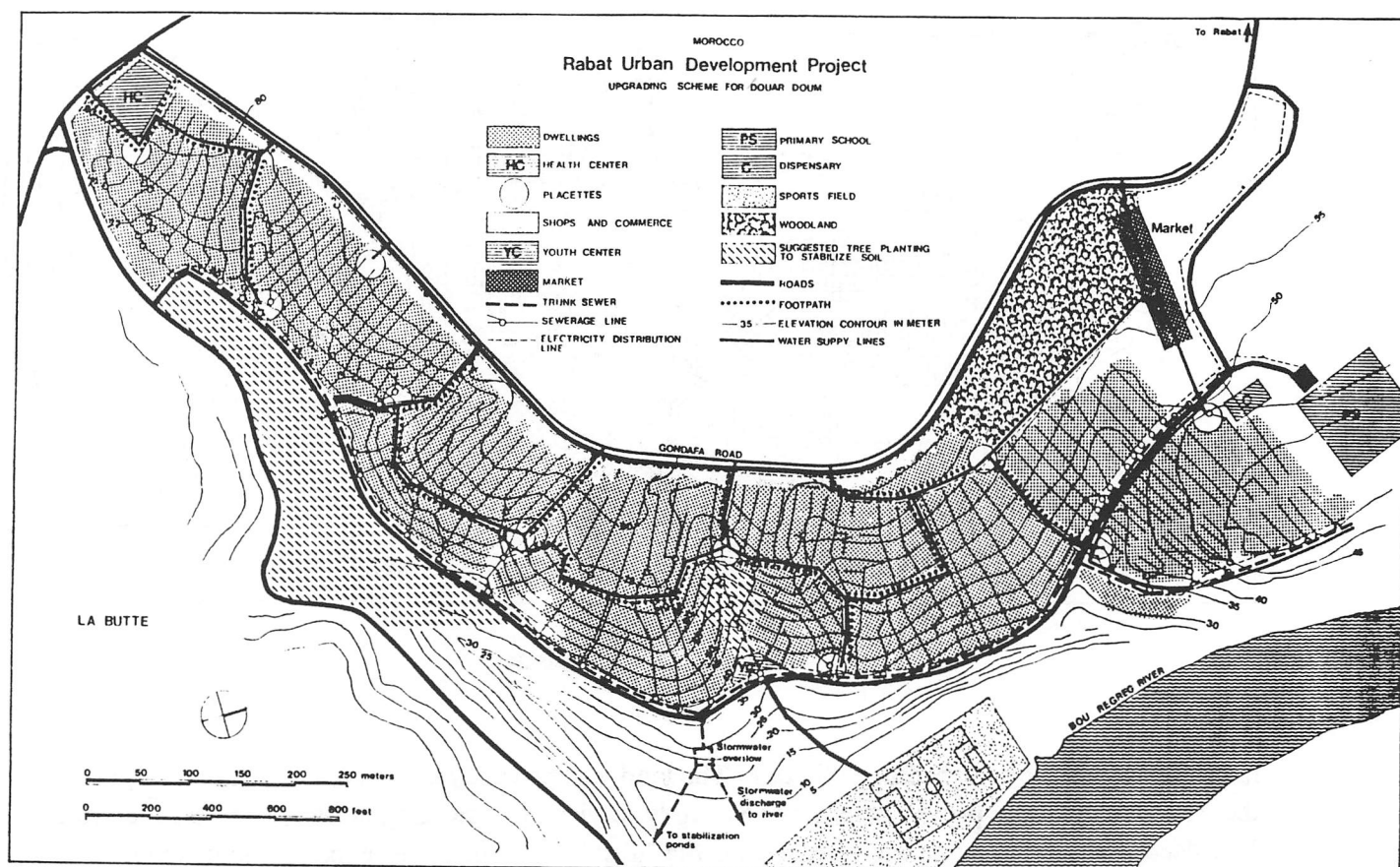


Figure 23 - Douar Doum Upgrading Scheme

The difficulties encountered in the implementation of the project are indicative of the complexity of urban problems. There are no simple solutions to the issues of job creation, land management and housing affordability. For example, the difficulties encountered in identifying and locating the vast number of landowners in Hajja and Maadid were overwhelming. It delayed project implementation and in the end the government had to acquire the land by eminent domain in 1984.

5.3.3 The core housing project: La Butte. La Butte is developed across the dry river bed facing Douar Doum on a steep hill. The difficult site was chosen because of its proximity to the three douars since the purpose of the development was to provide relocation housing to

