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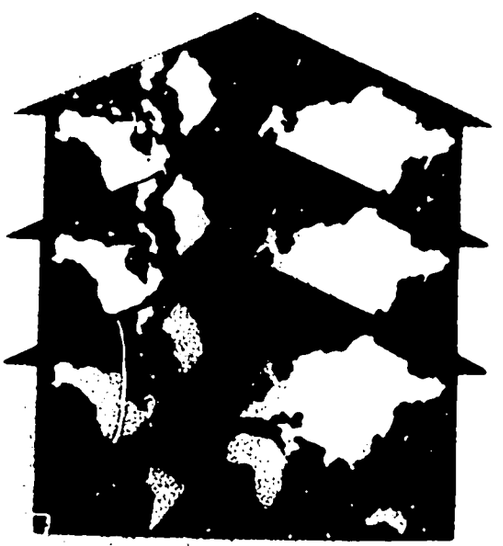
January 1979



AGENCY FOR INTERNATIONAL DEVELOPMENT

OFFICE OF HOUSING

DEPARTMENT OF STATE
AGENCY FOR INTERNATIONAL DEVELOPMENT
WASHINGTON, D.C. 20523

FOREWORD

This study was conducted during 1978 by the National Savings and Loan League under the auspices of the Office of Housing of the Agency for International Development and through funding provided by this Office. The purpose of this study was to develop information and make recommendations relating to the shelter sector in Tunisia.

The study team was led by Edward H. Robbins of the National League staff. Sonia Hammam, William Shimasaki and Professor Paul Strassmann, consultants to the National League, were other team members.

The findings and recommendations of the report have been reviewed in detail and discussed with representatives of the Government of Tunisia. Special thanks for their participation are due Mme. Najet Khantouche and Mr. Abdelaziz Sellami of the Ministère d'Equipement and Mr. Abdelhamid Bouhaouela of the Ministère du Plan.

While the report results from close cooperation of the team and its Tunisian counterparts, it is not to be interpreted as an official position of either Government or the Agency for International Development.

We hope, however, that the Government of Tunisia will find the report and its recommendations useful as it formulates and implements its future shelter programs.

Peter M. Kimm
Director
Office of Housing

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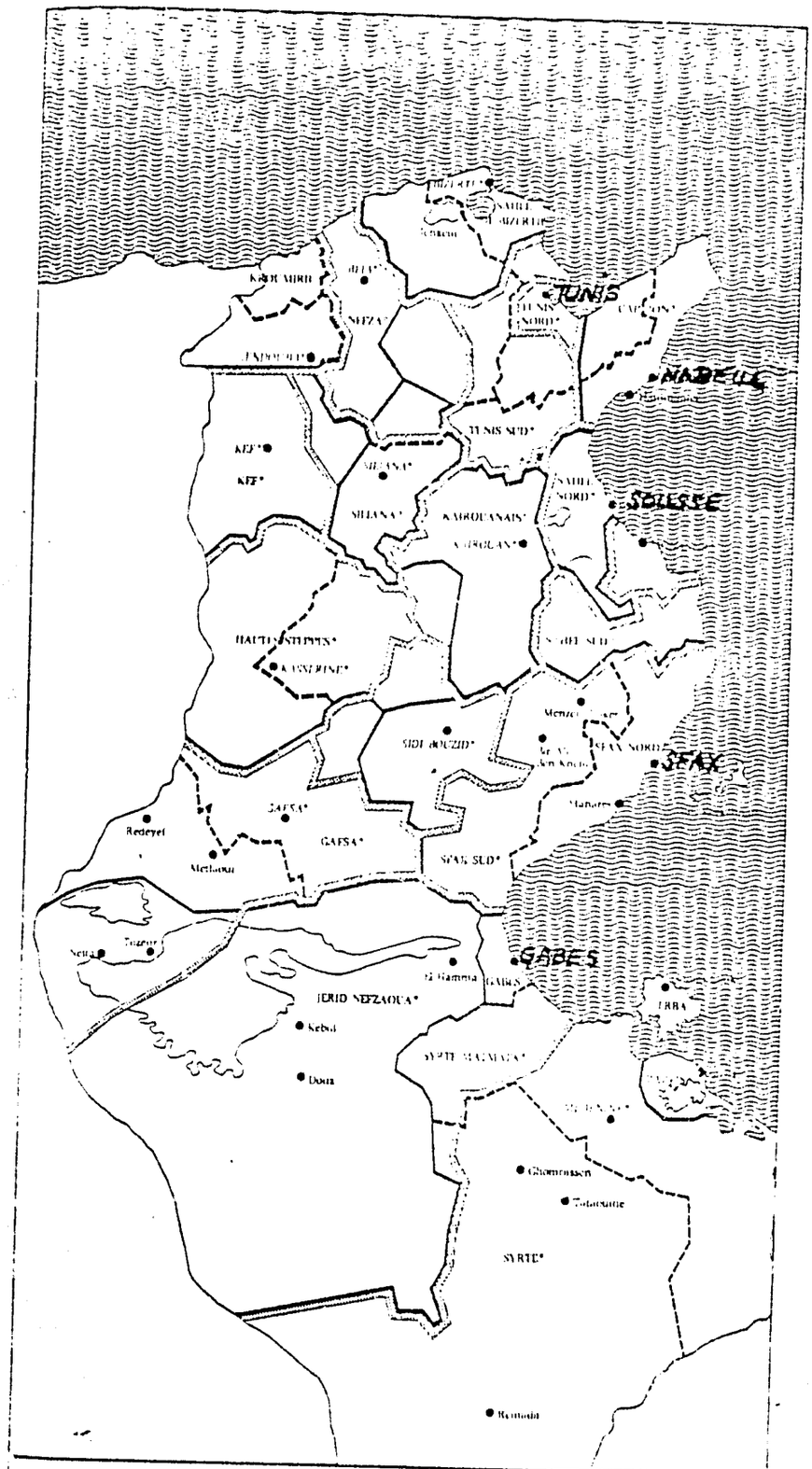
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TUNISIA

FIG.1

SUMMARY AND RECOMMENDATIONS

The GOT commitment to improvement of conditions in the shelter sector is an important one, and many of the obstacles to increased production and to improvement or urban infrastructure have been cleared away.

It is always possible to explain shelter problems in terms of insufficient financial resources or materials. In fact, however, the poor are most ingenious at finding ways to circumvent, to some degree, these obstacles when shelter is concerned. The authors of this report would prefer to suggest that the constraints of particular and immediate interest are usually institutional in nature and that it is this aspect of the sector in Tunisia which offers the greatest opportunity for change and rapid improvement.

There exist three facets of the shelter sector problem of the urban poor in Tunisia which appear to need attention if constraints to greater progress are not to become severe:

- Not enough solutions are being designed for the large percentage of the urban population whose incomes are insufficient to purchase the "logement suburbain" (average prices projected in 1976 of 3,600 D. - $8,600), or the "evolutif" built under the joint GOT-USAID program at 2,200 D. to 2,500 D. ($5,300 to $6,000).

  Roughly 50% of the urban area families nation-wide have incomes estimated to be below 77 D. per month. In order to serve these families in increasing numbers GOT shelter programs in urban areas will need to be designed to lower standards, which may mean less habitable space or minimal levels of public utilities in order to result in lower initial costs. Greater reliance on self-help construction and gradual community development should be considered.

  Expansion of shelter improvement programs in urban areas nationwide will require expanded levels of professional staff at the local (municipal) level, not so much to administer programs but to supervise their implementation, especially if that implementation takes place gradually, with community participation.

  Municipal level technical staffs do not appear adequate to supervise the efforts of individual home-owners as they expand their housing units. The problems will become more acute if making the connection to infrastructure networks is added to the work required of homeowners.

This constraint takes on special importance if the GOT decides to support a program of shelter solutions in urban areas which have much lower costs than those presently offered. Such solutions would require more direct participation by the beneficiaries and would reach "standard" sizes (e.g. two bedrooms) and get full utilities connections only gradually as a result of the effort to keep initial costs to a minimum. Such programs will require adequate supervision and technical assistance so that the self-help construction makes the best use of materials and results in durable improvements to shelter conditions.

Continued expansion of shelter programs for the urban poor may be too closely tied to continued expansion of GOT budget allocations for such activities. The direct commitment of GOT budget funds to the housing programs was reduced from 1977 to 1978, but it is not clear that the resources which will replace these investments can be relied on to grow automatically in the long term. It seems likely that a greater effort will be required to develop programs which generate additional working capital by themselves.

The following chapters of this study are intended to help the reader identify conditions which may constrain GOT efforts to continue to increase the level of low-cost housing production and the improvement of shelter conditions for low-income families. In many cases these conditions have already been identified by the government's own shelter sector experts. They are the focus of concern as the nation advances towards the objectives of the Fifth Development Plan, and should also be considered in the preparation of the succeeding Plan.

Economic Activity

Estimates for 1977 suggested that the nation's economic growth rate had slowed appreciably from the levels reached during the IVème Plan period. Drought continued to plague the nation's marginal agricultural regions, and export markets were not as strong. The government has relied increasingly on foreign debt and deficit financing to fuel the steady growth in economic activity. Nevertheless, foreign debt servicing took about 12.5% of export earnings (11.5% if workers' remittances were added to export earnings), a level below that of many of the nations classified along with Tunisia as "intermediate middle-income countries" by the World Bank. IMF analysis does not expect this debt service ratio to exceed 20% by 1987.

The government deficit was expected to reach TD. 223 million ($533 million) in 1978. While the consumer price index rose approximately 6% per annum, a true inflation rate for all goods and services has been estimated to lie between 9 and 13% per annum. Analysis of the national economy suggests that the experience of the past 10 years has been positive

and that activity can continue to expand, but that the nation's economic policies must begin to take more account of the pace of growth and its effect on the national budget and the balance of payments. A lackluster economic performance in Europe may dampen Tunisia's export trade and the European job market for Tunisian workers, further exacerbating unemployment at home. The prospects for the Vème Plan period are not yet altogether clear; however, the strong performance attained during the IVème Plan has provided a good base for growth in the coming years.

Household Income Trends

Projections of median income levels have been calculated using a real growth rate of 2% per year with a conservative adjustment for inflation of 6%. According to this formula, 8.12% annually would yield a 118% increase over the ten-year period from 1975 to 1985.

TABLE A

MEDIAN HOUSEHOLD INCOME LEVEL PROJECTIONS 8.12% P.A. GROWTH RATE (DINARS)

	1975	1978	1981	1985
District of Tunis	91	115	145	199
(District of Tunis 20th percentile	46	58	74	101)
Sfax, Sousse, Bizerte, Gabes	56	71	89	122
Other towns	66	83	105	143
All urban	61	77	97	133

These calculations assume that distribution patterns remain unchanged throughout the ten-year period.

Shelter Sector Plans

With regard to the housing sector, the Vème Plan notes that replacement of the most minimal and unhealthy units ("gourbis", tents, thatch huts, etc.) over a 20-year period would require the production of 11,000 units a year. As population grows on the average by 130,000 people per year and Tunisians live in households averaging 5.5 people, about 25,000 additional units would have to be produced yearly. To reduce the current average per unit density level from 2.77 people per room to 2 people per room would require construction of 13,000 units per year over 20 years. Replacement of standard units reaching the end of their useful life would require production of 7,800 units per year.

In sum:

	Per year production
Replacement of substandard units	11,000
Reduction of density	13,000
Replacement of deteriorated units	7,800
To absorb population growth	25,000
Annual need	56,800

The plan has set 25,000 units per year as its production goal for the five-year period ending 1981, recognizing that absorbing new population alone would be challenge enough.

The Institutional Base

The shelter sector's institutional base was greatly strengthened during the IVeme Plan period. Land planning and acquisition were dealt with through a reemphasis on municipal, general and master plans and the strengthening of the regulatory powers of these plans. Better coordinated municipal planning combined with the land acquisition ability of the Agence Fonciere d' Habitation has led to the promotion of moderate cost housing projects carefully designed to fit the growth patterns and needs of the nation's principal urban centers.

Work on the planning and land reservation aspects of the shelter problem has been complemented by the reorganization of the Société National Immobiliere de la Tunisie into a regionally oriented institution with a much higher output and much improved cost controls. Private sector involvement has been encouraged since 1974 at which time laws were passed authorizing special tax incentives and interest subsidies for those real estate development companies willing to produce the types of housing considered most urgent by the national development plans.

Financing for both home buyers and developers was coordinated and made more readily available by the creation in 1974 of the Caisse Nationale d'Epargne Logement, which not only enjoys government support but also can attract private sector savings.

In addition to government programs designed to speed up the production of housing units, efforts were made to help municipal governments prepare the public facilities base required. In 1975 the national government forgave all municipal debt and strengthened the programs which would lead to better budgeting and stronger funding of municipal services. The Office Nationale d'Assainissement was also created to analyse the problem of waste collection and treatment. In fact, ONAS studies are also serving to tie municipal development to both water and sewer considerations.

The institutional base for major improvement of shelter sector conditions has been strengthened but the institutions and the programs are very new. It seems likely that much of the Vème Plan period will be used to sort out the institutional relationships and the impact of the programs. Certain problems have already been identified:

a. the predominance of Tunis in the results to date.

b. the absence of programs directed at the non-salaried urban low-income population

c. the effect of the high cost of land on low-cost projects

d. the difficulty in attracting private sector developers to units costing 5,000 D. ($12,000) and less

e. the gap between existing and adequate waste water collection

f. the increased need for direct government intervention in projects for low and moderate income families (100 D. per month -$239- and less)

Most likely these and other problems will be the focus of the working up of the VIème Plan. This process will probably begin to get under way in 1979.

The Size of the Need

The housing sector now accounts for about 3.6% of GDP. It is the target of 14% of the Vème Plan investment. How much effort will be required to raise the standard of living to a point where all Tunisians may enjoy at least a minimum quality of shelter which is secure and healthful? A stock-user matrix has been employed to attempt to establish some form of answer to this question and the analysis may be followed in detail in sections IV and VII.

Assuming a population growth in the nation's urban areas of 3.2% annually and 1.3 in the rural areas, there will be almost 1,250,000 households in Tunisia in 1985. To provide all of these households with at least a sound, sanitary, adequately sized unit according to the area of residence would require an expenditure of $4.27 billion.

The IVème and Vème Plans combined are expected to produce 198,000 dwelling units. If this rate of expansion continues, the Vème and VIème Plans together will produce 339,000 units. Estimates made elsewhere in this report suggest that, even without undoubling households, 503,000 additional units will be needed in ten years in urban areas alone if everyone is to live in at least a "basic low-cost" dwelling. Without

a construction or upgrading program, Tunisia will also be short 543,000 adequate rural units by 1985. Building all this rural and urban housing would require 7.6% of GDP for ten years, whereas the share in recent years has been 3.6%.

TABLE B

SHARE OF GDP NEEDED FOR DWELLING STRUCTURES, 1976-85

	Percent
Tunis	2.1
Other urban communities, same	3.2
Rural areas	2.3
Total	7.6

7.6% of GDP for housing for a decade is very high but not unprecedented. What is noteworthy is that Tunis should get 28.4% of the total of 39.6% of all urban dwelling construction.

If 7.6% for dwellings is regarded as too high a proportion by economic planners, housing authorities and private builders may have to settle for some lower amount, say 5.0%. If Tunis still gets a 28.4% share, that would be 1.4% of GDP or TD. 326 million.

The Shelter Delivery System: Prospects

At present, the least expensive units being offered on the market at prices which more or less reflect the full market cost are those being built under the AID assisted "core housing" program in the coastal cities south of Sousse. These units carry prices of about TD. 2,300 ($5,500). With the government's standard 270 D per unit subsidy deducted, they are offered to the buyer at TD.2,030 ($4,850). It is expected that construction of these models in cities in the interior in the near future will be possible for TD.2,500 ($6,000). This data sets the base for analysis of programs which could serve the target population. Programs which will result in either lower cost construction or easier financial terms are being seriously considered by the GOT.

The most immediate outcome of such efforts is evident in the financial programs now offered. The least expensive means of home ownership applied institutionally is available in the rural housing program. As mentioned earlier, this program is designed to produce the largest percentage of units built during the V^{ème} Plan, 40,000 or 32% of the total. The rural

program is of special interest because, in many cases, units are being constructed just outside the city limits and, therefore, effectively represent an addition to the municipal area's housing stock. The requirements for purchase of a unit under this program include not owning a "decent" home. In this way, some families now residing in urban areas can qualify for the rural units.

What kind of loan can families with median incomes repay? The estimates of 1978 median monthly family incomes are: TD.115 for Tunis, TD.71 for Sfax, Sousse, Bizerte and Gabes, and TD.83 for all other towns. Table 30 compares different unit values for different levels of median income, as well as for those families with incomes equal to the minimum industrial wage or 150% of that wage. The calculations make clear the impact of government programs on the possibility of financing home purchase. The calculations also make clear that the core housing now being sold outside Tunis for between TD.2,000 and TD.2,500 fits the requirements of many families whose incomes fall below the median.

The limiting factors, if one assumes that the GOT policy is appropriate for the long term, are the quantity of units bein produced, the exclusion of non-salaried workers, and the high down-payments required. While it is understood that the Tunisian readily accepts great financial sacrifices in order to own a home it seems clear that an annual income of TD.670 and a large family, for example, make capital accumulation a difficult process. If the downpayment is reduced substantially, making market entry more simple, if the calculation for the percentage of income to be expended is held to 25%, a level close to the statistical findings of the recent housing expenditure surveys, and if interest rates charged are closer to actual market rates, the results suggest that TD.2,000 "core" unit now being produced (after the TD.270 subsidy) will be accessible to Tunisians close to the upper limit of the below-median-income range except in the Tunis metropolitan area. This hypothetical market analysis would suggest that if ease of entry into the housing market is to be assured and if the government is to focus more directly on the most severe problems, it will want to encourage production of a unit whose real cost stays very close to TD.2,000.

Another approach to analysis of this problem takes into account the amount of subsidy and the problem of inflation. Though 8.5% interest rates approximate prevailing market rates, they may not effectively factor in the longer repayment terms of the mortgage being discussed. Inflation is conservatively estimated at 6% per year though some analysts have suggested it may be higher. The analysis in Section VII therefore compares 10% rates with 5% rates, an approximation of the present subsidized rate. The important result of the analysis is the forecasting of the impact that various options might exert on the subsidy and the size of loan.

If the opportunity cost of capital in Tunisia is around 10% and if households are willing to pay the same rate, their housing expenditures are not holding back national development. But at this rate with a ten-year maturity, even Tunis area median income families will get only a TD.1,636 loan. With interest rates at 5 percent annually, the present value of the monthly payments is 25.6% higher. That difference is actually a subsidy. At the TD.115 income level, it would be like having a TD.1,636 loan at 10% plus a gift of TD.420.

One can eliminate this gift simply by extending the terms of repayment to 15 years. The upper limit of a loan for the dwelling unit would be TD.2,025. To be sure to reach those people well below the median level, however, housing prices should not exceed TD.1,600 (without land) in the district, TD.1,200 in other cities, and TD.800 in rural areas.

Many countries, both industrialized and developing, have recognized that mortgage financing must cope with the intractable worldwide problem of inflation. Rising price levels mean that real interest rates are less than they seem to be, possibly even negative. Rising income levels mean that households with fixed payments are devoting less to housing than they could or want to.