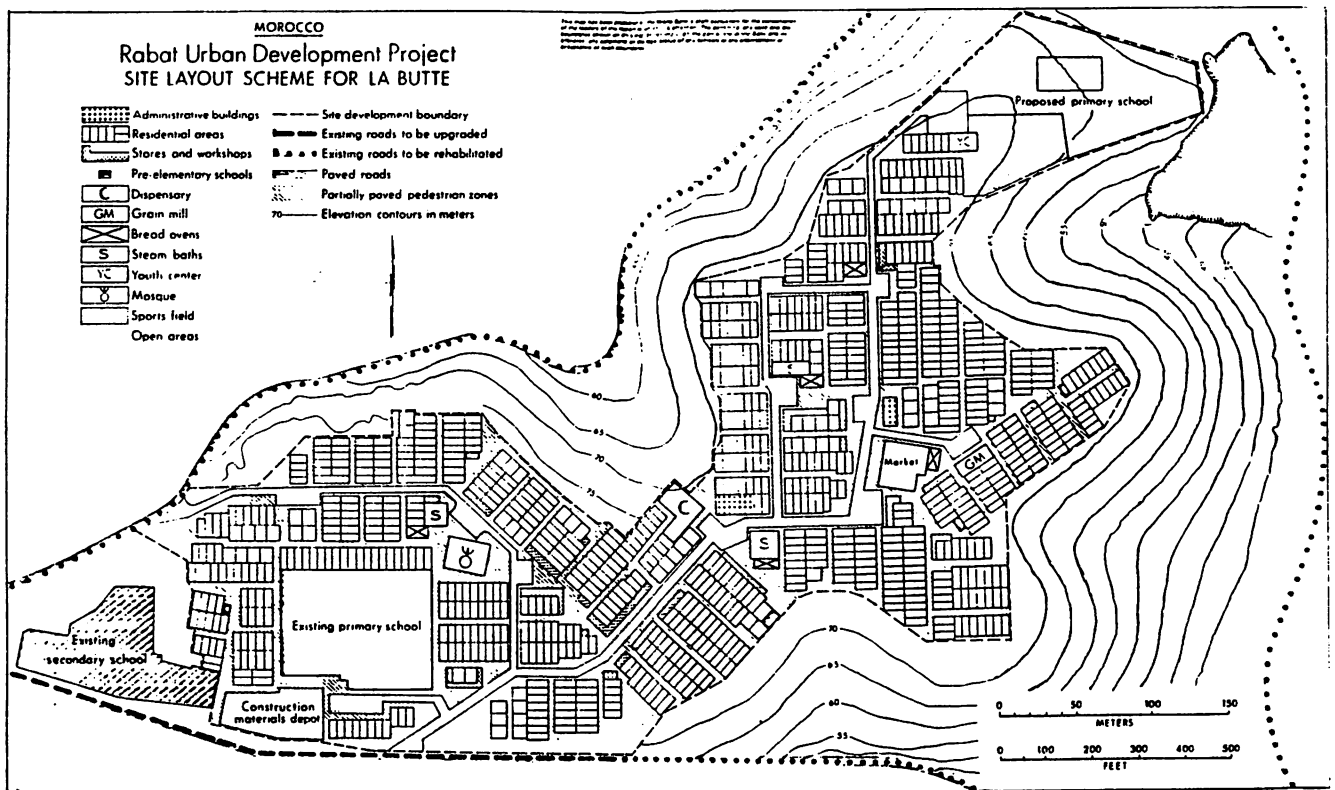


Figure 24 - La Butte

families displaced by upgrading activities. The land was privately owned and had to be acquired by the government. The project consists of 875 fully serviced lots ranging in size from 60 m² to 80 m². The deep rectangular plots are terraced on the hillside. A one-room expandable dwelling with a sanitary core was provided on each lot. Implementation proceeded rapidly. The target population consisted of households displaced by street widening required for upgrading purposes. However, over half the beneficiaries were the wealthier residents seeking to capitalize on a unique real estate opportunity. Development costs on the difficult terrain were high and the core houses were not affordable to the displaced families without important price subsidies.

La Butte has experienced feverish construction activities since 1984 when the first beneficiaries moved into the 154 houses completed in phase I. Today the vast majority of the units have been expanded to the ultimate horizontal limit and most structures have acquired one or two additional stories.

5.3.4 The Activity Zone. The site selected for the creation of a new industrial zone is located in the valley close to the river. It covers 10 hectares well served by transportation, rail and highway links. Locational advantage and financial incentives helped attract light industrial enterprises. By 1985, all of the platted lots were sold. The zone is developing fast but the size of the establishments

is larger than expected, their operations more capital intensive and their manpower needs for unskilled and semi-skilled labor much more limited.

5.4 Impact of the Upgrading Project.

5.4.1 Housing. Upgrading in Doum began in 1983. Within a year, 400 construction units were built on the existing stock of 3,420 lots and, thereafter, about 40 units were built every month. House improvements occurred primarily in the most accessible areas close to Goundafa Street and Route D1. In the first five years, 1,300 dwellings were rebuilt and at present, the rate seems to have stabilized at 30. The importance of access to water and electric connections is such that priority is given to the street frontage, the fence or exterior wall upon which electric and water-meters are attached. Given the present progress of works, it will probably take 10 years to completely transform Douar Doum from shanty town to permanent settlement.

Expectations of imminent access to utilities and the availability of recent additions to the housing stock have attracted new households to the three settlements. Household sizes have also increased, an indicator of greater stability and better incomes. In Doum, densification resulted from the subdivision of parcels into smaller lots. In Maadid and particularly in Hajja, it occurred though vertical expansion of existing structures.

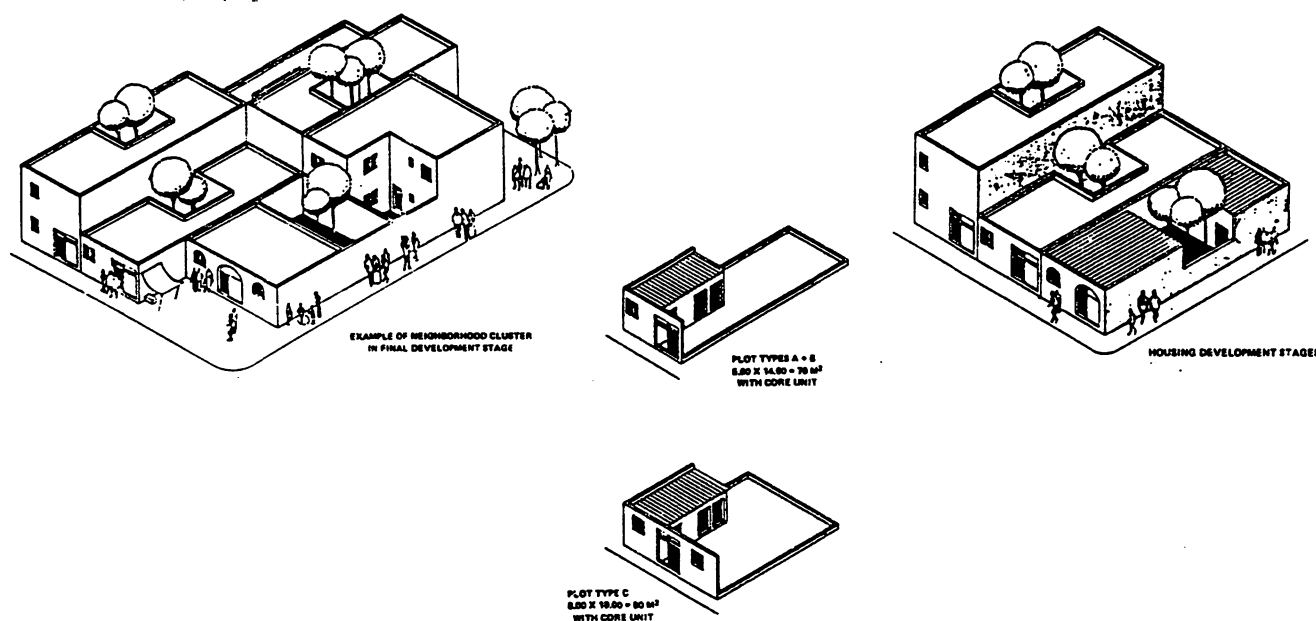


Figure 25 - Housing Improvements, La Butte

5.4.2 Infrastructure and community facilities. The circulation network, water supply pipes, sewerage systems and electric lines were completed by 1988. Construction was hampered by topography and changes in the alignments of Route D1 affecting the primary lines to which the networks linked. Work was undertaken from 1978 to 1980 in La Butte, from 1980 to 1982 in Hajja and from 1982 to 1984 in Maadid and completed in 1984 in Doum.

Four health centers and primary schools in Doum, Hajja, Maadid and La Butte were built and operative in 1982. The vocational training center opened in 1987.

5.4.3 Commercial and industrial activities. Two open air markets and 120 shops were built in La Butte but many premises are still vacant. Their number and location do not correspond with existing consumer needs.

Small-scale enterprises from all three Douars were supposed to relocate in the new industrial zone. The hope of attracting small- and medium-scale, labor-intensive enterprises has yet to be fulfilled.

5.4.4 Real estate market. According to an evaluation undertaken in 1984 by the INAU (Institut National d'Aménagement et d'Urbanisme), the selling price of a two- or three-room *zriba* dwelling in Doum, in the part that had not yet been upgraded ranged from 15,000 to 42,000 DH depending on lot size, access and the quality of materials and construction. In 1976, the price of such a dwelling was lower than 5,000 DH. Rental prices exhibited similar increases. The same situation prevails in Hajja and Maadid. The price of commercial premises and lots is increasing even faster. A shop in Goundafa Street which sold at about 4,000 DH in the 1970s, would fetch as much as 60,000 DH today.

The fear that sharply rising prices would lead to a slowdown in the real estate market has not materialized. The presence of 25 *samsars* (real estate brokers) in Hajja and Maadid indicates that the market remains very active. A significant number of transactions involve speculative investments in search of windfall profits rather than housing needs.

5.5 Selected Case Histories.

Case histories from the settlements of the southern fringe of Rabat illustrate the processes of housing development, formal and informal, on the outskirts of the city. They are representative of the range of socioeconomic groups found in the southern sector of Rabat.

5.5.1 Doum (Shacks A & B). Both shacks house relatively large families of eight and seven, respectively. In both families, three of the children are unemployed with the remaining either working or in school. Both Shack A and Shack B were remodelled with Family A adding a room and a shed and Family B adding two rooms and a kitchen. Both shacks lack water and electricity

connection, but whereas Family A cannot afford connections, Family B chooses to do without in order to avoid the mandatory inspection by public officials necessary for legal authorization. The lack of water connections in both shacks represents a serious problem in Doum since the nearby public taps were shut down. Shack A provides a striking example of poverty with the added room in a state of deterioration and all family members living in the rudimentary shed while Shack B is in relatively good condition (painted) with stone walls and solid traditional roofing. Family A paid approximately Dh 600 for the shack construction 20 years ago. Family B incurred minimal expenses since the head of the household is a mason and works as a foreman in the construction business.

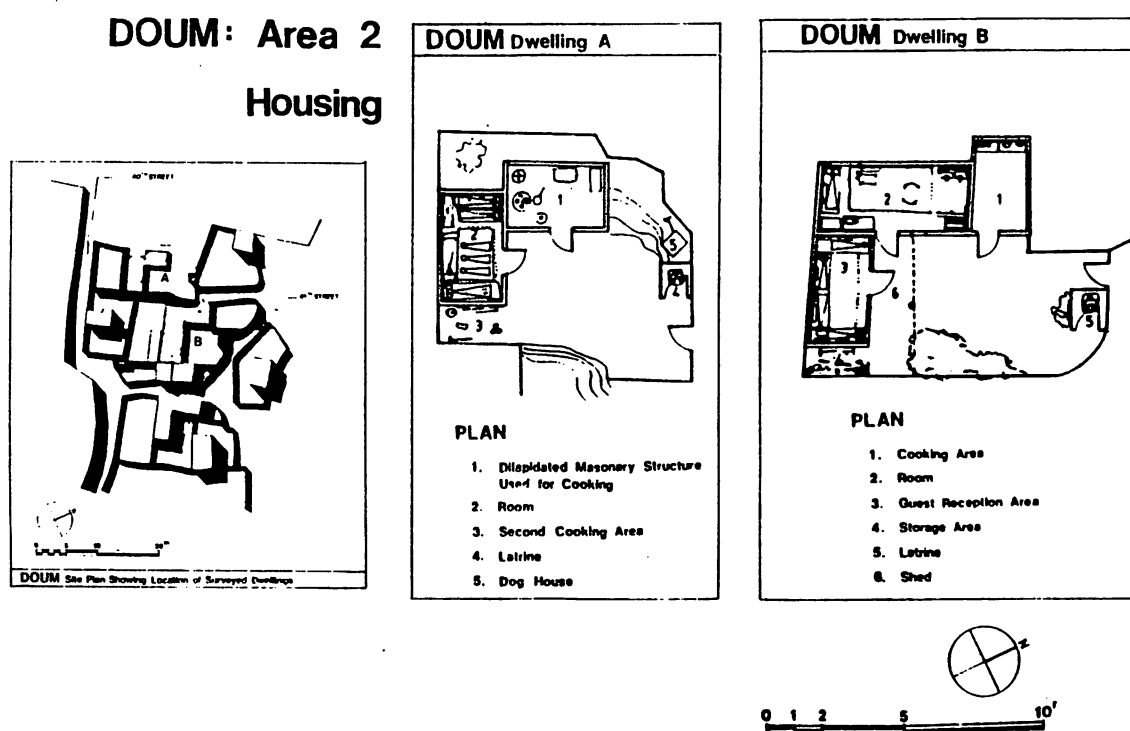


Figure 26 - Doum Shacks A and B

5.5.2 Doum (Houses A & B). Both *zribas* house relatively large families of eight with some children in school, others unemployed and uneducated and one working in weaving and knitting at home. Both families have lived in Doum for over 20 years, with family members joining the men after enough money had been saved to support eight people. Remodelling was undertaken in both houses with Family A adding space, electricity and water connections and Family B adding a room, a shower and tiles. In addition, Family B covered over the mandated open to sky space obstructing light and ventilation at the ground level. Labor and construction costs for remodelling were about

the same for both households: Family A paid the *maalem* Dh 5,400 while Family B paid Dh 6,000. Construction costs totalled approximately Dh 37,000 and Dh 40,000, respectively. Family A rented their house for Dh 25 a month until they acquired it in 1984 at no charge yet under the regularization and upgrading program. In addition, Family A was able to obtain the abutting lot for expansion at no cost. While Family B seems to live at an average level compared to other households in Doum, Family A's assets in their native village and the quality of their new house suggest a higher standard of living.