A variety of ways have been devised to cope with this problem. Their essence is an upward adjustment of the rate of monthly payments, either to keep step with price rises or in the form of a fixed share of income. Another way specifies the annual rise in advance.

A 6% increase in monthly payments on a 15-year mortgage at 10 percent interest will permit a borrower to afford a structure worth an additional 40 percent with no subsidy. Alternatively, a given structure can be afforded by a family with 29 percent less income. In Tunis one could finance TD.2,200 structures (land and infrastructure not included in this hypothetical price), in other cities those worth TD.1,700, and in the countryside TD.1,100 dwellings without decapitalizing the lending institution.

Analysis of the Financial Programs

To continue with the financial aspect, the government's intervention in the lending and pricing picture warrants further consideration.

The 1% interest rate subsidy and the new FOPROLOS Program, while indications of the seriousness of the GOT commitment to encouraging home ownership, are also indications that the government is having a difficult time matching housing prices to savings potential. The role of the 1% subsidy available to CNEL is difficult to understand in light of the fact that the official 5.5% rate itself reflects an important intervention by the government.

While the subsidy clearly reduces costs for the home buyer, it does not seem designed to help the CNEL build a strong independent institutional base. Currently the CNEL's cost of fund varies. In addition to its capital base it pays 4% for savings contracts and approximately 8.3% for the HG loans. The bank's major lending activities to date have earned up to 7%. It seems possible that as the amount of CNEL loans adjusts to include those clients who have completed four years savings contracts the CNEL will find itself increasingly relying on government assistance to cover operating deficits. An exacerbating factor is the presumed but probably understated 6% inflation rate.

The CNEL may continue to expect increased savings resources, (though interest on savings may need to be made more attractive.) Nevertheless, if it is to be effective in the long run, it should aim at gradually building its own capital base through profitable operations. Only in this way will the amount of financial resources available for housing truly reach proportions adequate to meet needs.

The FOPROLOS effort results from GOT concern for low-income families and its recognition of the fact that the standard savings contract would not permit prospective buyers in the lowest categories (A - 7 D/month and B - 14 or 21 D/month) to amass enough money to buy the lowest cost dwelling units being produced in the Tunis area, where most of the CNEL's original clients were located.

Perhaps of greater concern, however, is that the FOPROLOS, though a strong government effort to steer assistance to very low-income levels, was set up to serve salaried employees only. Though this group needs housing assistance, the data seem to suggest that a large percentage (perhaps as much as 50%) of the urban poor are non-salaried and, therefore, excluded from this special assistance.

The early experience of the CNEL makes clear the viability of such an institution in the present context of Tunisia's capital market development. The institution has been successful in attracting savings and dominates the shelter delivery system. It seems possible that some of the caution which has hitherto marked its policies can now be replaced with a more energetic approach to housing finance. The savings concept is firmly rooted in Tunisian cultural habits.

The CNEL experience has also suggested that since there now exists a reasonable financing mechanism, i.e. long term loans to cover a substantial percentage of the housing unit cost, many families in Tunisia will be ready to enter the market. This indicates that a self-liquidating home finance program will work and will allow the government to better direct its assistance to problems which the market finds truly difficult to resolve. The conclusion here is that the GOT effort to establish a viable housing finance institution and the related processes has begun well and has reached a point where certain aspects of the program can be spun off to operate independent of direct budget assistance as long as realistic interest rates are used.

Analysis of Dwelling Unit Construction Experience

The most inexpensive unit now being produced in any quantity by Tunisia's formal sector is a one or two-room unit with about $24m^2$ of constructed area on a lot of about $70m^2$. Once it is fully incorporated into urban area infrastructure networks, this unit costs around TD.2,300 in major urban areas outside of Tunis. Such units, whose design is examined in Section V, are used in the Rural Housing Program as well. They are then adapted for lower infrastructure standards and the price may further benefit from very low land costs in rural areas.

The one-room version is being applied in Gabes, Sfax and Tunis under the A.I.D. assisted core housing program which is managed by CNEL and implemented by the SNIT. Officials are reluctant to accept this model as appropriate for the nation's housing programs, noting that the Tunisian home buyer wants to buy something much better than the housing in which his family is currently living, and that two room makes an enormous difference. The final vote on the acceptability of the one-room concept will not be in until completion of the core program, about 18 months away.

Two facts remain clear: 1. in 1975 40% of the nation's housing stock consisted of one-room units, and 2. individuals build on extra rooms more cheaply than can the institutions. This combination of facts appears to argue for offering a low-cost, one-room unit which could then be expanded as family expenditures absorb the impact of the payments for land and the core unit.

The Ministry of Equipment (MOE) is conducting a variety of experimental building programs in an effort to assess the possibility of using other materials, or cheaper techniques in order to reduce unit construction costs. In the rural areas adjacent to Tunis, officials have noted that those land owners building one-room dwellings in a variation of the rural development program's housing program appear able to get a solid unit up for about TD.1,000.

Land and infrastructure hookups may account for as much as one third the cost of a unit. Land prices are considerably lower for properties which fall outside city limits, and these prices reflect psychological differences of importance which seem even more exaggerated when one considers that not all land within the city limits is served or can be served in the near future by public facilities.

Land appears to be that component over which the government in Tunisia has the most effective control. It also appears to be the realm where government intervention can be positive with the least negative effect on the workings of the marketplace and the least serious impact on government finances.

Reducing infrastructure costs requires greater concern for the design of facilities and the natural environment in which the projects are located. For those projects built at a distance from existing facilities networks, rights-of-way may be the only factor which should be considered.

At present, close coordination of sewer and water services is required; however, sewer service is far behind water in terms of extension and sophistication of treatment. Today's projects must, however, move from individual per unit facilities (wells, cesspools) to community facilities. In neighborhoods where lot sizes run from $75m^2$ to $400m^2$ soils would have to be exceptionally porous to permit satisfactory use of cesspools by each unit or every two units. In such a case, individual unit wells would also be unsuitable.

When collector networks are used because it is simpler to tie into older existing municipal systems, the effect on the receiving area (at the end of the line) must be considered. Most Tunisian municipalities run their sewage to streambeds which are dry much of the year. At a time when even major cities lack adequate treatment plants it seems inappropriate merely to extend collector networks and thus add to the quantity of untreated sewage being deposited in one place. Neighborhood-size septic facilities might offer a more practical solution and might allow a lower cost per housing unit.

On the assumption that very low-cost housing programs will be expanded, the GOT will have to increase the on-site supervision of projects. More active on-site supervision should result in two benefits: a better awareness of real project costs in cases where a mix of industrial construction and self-help techniques are used and better control over the quality and use of materials. It is not clear whether the transfer of administrative personnel to the field would help. The answer may lie in the training of secondary level technicians who could be brought in rapidly to assist fully-trained engineers.

Even if major housing projects do not employ concrete block construction, it appears that self-help building could benefit from block made by small producers throughout the urban areas. The small entrepreneurs working at each site do not do a bad job of forming the block, obtaining adequate degrees of consolidation even without a vibrating table. The curing process is completely neglected, however, resulting in a block which is not suitable for bearing loads. It seems possible that a technical assistance program combined with increased on-site monitoring could result in more efficient use of the available low-cost building materials and encourage the formation of local entrepreneurs and jobs.

Neighborhood Upgrading

With the increased concern for municipal planning and improvement of municipal financial conditions, the interest in neighborhood upgrading has grown. Though in the early stages of development, adoption of the process of upgrading is, effectively, recognition that immigration has outpaced the capabilities of the national and municipal governments to provide services and organize potential residential areas. Municipalities now rely on the engineering services of the local offices of the Ministry of Equipment, , which in turn rely heavily on consulting firms to design the systems to be incorporated into neighborhood upgrading plans. At present, one gets the impression that while the problems and the needs have been recognized, the solutions have not been uncovered and many plans are awaiting implementation. With regard to low income neighborhoods the localities' principal concerns are threefold:

- o collection of waste water and its treatment
- o collection of solid waste and its disposal
- o improvement of structural quality of homes.

The "gourbi" image haunts Tunisia officials and makes acceptance of the sites and services approach more difficult in urban areas. Officials distrust the urban immigrant's ability to construct an esthetically pleasing home and feel that sites and services areas will rapidly become just like the spontaneous settlements. This concern runs counter to the recognition that many spontaneous settlements must be incorporated into the city through a gradual upgrading process. It seems probable that sites and services will be accepted by municipal officials, although at present there are so many possible urban upgrading projects that they are likely to attract the most interest in the immediate future.

Rental Units

Very few rental units are being produced in Tunisia though a great deal of renting goes on. The existence of this rental activity suggests to some Tunisian officials that rental units should be incorporated into the country's urban housing policy and programs, particularly to deal with rural-urban migration.

Chapter III will describe the preponderance of renting in the slum and squatter neighborhoods of Tunis. Rental offers immigrants the flexibility they need while they get adjusted to the new community. Rental units also offer new families the possibility of acquiring slight increases in unit size as the family expands, and as incomes become more predictable. Though home ownership may be the objective of every Tunisian family, the capital investment and the commitment required may be impractical for the new urban dweller or the family recently arrived from another city.

TUNISIA

SHELTER SECTOR SURVEY

I. COUNTRY SITUATION

The combined effects of a favorable climate, an international market favorable to the prices of Tunisian commodities and an investment policy focused on the national infrastructure have launched Tunisia into the Fifth Economic and Social Development Plan period in a healthy climate of economic growth and optimism as regards the country's ability to achieve national goals.

In this context, past increases in economic activities have resulted in a growing national urban population. In turn, this increase has exerted a further pressure on the housing and land suitable for residential development. The early '70s witnessed major changes in governmental shelter programs and, as a result, the country now has an adequate institutional base to meet the challenges of the shelter sector.

A. Government Shelter Sector Institutions

Following preparation of the Fifth Plan (1977-81) established by the Commission Nationale Sectorielle de l'Habitat, de l'urbanisme et de la Construction (members are listed in appendix), the Ministère de l'Equipement (MOE) was made responsible for the implementation of the sector targets. The following organization chart (Figure 2) shows those government services and agencies most active in the design and implementation of sectorial policies and programs.

MINISTERE DU PLAN

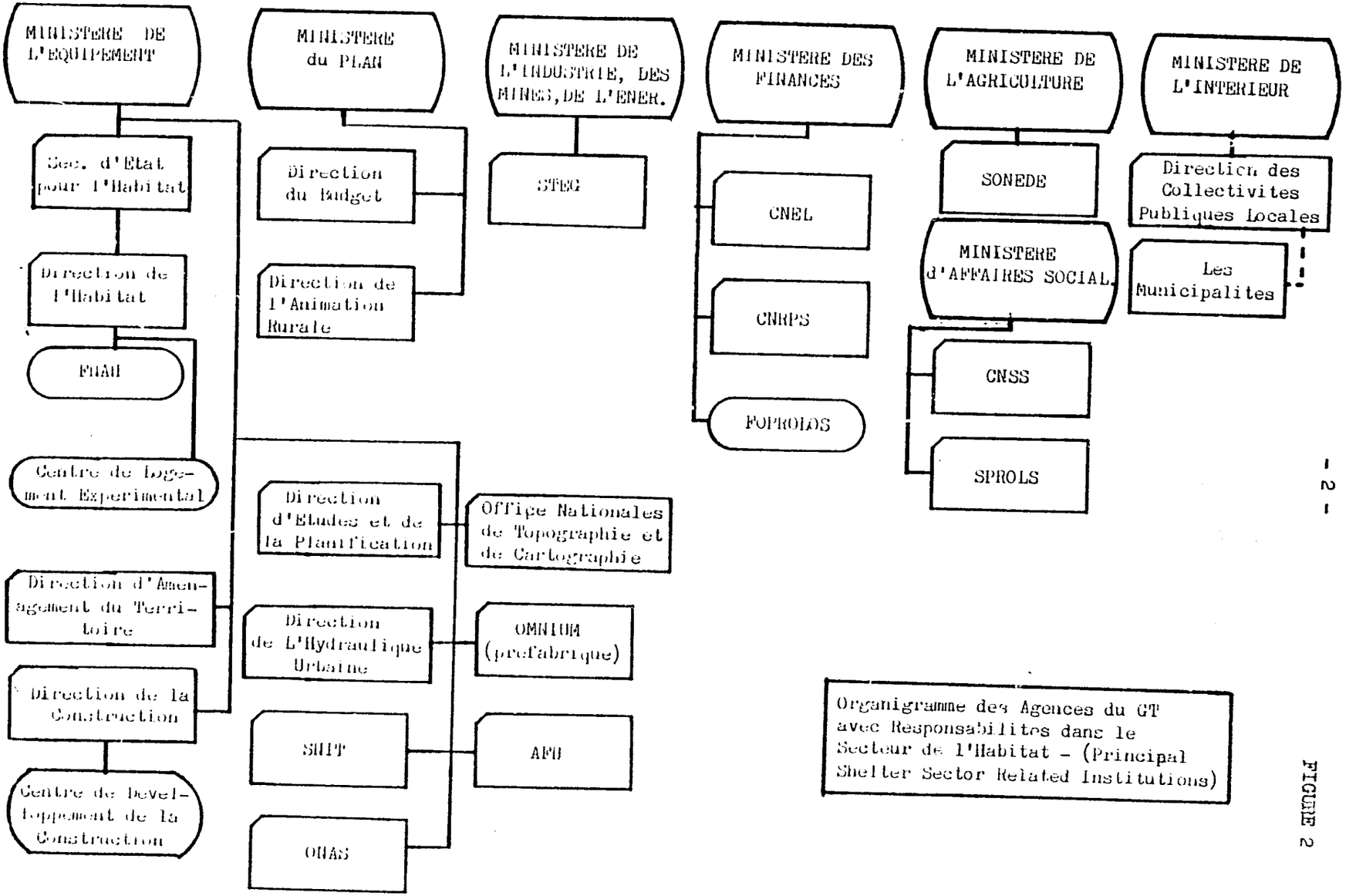
Direction de la Planification Générale is in charge of designing the National Plan for Social and Economic Development that includes the Shelter Sector.

Direction du Budget directly controls investments through the grant of loan and interest rate subsidies for Government-sponsored housing.

MINISTERE DE L'EQUIPEMENT (MOE)

Direction des Etudes et de la Planification. This Division is responsible for gathering and analyzing data required for the design of sectorial policies in those fields under the jurisdiction of the Ministère, and for translating them into sectorial objectives within the framework of the overall objectives of the Development Plan.

Direction de l'Habitat is responsible for implementing Shelter Sector policies and as such it is charged with the following:



Organigramme des Agences du GT avec Responsabilites dans le Secteur de l'Habitat - (Principal Shelter Sector Related Institutions)

FIGURE 2

- supervise the implementation of the Plan's guidelines in the field of housing.
- initiate surveys likely to promote the Shelter Sector.
- develop and control land promotion
- implement the various patterns of land development assistance approved by the Government.
- supervise the implementation of laws and regulations in the field of town planning.
- supervise the implementation of projects developed by public and private sector entities.

Direction de l'Aménagement du Territoire. This Division is in charge of the implementation of what is known in Tunisia as "Aménagement du Territoire" and of town planning activities. It is in charge of master plans for projects at the level of towns and villages, residential developments and urban programs and, more generally, it drafts all rules and regulations by these plans. It also supervises the implementation of rules and regulations.

Direction de la Construction is in charge of construction for government buildings and, in addition, through its technical center for construction development, it contributes to research and development in the field of building standards that could be of use to the Shelter Sector.

MINISTRY OF THE INTERIOR

Direction des collectivités publiques locales. This division provides technical assistance to municipal entities and through its Prêts aux Communes fund, it makes it possible for communities to increase their own capacity to implement infrastructure projects (sidewalks, street lighting, sewers, etc.).

Whereas the Ministries play an essential part in controlling the efforts of the public sector and in providing technical data required for the achievement of those objectives appearing in the Sector Plan, the implementation of building operations and delivery systems of the infrastructure required in housing is the direct responsibility of the agencies listed below.

Société Nationale de la Tunisie (SNIT). This is the corporation in charge of the so-called "social interest" housing projects scheduled by the Fifth Plan and it is the largest housing project developer in Tunisia. SNIT production figures rose from 5000 units in 1971 to 18,000 in 1977. It is anticipated, under the Plan, that the yearly production of State-aided housing units will reach 21,000 by 1980. SNIT's programs include the building of units with prices ranging from 1,300 to 3,200 D. The cheapest models are known as the "rural type" and they go for 1,300 D., while the "suburbain" types average 3,200 D. (1976 prices). Together, they amount to 48% of the total number of housing units scheduled under the Plan. SNIT operations are divided into four regions: South, Central, Tunis and North. These should be incorporated into independent agencies by 1978 and this move is designed to facilitate and speed up regional decision-making while making the SNIT more responsive to local conditions. The present Main Office will become a holding company.

Caisse Naticnale d'Epargne Logement (CNEL). This is a financial agency that initiated its operations in 1974. Not only is it supposed to finance the purchase of housing but also the expansion of existing units and programs for real estate developers. In urban areas, CNEL provides most of the clients for SNIT's projects. On December 31, 1977, the Caisse Nationale d'Epargne Logement had 41,670 savings account customers. CNEL has become the major prefinancing agency for residential construction projects, while SNIT has become the CNEL's major borrower.

Société Tunisienne de l'Electricité et du Gaz (STEG)

This utility operates under the supervision of the Ministry of Economy and the Ministry of Finance through regional offices established in each governorship (gouvernorat) or district. The Tunis area alone is supplied with gas. Electric power is oil generated.

Société Nationale de l'Exploitation et de la Distribution de l'Eau, SONEDE, operates under the sponsorship of the Ministry of Agriculture and it is responsible for water supply for the whole country. It is organized into four Regions. In each gouvernorat, regional offices include subdivisions, which in turn are further divided into village groupings. SONEDE's overall operations are managed on the basis of assumptions of requirements between 1990 and 2000, in accordance with community development plans.

Office National d'Assainissement (ONAS). This Office was created in 1975 and it is responsible for the 19 largest cities, in addition to the tourist areas. ONAS is gradually replacing municipal authorities. It manages projects and handles maintenance and current operations.

In other areas, operations remain under municipal control, however, ONAS is empowered to carry out extension projects on behalf of the Government.

Major ONAS projects cover the Greater Tunis metropolitan area and the following tourist areas: Hammamet-Nabeul, Sousse, Jerba, Zarcis and the following cities: Kélibia, Kairouan, Grand Sfax and Gabès.

Other towns not mentioned were the beneficiaries of ONAS's assistance for expansion purposes. ONAS is operating under the general supervision of the Ministry of Equipment but, being subsidized by the Government within the framework of the financial operations of the Equipment Budget, each one of its investment projects is subject to the approval of the Ministry of the Plan. ONAS just completed an in-depth survey of the national sanitary conditions and is now planning an ambitious program during the Fifth Plann this will make it possible to coordinate sewer systems and treatment operations with SONEDE programs and other urban development projects.

The above-described agencies make up the Tunisian core responsible for the solutions of the problems of housing for the urban poor. Nevertheless, other government agencies and public resources are involved in the Shelter Sector and, because of the opportunities they offer, they also deserve to be mentioned.