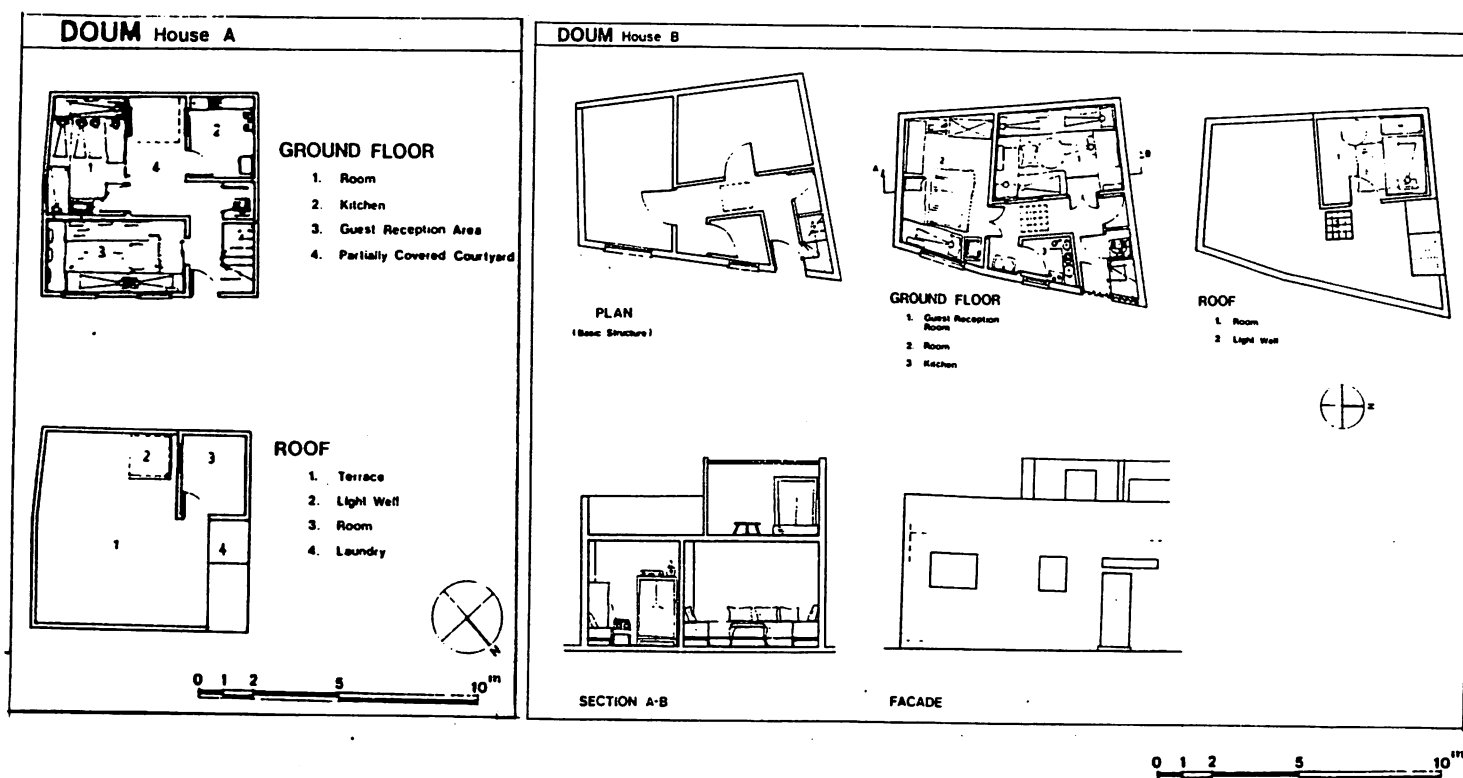


Figure 27 - Doum Houses A and B

5.5.3 Takadoum. Mr. X, a retired employee of the Bank of Morocco, has lived in the same Ecochard house in Takadoum since 1954 with his wife, two children, two dependents and an employee. The Bank of Morocco financed land and construction costs of economic housing units in the late 1950s. Mr. X received Dh 3,500 from the Bank to acquire the plot which he paid back at Dh 40 a month over 10 years. Construction costs were covered by Dh 10,000 of personal savings and a Dh 1,700 loan from the Bank. In 1969, Mr. X began construction of an additional floor in which the rooms are organized around a space with a skylight, replacing the original courtyard. The first floor of the house was transformed into a shop in 1980 upon Mr. X's retirement from the Bank.

Mr. X did not state his income, but the quality of the construction and the shop suggest that it is higher than the norm in surrounding settlements.

5.5.4 La Butte. Mr. Y, 30 years old and an independent truck driver, rents his services on a daily basis for Dh 35 a day since he does not own his own truck. Mr. Y's family (an unemployed wife and three children, including one student) shares a 2-story house with Mr. Y's brother-in-law and his family, each occupying one floor. Mr. Y relocated to his current house in La Butte after being displaced three years ago from Hajja due to road widening. Mr. Y and his brother in law shared the construction costs of their new house in La Butte (valued at Dh 10,000) and financed it through personal savings and the sale of jewels. Some remodelling was undertaken: the courtyard was covered and divided into two levels; the locations of the W.C. and kitchen were changed; electricity and water connections were installed. The electricity connection was paid for in cash (Dh 600) and the water connection through monthly payments of Dh 150 over three years. Since the two families possess only one source of electricity and a single water tap, the monthly bill of about Dh 100 is divided equally.