Agence foncière d'habitation (AFH). This agency was established in 1971, together with the Agence Foncière du Tourisme and the Agence Foncière Industrielle; its terms of reference include the provision of land to residential project developers. AFH tries to participate in the urban development process by selling land at non-speculative prices, taking into account patterns accepted by local plans. AFH policy is aiming at residential development projects where costs will be entirely paid by either promoters or purchasers; this feature explains why this agency presently operates outside the field of "social" housing projects.

Fonds National d'Amélioration de l'Habitat (FNAH). This Fund has been in operation since 1956 and it recently was reorganized so as to enable it to more efficiently participate in the maintenance or restoration of the main neighborhoods of urban centers, rather than be involved in the ostentatious expansion of prestige housing districts. FNAH grants loans with or without interest with a maximum term of five years, or guarantees loans which may also carry interest subsidies.

FNAH objectives provide for the inclusion of new sanitation facilities, and more generally for efforts designed to improve sanitation in Medinas and older sections of cities, to bring them closer to the requirements of today's market. FNAH's main resources come from a property tax.

Caisses Nationales de Retraite et de Prévoyance Sociale, et de Sécurité Sociale (CNRPS and CNSS). These agencies are endowed with tremendous financial capabilities and they participate in the Shelter Sector on an occasional basis. Fifth Plan objectives provide for a more direct impact from these funds even though they are directed primarily at salaried groups and do not cover small businessmen or contractors, workers and day laborers who make up the lowest layer of the economic population.

B. Climatic and Geographic Conditions 1/

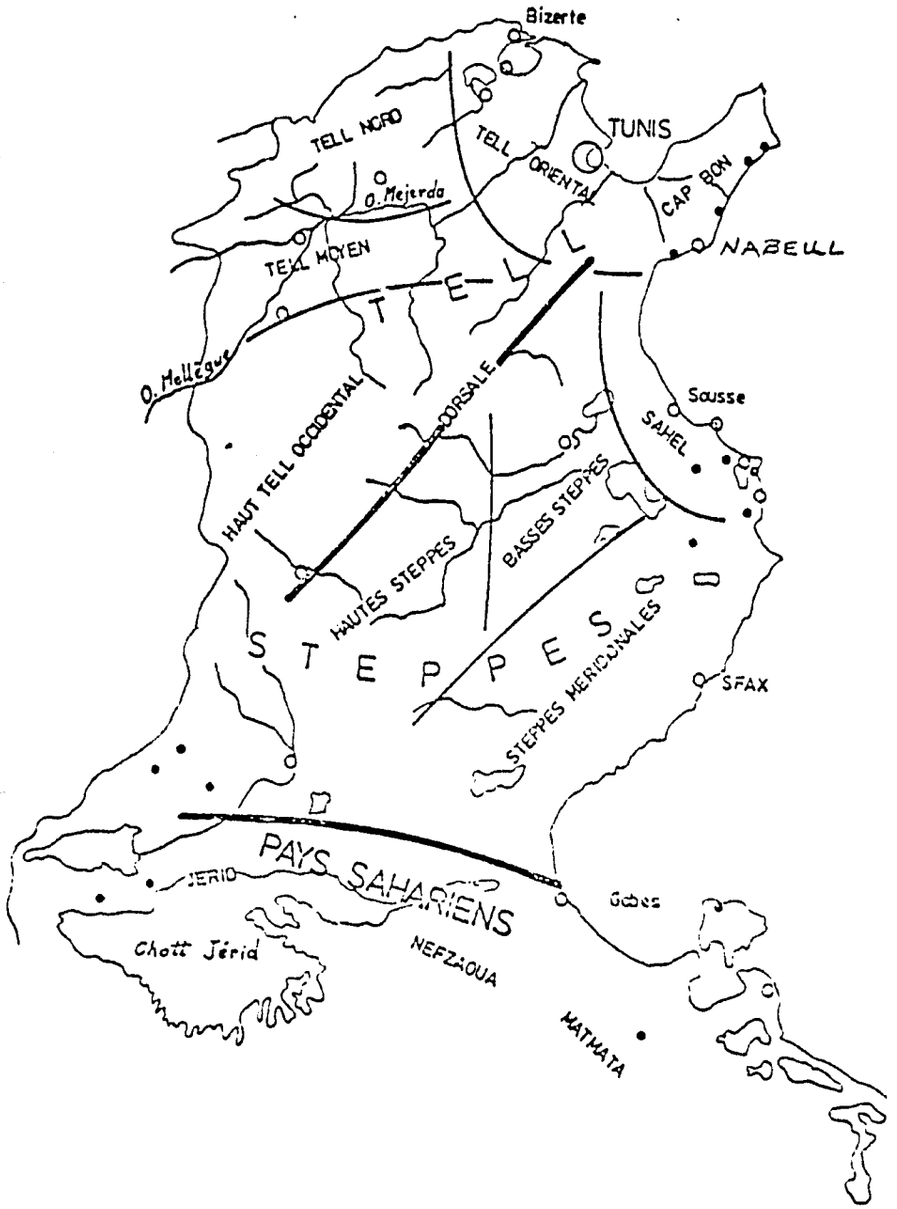
From North to South, for some 600 km., the Tunisian countryside is very varied. Average temperatures range between 15 and 21°C and rainfall between 100 and 200 mm per year.

Altitude rises from 0 m. to about 1550 m. The country is drained by a major river flowing through a large valley (the Medjerda) and relief is provided by a range of relatively high mountains (La Dorsale).

As can be seen, the country's landscape is varied and in no way monotonous; accordingly, housing projects should be designed to take physical features into account, as assumptions developed for a given area are not necessarily usable in another.

1/ SOURCE: General Sanitation Study in Tunisia (Etude générale de la salubrité en Tunisie, Vol.I: Technical Studies. Dutch Engineering Consultants for the Office National d'Assainissement. Tunis, March 1978, pages 2-16 (excerpts).

FIG. 3.



DECOUPAGE PHYSIQUE

LIMITE DES GRANDES REGIONS

LIMITE DES REGIONS

1. Physical Environment

Basic geographic zones of Tunisia are shown in Fig.3. There are three major natural regions:

The Tell Region. This is a mountainous area located North of La Dorsale (a mountain range running from Zaghouan to Tebessa). This part of Tunisia is drained by major perennial rivers, including the largest one, the Medjerdah Wadi and its tributary, the Mellegue Wadi. The Northern area has abundant precipitation.

The Steppes Region. Running roughly from La Dorsale to a line roughly linking Gabès and Gafsa, this area is made up mostly of grasslands and alfalfa fields. There, the annual rainfall is under 300 mm. Outside a number of irrigated areas, farming is not very developed. On the other hand, cattle raising is a major source of income, together with olive groves, particularly along the coast.

The Sahara Region. Beginning slightly North of the Chott El Jerid or Salt Lake, this is the southernmost region of Tunisia. As one moves southward, the landscape becomes increasingly desert-like. A large number of oases can be found around the Grand Chott.

2. Climate

Tunisia's climate features a rainy season from October to May and a dry season, from June to September. There are large variations from one region to the next as regards precipitation (the equivalent of 1200 mm/year), their distance from the sea, their exposure to winds, prevailing rainfall in the area (from the Northwest) and their own specific terrain. Moving southward, one witnesses an increase in average temperatures, evaporation and sunshine.

Winds. Tunisia is located between the Mediterranean and the Sahara where temperatures experience great variations during a season and even in the course of one single day; on the other hand, sharp barometric variations result in relatively strong winds during a major part of the year.

In the fall and winter, prevailing winds (for almost all the country) blow from the Northwest. On the other hand, Spring and Summer bring the coast (from Tunis to the Libyan border) under the influence of an Eastern wind; this wind is strongest at the southern tip of the area (Gabès).

Rainfall. In Tunisia, annual precipitation levels vary widely from one area to the next and they range from more than 1200 mm (recorded in Ain Draham) to less than 100 mm in the southern desert triangle. Furthermore, variation between one year and the next may amount to 50% and up to 100% (see Fig.4).

Temperature. Mean temperatures for the various Tunisian regions are specified in Figures 5 and 6.

C. Settlement Patterns

Today's settlement patterns in Tunisia feature a heavy concentration of large urban clusters along the coast. The Tunisian economy's most significant industries are to be found in the cities, as is the case in Tunis, Bizerte, Sfax, Gabès and Sousse. To a large extent, inland areas derive their income primarily from farming. With the exception of a few large industrial operations such as the Kasserine paper mill, the Thala cement plant and the Gafsa mines, the majority of the population is dependent on agricultural activities. It is precisely this region that supplied migratory flows to the cities which, in a matter of a few years, aggravated the population concentration problems on the coast and exacerbated further the economic imbalance between the various regions of Tunisia.

For this reason, the Tunisian Government (GOT) has iniated a policy of industrial decentralization designed to achieve a more balanced regional development.

Table 1 gives a priority listing of the 20 major population centers (as determined by the 1975 Census), followed by a 1986 population projection developed by the National Statistics Institute. In addition to city population figures, statistics are supplied for gouvernorats, and percentages of gouvernorat population classified as urban are reported. Figure 7 gives the location and relative size of the principal communities.