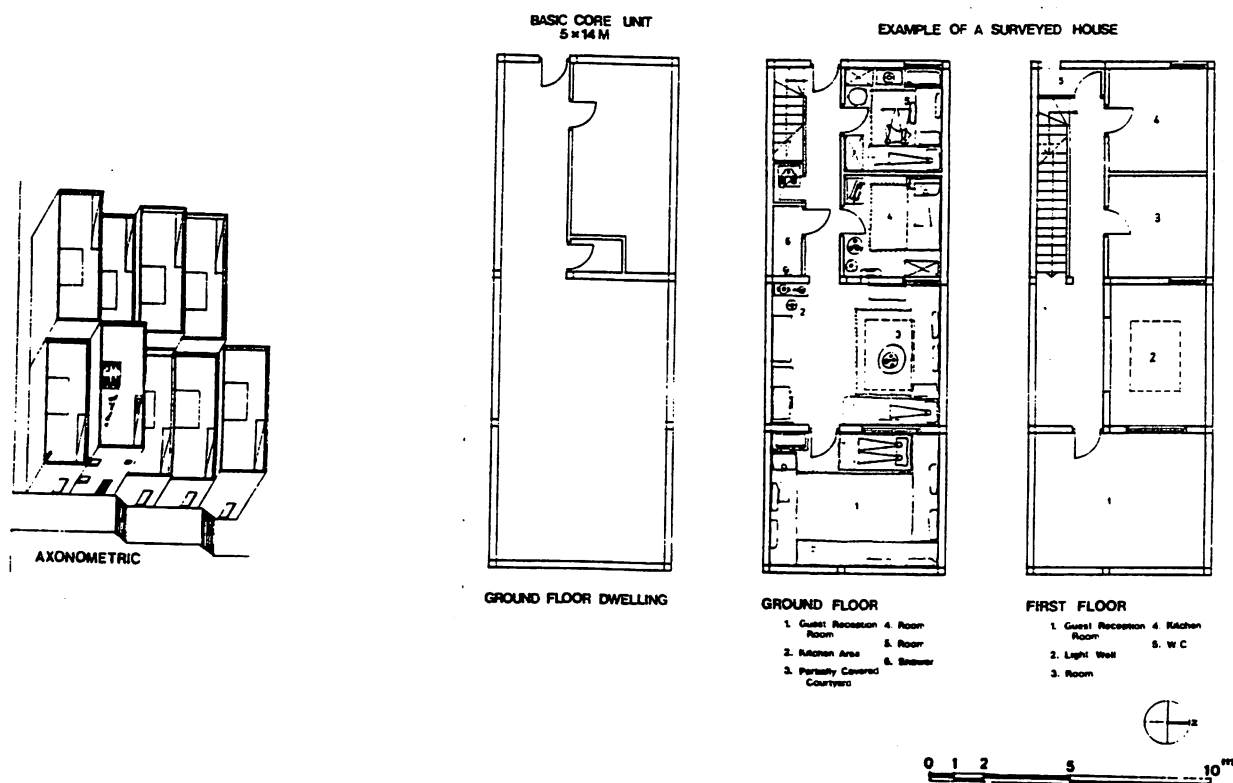


Figure 28 - House in La Butte

5.6 Housing Expenditures.

Household size and income are the two basic determinants of housing consumption. The best source of information on income and expenditure patterns is found in the family budget surveys which are undertaken periodically. The last such survey in Morocco dates back to 1970-71 and is therefore somewhat obsolete. Nevertheless it still provides a good indicator of the impact of family size and composition on the allocation of disposed income.

The income distribution for Rabat and Hajja takes into account families without permanent dwellings or jobs which are excluded from the survey sample. The income figures have been updated to 1986 based on the salary scale of government employees and adjusted to take into account households with more than one wage earner, multiple job holdings, transfers from members working abroad and other sources of income. The allocation of household expenditures among commodity classes is detailed in the statistical appendix. The occupational categories cover the range of income levels found in Rabat. Food is the dominant budget item, accounting for over 60% of expenditures of lower income households.

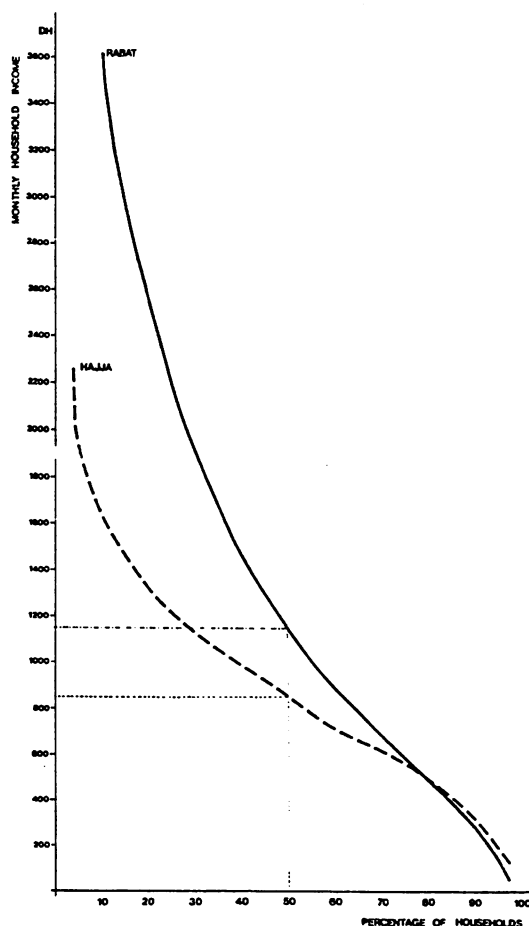


Figure 29 - Household Income Distribution

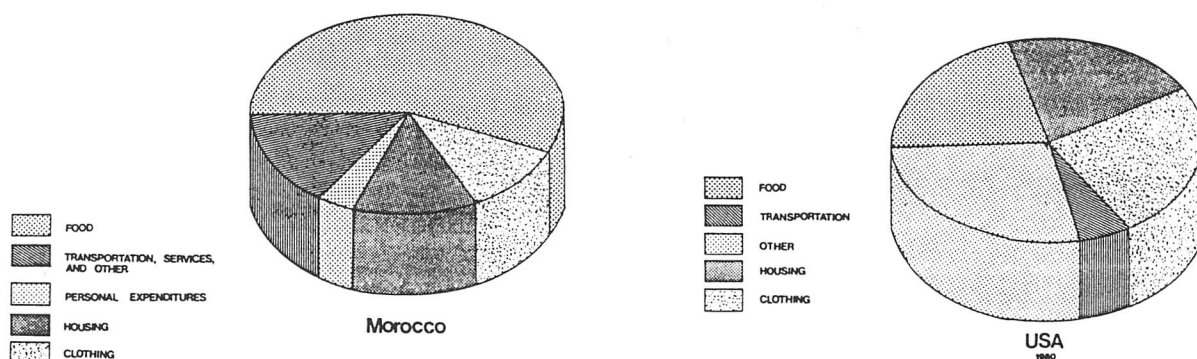


Figure 30 - Household Income Expenditures

Although housing costs are lower than in many western countries largely as a result of overcrowding. Many families still do spend 20 to 25% of their income on housing. Food and transport are the two categories of expenditure which have escalated at an accelerating rate. This places a heavy burden on large families and lower income households who are forced to devote a greater proportion of their earnings to food and are often forced to commute over long distances to work.

Very few families would consider devoting additional income to housing except for access to home ownership or, in the case of property owners, to expand their buildings.

There has been a substantial increase in expenditures in western style home furnishings and modern appliances. These items have become status symbols among all segments of the population. They have introduced a need for sharper functional organization of space within the dwelling and in the process increased space consumption.

In general incomes have kept up with construction costs depressed by the slowdown in larger scale activities during the recession. In contrast, the escalation in land values has far outstripped income gains. Land thus emerges as the main bottleneck in the housing market frustrating the aspirations of limited income families to have a decent house of their own.

When land is no longer an issue housing development proceeds swiftly as families mobilize all their resources to build their dream house. At times like this, the proportion of income devoted to housing can exceed 30%. The transformation of regularized bidonvilles and the rate of buildup at relocation sites clearly demonstrate that household incomes and savings have been generally underestimated among limited income groups.

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TABLE 1

BASIC INDICATORS

	GNP		POPULATION		GNP/capita		
	1986 (US\$ 000,000)	Real Growth Rate 1973-86	1986 (000)	Growth Rate 1973-86	1986 (US\$)	Real Growth Rate 1973-86	Real Growth Rate 1985-86
Morocco	13,160	3.9%	22,484	2.4%	590	1.5%	4.9%
Algeria	58,040	5.6%	22,582	3.2%	2,570	2.4%	-3.2%
Tunisia	8,340	5.1%	7,311	2.4%	1,140	2.7%	-3.8%
Mauritania	760	1.8%	1,735	2.1%	440	-0.3%	2.2%
Mali	1,330	2.9%	7,702	2.5%	170	0.4%	6.9%
France	595,180	2.0%	55,434	0.5%	10,740	1.5%	1.9%
Spain	188,030	1.7%	38,860	0.9%	4,840	0.8%	3.2%
Portugal	22,880	2.1%	10,283	1.0%	2,230	1.1%	4.2%
U.S.A.	4,221,750	2.5%	241,252	1.0%	17,500	1.4%	1.9%
Canada	361,720	2.4%	25,655	1.2%	14,100	1.2%	1.8%

Source: World Bank Atlas, 1988 update of the 1987 World Bank Atlas

TABLE 2

BASIC INDICATORS

	Average Annual rate of inflation (%)		Area (thousands sq.km.)	Life expectancy at birth (years) 1986
	1965-80	1980-86		
Morocco	6.1	7.7	447	54
Algeria	9.9	6.1	2,382	62
Tunisia	6.7	8.9	164	63
Mauritania	7.7	9.9	1,031	47
Mali	--	7.4	1,240	47
France	8.0	8.8	547	77
Spain	11.8	11.3	505	76
Portugal	11.5	22.0	92	73
U.S.A.	6.4	4.4	9,363	75
Canada	7.9	5.5	9,976	76

Source: World Devt. Report, 1988 (Table 1)

TABLE 3
MOROCCO
NATIONAL ECONOMY

GDP (millions US\$)		Annual growth rate of GDP (%)	
1965	1986	1965-80	1980-86
2,950	14,760	5.4	3.3

Source: World Devt. Report, 1988

	Percentage of GDP		Annual growth rate (%)	
	1965	1986	1965-80	1980-86
Agriculture	23	21	2.2	3.9
Industry	28	30	6.1	1.1
(Manufacturing*)	(16)	(17)	5.9	1.1
Services, etc.	49	49	6.5	4.4

*Manufacturing shown separately as most dynamic sector of industry

Source: World Devt. Report, 1988

TABLE 4
URBANIZATION

	Urban Population				% Urban Population				Number of cities of over 500,000 people	
	as % of total population		average annual growth rate		in largest city		in cities of over 500,000 people			
	1965	1985	1965-80	1980-85	1960	1980	1960	1980	1960	1980
Morocco	32	44	4.2	4.2	16	26	16	50	1	4
Algeria	38	43	3.8	3.7	27	12	27	12	1	1
Tunisia	40	56	4.2	3.7	40	30	40	30	1	1
Mauritania	7	31	12.4	3.4	--	39	0	0	0	0
Mali	13	20	4.9	4.5	32	24	0	0	0	0
France	67	73	2.7	1.0	25	23	34	34	4	6
Spain	61	77	2.4	1.6	13	17	37	44	5	6
Portugal	24	31	2.0	3.3	47	44	47	44	1	1
U.S.A.	72	74	1.2	2.3	13	12	61	77	40	65
Canada	73	77	1.5	1.7	50	32	50	32	1	1

Source: World Dev't. Report, 1988 (Table 32)

TABLE 5

POPULATION

	1921	1960	1971	1978	1982
Rabat	31,000	175,000	370,000	495,000	520,000
Sale	24,000	70,000	155,000	230,000	240,000
Total	55,000	245,000	525,000	725,000	810,000

Source: 1982 Census of Morocco

TABLE 6
AGE-SEX STRUCTURE
OF THE POPULATION

Age group	Total (%)	Males (%)	Females (%)
0-4	15.2	15.4	15.0
5-9	14.3	14.6	14.1
10-14	12.6	12.9	12.3
15-19	10.9	10.8	11.1
20-24	9.8	9.7	9.8
25-29	7.6	7.7	7.5
30-34	5.6	5.5	5.7
35-39	4.1	3.9	4.4
40-44	4.3	3.9	4.7
45-49	3.5	3.4	3.6
50-54	3.5	3.3	3.6
55-59	2.2	2.3	2.1
60+	6.4	6.6	6.1
TOTAL	100.0	100.0	100.0