Fig. 4

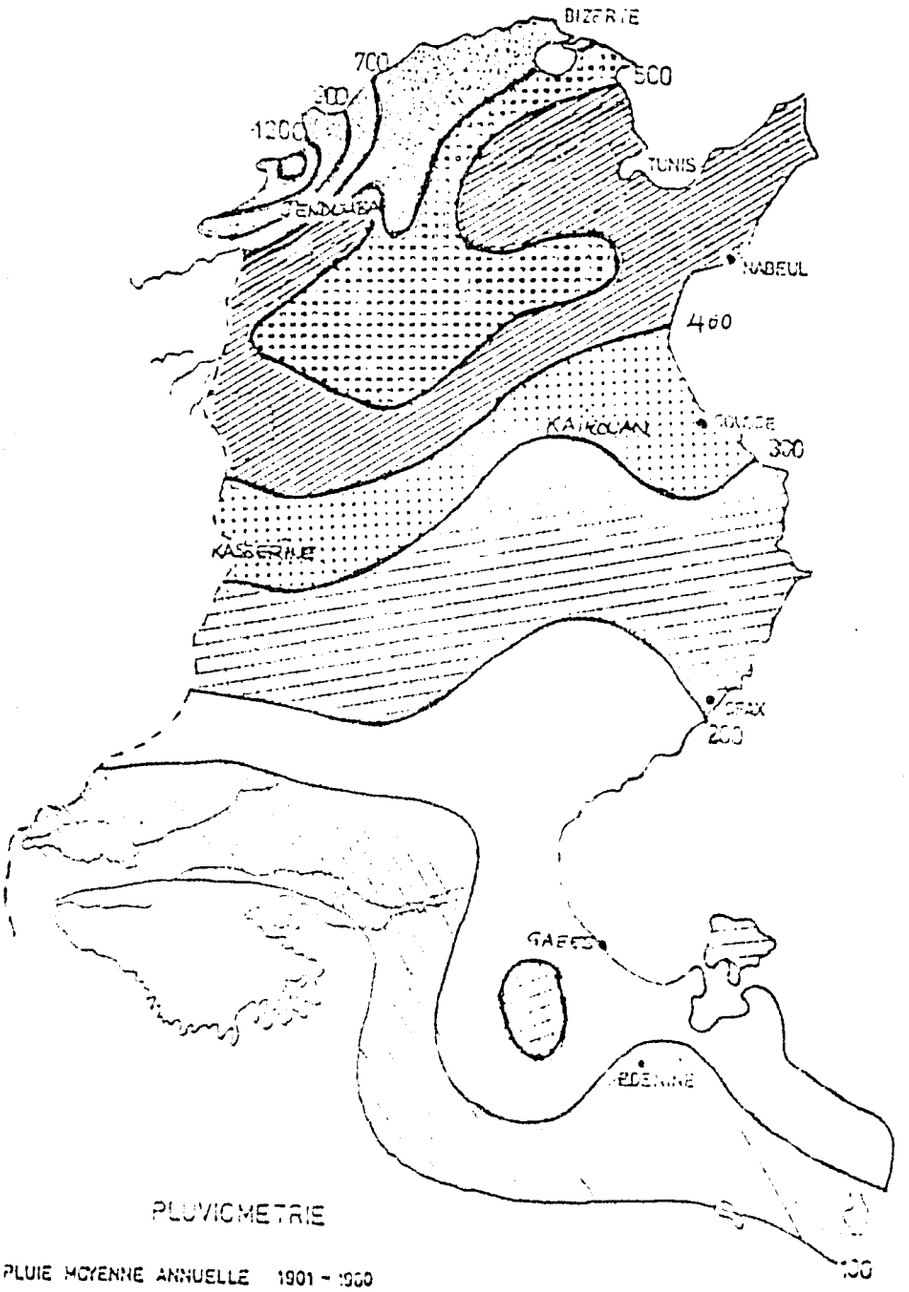

BIZERTE
700
500
1200
TUNIS
NABEUL
400
KAIROUAN
300
KASSERINE
SFAX
200
GABES
100
PLUVIOMETRIE
PLUIE MOYENNE ANNUELLE 1901 - 1950

FIG. 5

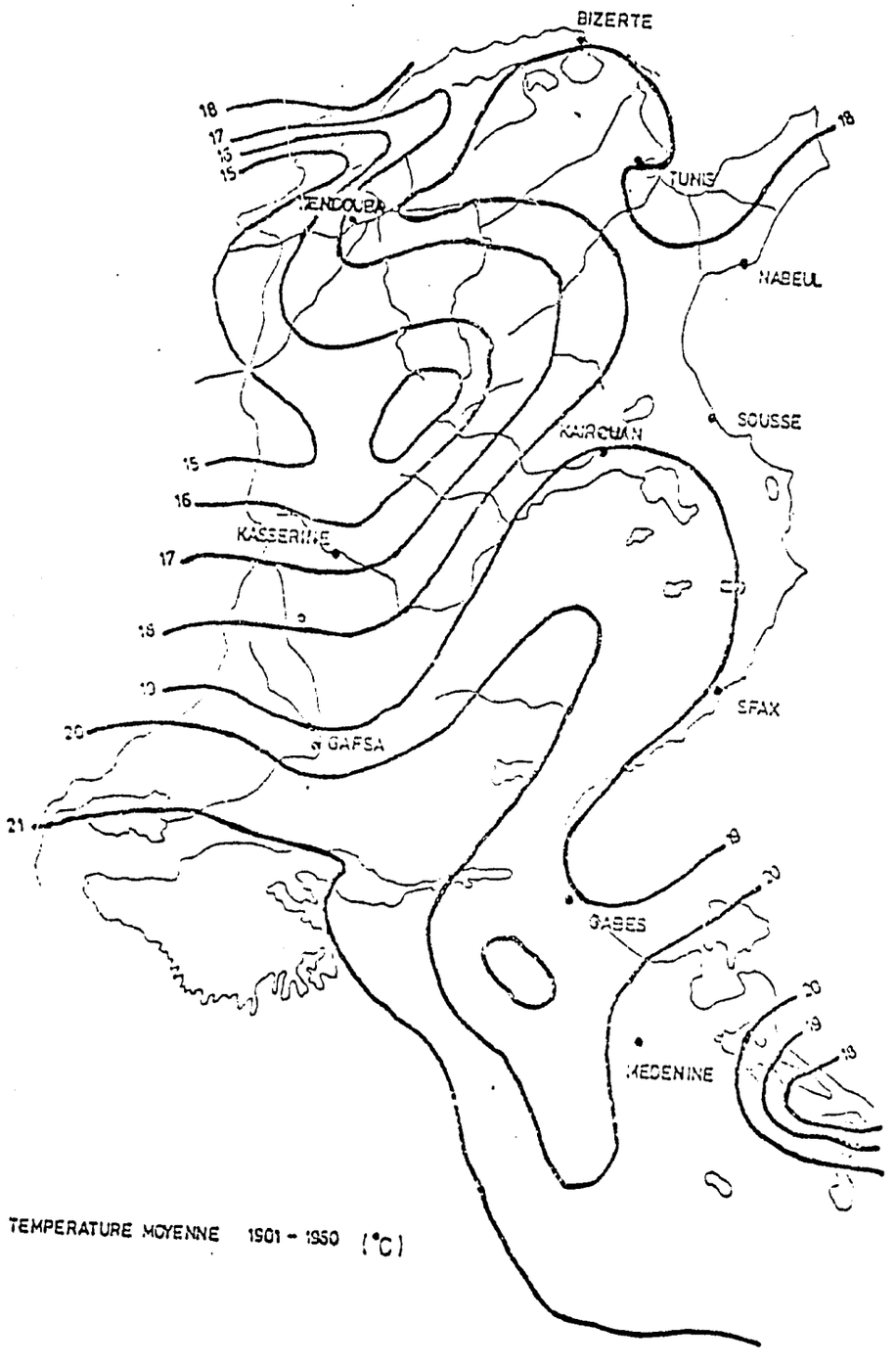
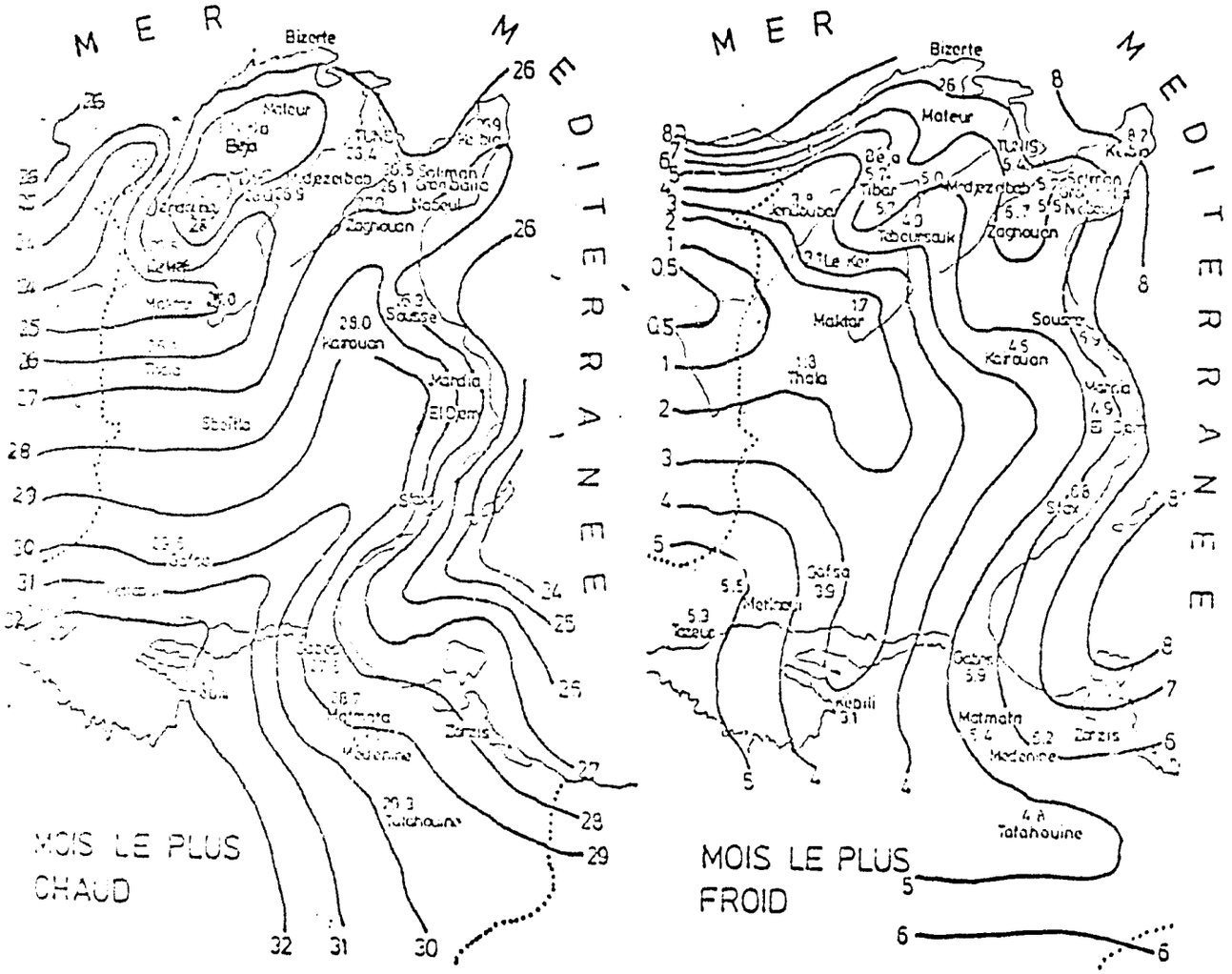