Source: Census, 1982

TABLE 7

LABOR FORCE

% of population of working age (15-64 years)		Percentage of labor force in:						Average annual growth of labor force (%)			
		Agriculture		Industry		Services					
								1965	1985	1965	1985
1965	1985										
50	52	61	46	15	25	24	29	2.9	3.3	3.1	

Source: World Bank Report, 1988

TABLE 8

URBAN ECONOMICALLY ACTIVE POPULATION
BY OCCUPATION AND ACTIVITY SECTOR

Sector	Salaried Employees (%)	Employers (%)	Self-Employed (%)	Apprentices (%)	Working at home (%)	Member of a Cooperative	Unspecified %
Agriculture	61.5	6.7	19.4	6.8	--	5.4	0.1
Mining	98.4	0.9	0.3	--	--	0.5	--
Manufacturing	55.2	2.7	7.9	10.5	22.8	0.9	0.1
Repairs	43.1	5.3	21.5	25.9	0.9	3.2	0.04
Utilities	98.7	0.2	0.7	0.3	--	--	--
Construction	81.3	3.8	11.3	3.0	--	0.6	0.1
Wholesale and Retail	23.6	3.5	60.1	8.8	--	4.0	0.1
Hotels and Restaurants	79.4	6.6	6.6	4.6	--	2.7	--
Transport and Communications	76.1	0.9	18.5	1.2	--	3.1	0.1
Business Services	83.9	4.6	8.8	0.7	0.1	1.9	--
Personal Services	73.5	2.0	18.9	3.0	1.6	0.9	0.1
Public Services	94.1	1.0	3.6	1.0	0.1	0.3	0.1
General Administration	100.0	--	--	--	--	--	--
Unclassified Activities	60.4	1.5	9.9	8.1	0.7	1.2	18.2

Source: Statistical Abstract, 1987

TABLE 9

WAGES & SALARIES OF GOVERNMENT EMPLOYEES
SELECTED CATEGORIES - 1986
(NET MONTHLY PAY IN DH)

Minimum wage level	820
Service worker	820-980
Field worker	930-1140
Mailman	1060
Clerical	1000-1690
Technical	1160-1440
Secretarial	1050-1890
Administrators	2370-4600
Data processor	2260
Technician	1640-2060
Engineers	2890-4260
School teachers	2020-2500
University profs.	3100-6770

Source: Statistical Abstract, 1987

TABLE 10
EARNINGS OF PUBLIC SECTOR EMPLOYEES

Salaries (DH)	Total Employees	Female Employees	
	Percent Distribut.	Proportion of Total	Percent Distribut.
<7,500	1.2	35.8	1.5
7,500-10,000	5.6	40.8	8.1
10,000-12,500	9.3	35.7	11.7
12,500-15,000	12.7	36.2	16.2
15,000-17,500	13.3	33.6	15.7
17,500-20,000	17.1	31.8	19.2
20,000-22,500	11.2	25.5	10.1
22,500-25,000	8.4	20.4	6.0
25,000-27,500	6.8	20.4	4.9
27,500-30,000	4.6	16.6	2.7
30,000-32,500	2.9	15.6	1.6
32,500-35,000	1.7	9.8	0.6
35,000-37,500	1.2	6.2	0.3
37,500-40,000	0.6	6.2	0.1
40,000+	3.4	11.4	1.5
TOTAL	100% 311,064	28.4%	100% 88,288

Source: Statistical Abstract, 1987

TABLE 11
COST OF LIVING INDEX - RABAT - 1986

Costs	Increase (72/73=100)	Relative weight
Food	403	54.0
Clothing	290	8.5
Housing	372	13.8
Rent	318	5.8
Maintenance	611	1.2
Utilities	353	3.0
Furniture	341	2.1
Appliances	697	1.6
Health & Personal care	266	5.5
Transport&Miscellaneous	385	18.5
General Index	378	100.0

Source: Statistical Abstract, 1987

TABLE 12

HOUSEHOLD EXPENDITURE PATTERNS
BY EMPLOYMENT CATEGORY

Commodity	Professional, Technical	Managerial	Clerical	Sales	Farmers	Laborers
Food	38.9	30.4	41.4	49.8	64.2	63.9
Clothing	8.9	10.5	11.6	9.8	11.4	12.8
Housing	22.3	25.0	21.4	21.1	15.2	13.6
Transport	6.9	8.0	5.9	5.2	3.1	3.6
Other	23.0	26.1	19.7	14.1	6.1	6.1
Total	100.0	100.0	100.0	100.0	100.0	100.0

Commodity	Industry, Mines	Transport, Services	Craftsmen	Miscellaneous Categories	Not in labor force	Total
Food	50.9	50.5	55.6	52.2	51.6	54.0
Clothing	9.8	9.0	8.6	14.5	9.1	10.4
Housing	19.2	20.8	20.8	18.6	25.1	18.9
Transport	5.4	5.2	5.0	3.2	4.8	4.6
Other	14.7	14.5	10.0	11.5	9.4	12.1
Total	100.0	100.0	100.0	100.0	100.0	100.0

Source: Family Budget Survey, 1970-71

TABLE 13
URBAN AREAS - DWELLING UNIT SIZE

Number of rooms	1971	1982
1	33.2	22.7
2	37.6	33.1
3	18.2	24.8
4	6.7	10.6
5	2.2	4.0
6	1.2	2.7
7	0.4	0.9
8+	0.5	1.2
TOTAL	100.0	100.0

Source: Census, 1982

TABLE 14
HOUSING TENURE - PERCENTAGE DISTRIBUTION OF HOUSEHOLDS

Tenure	Villa or floor in villa	Apartment	Moroccan house	Room in group quarters	other dwelling units
owner or joint owner	42.0	20.7	43.8	4.8	9.6
under regularization	3.5	2.1	2.4	0.2	0.2
renter	29.0	65.2	40.8	28.9	56.5
employer housing	15.2	4.1	2.9	32.2	3.1
free housing	6.2	4.3	7.2	32.2	25.7
other	0.7	0.2	0.4	0.4	2.5
not specified	3.1	3.3	2.0	1.2	2.3
hypothetical	0.3	0.1	0.5	0.1	0.1
TOTAL	100.0	100.0	100.0	100.0	100.0

Source: Census of Population and Housing, 1982

AMENITIES IN URBAN DWELLINGS -
PERCENTAGE DISTRIBUTION OF HOUSEHOLDS

TABLE 15

Amenities	Private	Shared	None
Kitchen	69.7	2.2	28.1
W.C.	71.4	13.9	14.7
Bath or shower	23.0	0.4	76.5
Bathtub	2.4	0.1	97.5
Piped water	43.3	19.6	37.1
Water well	5.6	3.0	91.3
Electricity	65.1	9.4	25.6

Source: Census of Population and Housing, 1982

TABLE 16
URBAN HOUSEHOLDS
SPACE CONSUMPTION PATTERNS

Dwelling size (rooms)

Household size	Total Households	1	2	3	4	5	6	7	8	Total rooms
1	8.97	22.16	6.64	4.56	3.54	3.13	2.33	2.82	3.00	6.06
2	10.48	17.73	10.82	7.59	5.90	4.69	4.65	3.52	4.50	8.29
3	11.29	15.24	12.33	9.87	7.67	4.69	4.65	4.23	4.50	9.67
4	11.73	13.30	13.28	11.14	9.43	7.81	6.98	5.63	5.00	10.64
5	13.24	11.91	14.04	13.92	13.56	12.50	9.30	9.15	11.00	13.21
6	10.54	7.48	11.39	11.65	11.79	12.50	9.30	11.27	7.00	10.98
7	9.60	5.26	10.44	10.89	11.20	12.50	11.63	11.97	11.50	10.52
8	8.03	3.32	8.16	9.87	10.61	10.94	13.95	13.38	11.00	9.35
9	6.15	2.22	5.69	7.85	8.84	9.38	9.30	9.15	10.50	7.37
10	9.97	1.66	7.02	12.15	17.10	21.88	27.91	27.46	34.50	13.93
TOTAL	100.00	100.28	99.81	99.49	99.61	100.02	100.00	98.58	102.50	100.02
GRAND TOTAL	100.00%*	22.65	33.06	24.78	10.66	4.02	2.70	0.88	1.25	

*Total number of households = 1,594,259

Source: Census of Population and Housing, 1982

TABLE 17

CHARACTERISTICS OF NEW CONSTRUCTION
RESIDENTIAL BUILDINGS - 1986
CASABLANCA/RABAT

	Apartment Buildings	Villas	Moroccan Houses
Flat size (m ²)	104/252	154/160	64/81
Floor area (m ²)	456/994	344/299	135/175
Number of building permits	1275/630	839/1141	6779/6002

Source: Statistical Abstract, 1987

TABLE 18

CHARACTERISTICS OF NEW CONSTRUCTION
RESIDENTIAL BUILDINGS - 1986
RABAT-SALE AREA

	Apartment Buildings	Villas	Moroccan Houses
	Dwelling units/ rooms	Dwelling units/ rooms	Dwelling units/ rooms
Rabat Center	932/2787	11/31	12/35
Sale	868/2676	23/136	1589/4675
Yacoub el Mansour	1165/4936	343/2422	721/2834
Yousseoufia	412/1575	173/1410	560/1442

Source: Statistical Abstract, 1987

TABLE 19
HEALTH FACILITIES

Type	Rabat	Sale
Private clinics	10	1
Dispensaries	18	10
Health centers	7	4
Obstetric clinics	5	1
Family planning clinics	8	5
Hospitals	5	3
Public hospital beds	2399	402
Beds in pub. health cen.	30	51

Source: Statistical Abstract, 1987

TABLE 20
MOROCCO - 85/86 SCHOOL ENROLLMENT (1000s)

	Primary School		Secondary School		Higher Education	
	Male	Female	Male	Female	Male	Female
Enrolled public	1363	840	672	441	106	53
Enrolled private	40	32	53	33		
TOTAL	1403	871	726	475	106	53
Age group	2253	2172	1934	1907	1100	1090
Enrollment rate	62.3	40.1	37.5	24.9	9.6	4.9

Source: Statistical Abstract, 1987

TABLE 21
DENSIFICATION OF FRINGE SETTLEMENTS

A - POPULATION

	1976	1982	% increase
Doum	17,500	21,024	20
Hajja	19,500	27,133	39
Maadid	22,500	26,294	19
La Butte	--	1,995	100

Source: Fathallah Debbi, "La Planification Urbaine, ses outils, ses limites et ses significations: Le cas de l'agglomeration de Rabat-Sale" (Paris, 1984)

TABLE 22

B: -. DENSITIES

	1977		1982	
	persons/ha	households/ha	persons/ha	households/ha
Doum	729	150	876	157
Hajja	1,026	189	1,428	269
Maadid	1,100	225	1,314	239

Source: Fathallah Debbi, "La Planification Urbaine, ses outils, ses limites et ses significations: Le cas de l'agglomeration de Rabat-Sale" (Paris, 1984)

TABLE 23
HOUSEHOLD SIZE AND INCOME
IN FRINGE SETTLEMENTS

	income per household (1976)	income per capita (1976)	average size of household
Doum	381 DH	78 DH	4.9
Maadid	397 DH	80 DH	4.9
Hajja	513 DH	90 DH	5.2

Source: Fathallah Debbi, "La Planification Urbaine, ses outils, ses limites et ses significations:
Le cas de l'agglomération de Rabat-Sale" (Paris, 1984)

TABLE 24
LA BUTTE
A - LAND USE DISTRIBUTION

Land Use	Hectares	Percentages
Residential	5.9	49.2
Community Facilities	1.7	14.2
Commercial	0.7	5.0
Open Space	1.2	10.0
Circulation	2.5	21.6
TOTAL	12.0	100.0

Source: Rabat Urban Development Project, 1978

TABLE 25
B - RESIDENTIAL PLOT OPTIONS

Type	Frontage (m)	Depth (m)	Area (m ²)	Number	Percentage
A	5	12	60	520	57.8
B	5	14	70	300	33.3
C	8	10	80	80	8.9
TOTAL				900	100.0

Source: Rabat Urban Development Project, 1978

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