BIZERTE
TUNIS
NABEUL
SOUSSE
KAIROUAN
KASSERINE
SFAX
GAFSA
GABES
MEDENINE
TEMPERATURE MOYENNE 1901 - 1950 (°C)

FIG. 6



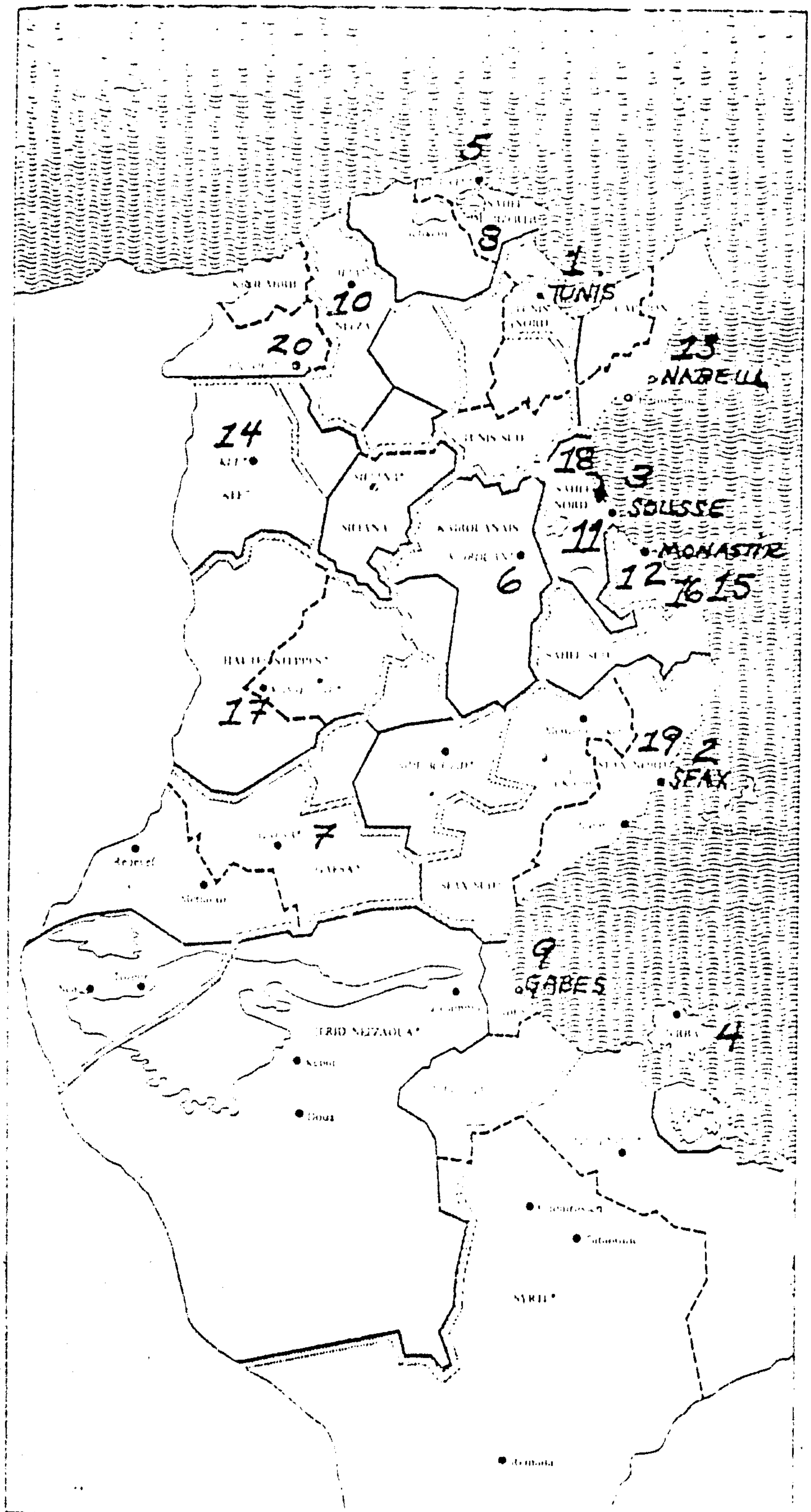
TEMPERATURE MOYENNE 1901 - 1960 (°C)

TABLE 1

A SUMMARY OF POPULATION INFORMATION
FOR THE GOUVERNORATS
AND THE
20 LARGEST CITIES

Gouvernorat	Population 1975	Percentage Urban 1960	Percentage Urban 1975
District of Tunis	925,000	92	94
Sfax	474,879	58	56
Sousse	254,601	67	71
Mednine	292,970	14	23
Bizerte	343,708	47	53
Kairouan	338,477	21	22
Gafsa	237,844	53	57
Bizerte	See above		
Gabes	255,717	35	37
Beja	238,770	23	28
Sousse	See above		
Monastir	223,150	72	77
Nabeul	368,114	45	48
Le Kef	233,515	21	23
Mahdia	218,217	26	35
Monastir	See above		
Kasserine	238,499	16	21
Sousse	See above		
Sfax	See above		
Jendouba	288,989	12	15

City	Population 1975	Projected Population 1986
1. Tunis	925,000	1,310,000
2. Sfax	174,900 (The metropolitan area had a population of 257,000 in 1975.)	247,300
3. Sousse	80,500	115,200
4. Jerba	74,600	105,500
5. Bizerte	68,300	96,600
6. Kairouan	56,400	79,700
7. Gafsa	45,300	65,600
8. Menzel Bourguiba	43,900	63,600
9. Gabes	43,100	62,400
10. Beja	41,000	59,400
11. M'Saken	33,200	49,000
12. Monastir	33,100	38,900
13. Nabeul	32,300	47,700
14. Le Kef	30,700	45,300
15. Mahdia	27,200	40,100
16. Mornine	26,000	38,500
17. Kasserine	25,100	37,000
18. Kalaa Kebira	23,200	34,300
19. Sakiet Ezzit	22,300	32,900
20. Jendouba	20,900	30,800



POSITION AND SIZE RANK OF CITIES

Limites des sous-regions

Limites des regions

Siege de gouvernorat

* Noms des regions

** Noms des gouvernorats

FIG. 7

HIERARCHIE DES VILLES LES PLUS IMPORTANTES

II. ECONOMIC OVERVIEW

A. Economic performance: The 1974-76 Output

Beginning in 1973, most national economies with no significant amounts of oil experienced a number of problems. In Tunisia, oil production accounts for only 3 percent of the national product; the economy nevertheless performed well during the 1973-1976 period. Total output rose more than 6% annually in real terms (1973-1976) and 9% in real terms (1971-1977). By 1976, national income per capita level was 19.7% above that of 1973. Thus, it reached 163 D ($393.00) in 1973 and 197 D ($475.00) in 1976, in terms of 1972 purchasing power. For the same period, GDP per capita was $512.

This growth is attributable to a climate favorable to agricultural production and a policy based on industrial output. National expenditures were increased by 38% and the national product (GDP at market prices) rose only by 31% and as a result the resource deficit rose from 3.6% to 9.4% of the gross domestic product (See Table 2). To meet all sector requirements, it was necessary to import this surplus of non-factor goods and services in relation to exported volumes. In 1972 prices, the amount involved came to 134 million D.

Farming dropped in 1976 to 17.9% of the GDP, as compared with 18.8% of GDP in 1973. The manufacturing share recorded an 11.3% growth; this is a relatively common ratio among countries with a comparable income per capita. The part covered by the government or public consumption was 14.4%. The share of construction (including housing) amounted to 8.1% in terms of added value and the gross value of housing construction, computed on the basis of an enumeration, was recorded at 3.8%, and this is a low ratio by comparison with other countries. On the other hand, the total investment share (fixed capital) was very high and amounted to 24.8%, a figure suggesting an efficient and productive use of the inflow of resources from abroad (See Table 3). Even though private consumption rose by 25% between 1973 and 1976, this increase was only two-thirds as high as the corresponding 38% growth in spending.

As a share of domestic expenditure, private consumption featured a decrease as it dropped from 67.7% to 61.2%.

B. Recent Output Trends

As expected, preliminary 1977 estimates recorded a clear slowdown in economic growth, with an increase of only 4.1 percent (See Table 3).

The non-agricultural, non-food-processing sector rose only by 7.9%, roughly the level experienced in the past few years. Let us also mention a slowdown in tourism (dropping 7%) and mining industries (phosphates, for all practical purposes), with a 7.9% decrease. By contrast, textile exports rose at the rate of 12,1%; but this figure may be reduced by half as early as mid-1978, in view of the new set of restrictions imposed by the European Economic Market. Investment levels remained at about 25% (and according to one's interpretation, this figure could reach up to 30%) of

TABLE 2

GROSS DOMESTIC PRODUCT: CONSUMPTION, INVESTMENT AND FOREIGN TRADE

	Millions of Constant Dinars of 1972	1973	1974	1975	1976	1977[1]	1978[2]
1.	Gross domestic product (market prices)	1082.4	1181.4	1301.7	1419.4	1478.0	1626.0
2.	Gross domestic expend.	1121.1	1276.6	1400.5	1553.4	1641.7	1796.5
	Consumption						
	Private	758.6	848.0	865.9	950.4	1007.7	1088.0
	Public	161.9	176.2	194.5	224.0	252.0	277.5
	Gross Fixed Capital Formation	209.5	234.8	300.0	352.0	382.0	417.0
	Inventory changes	-8.9	17.6	36.8	27.0	--	14.0
3.	Resource gap (2 minus 1)	38.7	95.2	95.5	134.0	163.7	170.5
	(as share of GDP)	(3.6%)	(8.1%)	(7.3%)	(9.4%)	(11.1%)	(10.5%)
	Exports, goods and non-factor services (NFS)	245.2	269.8	275.5	302.4	317.0	343.9
	Imports, goods, and NFS	283.9	365.0	371.0	436.4	480.7	514.4

SOURCE: Ministry of Planning, Budget Economique 1978 (Tunis, Nov. 1977).

1/ Estimate as of November 1977

2/ Official Forecast

1972 Dinar = US$0.4772.

TABLE 3

GROSS DOMESTIC PRODUCT: VALUE ADDED BY MAJOR SECTORS IN CONSTANT 1972 PRICES
(Millions of Dinars)

	1975	1976	1977[1]	1978[2]
Agriculture	227.7	245.0	221.0	251.0
Fishing	8.4	8.8	9.6	10.6
Mining	12.1	11.4	10.5	11.3
Petroleum	50.8	39.7	45.0	50.3
Electricity and Water	19.9	22.2	23.2	25.8
Manufacturing (Food Processing)	116.6 (41.7)	139.0 (48.7)	148.8 (42.4)	167.7 (47.6)
Construction	85.5	99.9	111.0	119.0
Government Wages and Salaries	155.7	161.0	183.5	203.0
Other Services (Rent)	468.4 (63.2)	504.4 (65.0)	513.4 (67.7)	556.3 (69.5)
GROSS DOMESTIC PRODUCT AT FACTOR PRICES	1145.1	1231.4	1266.0	1395.0

SOURCE: Ministry of Planning, Budget Economique 1978 (Tunis, Nov. 1977).

1/ Estimate

2/ Official Forecast

3/ Dinar = US$0.4772

the gross national product (see Table 4), but government or public consumption rose by 12.5% to 15.3% of national expenditure. As a result, the resource gap itself widened to 10% of national spending for a total of 163.7 million 1972 dinars. Imports required were much higher than exports; the latter amounted to 19.3% as against 29.2% of national expenditures for imports.

To the extent that agriculture was expected to recover in 1978, official forecasts assumed that output would be 10% above the 1977 figure. No significant change is expected in other growth rates and ratios. It is estimated, as a consequence, that the resource gap or trade deficit will stand at 10.5% of the gross domestic product.

C. Inflation

Knowledge of the true rate of inflation is important for the purpose of setting interest rates and designing a successful investment policy. Interest rates lower than the going inflation rate are negative rates for all practical purposes and as such they may be an unintended and unfair subsidy to loan recipients or holders. A list of basic commodities - bread, flour and edible oils - is directly priced by the government authorities. Thus, in 1977, in spite of poor harvests, controlled food prices were allowed to rise by only 3.9%. But outside of the food sector, prices for clothing, shelter, health and transportation rose by 13.0%. This inflation rate is probably the result of an increase in the cost of imports and an expanding money supply due to government deficits. On May 1st, 1978, non-farm wages were allowed to rise by 11%, roughly 4.05 D. per month, assuming a 44-hour work week.

D. Employment

Unemployment is one of the major problems confronting Tunisia today, so it has been granted top priority in the Fifth Development Plan for 1977-81. In 1976, it was estimated as 12.8% of the labor force (that is, inclusive of workers 18 to 59 years of age; the underemployed, defined as those who worked less than 4 days the week before the 1975 census, accounted for about 1/6th (or 14%). Unemployment was aggravated by a number of factors: a steady population increase (about 2.3% annually), a changing age structure with more people of working age, the entry of females into the labor force and tighter control of Europe-bound migrations. Meanwhile, rural-urban migrations were accelerating. These population patterns may be explained by the fact that the average productivity of the farm population is only one-third that of non-farm workers.

During the Fourth Plan (1972-76), the employment target of 119,000 new jobs was exceeded by 45,000 jobs. Nevertheless, it turned out that the requirement was for 210,000 jobs, so that the actual deficit rose by 46,000. For 1977-81, the number of additional jobs required was officially forecast as 279,000, but only 233,000 new job opportunities were expected in non-farm employment. Data available suggest an improved labor absorption rate of 86.5% of new workers, as compared with the 75% performance level of the Fourth Plan.

TABLE 4

COMPOSITION OF INVESTMENT
(PER CENT)

	1975	1976	1977[1]	1978[2]
Agriculture and Fishing	11.7	10.4	10.4	10.4
Industries	43.4	42.6	42.9	46.1
/Manufacturing/	/18.1/	/16.6/	/20.5/	/21.6/
(Building Materials)	(5.7)	(5.7)	(10.0)	(8.3)
Services	44.9	47.0	46.7	43.5
/Housing/	/15.5/	/15.2/	/14.5/	/13.6/
GDCF (Gross Domestic Capital Formation)	100	100	100	100
GDCF/GDP	23.0	24.8	25.8	25.6
Housing/GDP	3.6	3.8	3.7	3.5

SOURCE: Ministry of Planning, Budget Economique 1978 (Tunis, Nov., 1977).

1/ Estimate

2/ Official forecast

E. Balance of Payments

As shown in Table 2, from 1973 until 1977 the Gross Domestic Product rose at an annual compound rate of 8.1%, while expenditures were growing at an annual 10.0%. Bearing in mind that Tunisia had been consistently accumulating foreign exchange from 1968 through 1974, this weakening is an unfortunate trend.

This reversal is attributable to a number of causes. Not only was there stagnation in the value of imports, but even the terms of trade turned against Tunisia. The one major exception was petroleum which, after its price increase, now accounts for about 32% of merchandise exports. By contrast, both phosphate rock and superphosphate exports experienced a decline in price and volume and now account for only 18% of all exports. Olive oil exports suffered not just from a drop in world prices but also from 1975 European Common Market measures aimed at protecting Italian producers. Later, these measures were partly offset by granting Italy fishing rights in Tunisian waters. Textile exports were hurt by another Common Market protective measure imposing ceilings on Third-World exports to Europe. The tourist trade achieved record receipts in 1972 and 1975 but other years were only moderately successful, as hotel occupancy rates were about 40%. Lastly, reduced emigration of Tunisian workers led to a lower growth rate (about 6%) for remittances from abroad.

To the extent that investment continued to grow an annual 16.2% between 1973 and 1977, the steady need for equipment and materials caused an increase in imports and resulted in an import gap, as described above. With an approximate 34% share, capital goods were a major import category, barely exceeded by materials and semi-finished goods that took a 35% share in 1977. As private consumption rose at a compound 7.4 rate during 1973-77, that is, more slowly than the 8.1% of the gross domestic product, the growing trade deficit was not attributable to consumption.

Over 30% of the trade deficit was financed by foreign capital inflows, including grants, and the balance was covered by calling in net foreign reserves. From 1973 through 1977, these reserves dropped from a level of 23.5% to 12.5% of the yearly volume of imports of goods and services, as shown in Table 5.

Meanwhile, medium and long-term capital, private as well as public, was flowing in at an accelerating rate: an additional 8.3% each year between 1973 and 1975 and 6.3% during 1975-77. The 1977 rate of inflow reach 13.0% of the Gross Domestic Product. However, in the '60s Tunisian capital inflows had reached higher levels around 14.3%, a ratio that was exceed only by Lebanon, Puerto Rico and countries at war like Viet Nam.

Altogether, the external debit had risen to 783 million D. by 1977 and came to 36.8% of GDP. Servicing the debt with amortization and interest cost 78 million D. or 12.5% of export earnings. This ratio had been 10.4% in 1975 and was expected to rise to 14.3% in 1978. When workers' remittances are added to export earnings for goods and services, the 1977 debt service ratio is only about 11.5%. A World Bank survey recently classified Tunisia as an

TABLE 5

BALANCE OF PAYMENTS OF TUNISIA, 1975-1978

(millions of dinars)

	1975	1976	1977	1978[1]
Exports	545.6	551.1	622.1	680.0
Merchandise exports, f.o.b.	345.6	338.3	390.1	435.0
Nonfactor services	200.0	212.8	232.0	245.0
Imports	-629.7	-715.2	-834.2	-910.0
Merchandise imports, f.o.b.	-521.8	-598.3	-691.2	-755.0
Nonfactor services	-107.9	-116.9	-143.0	-155.0
Balance on goods and Nonfactor services	- 89.1	-164.1	-212.1	-230.0
Net Transfers	- 1.9	- 24.1	- 41.0	- 47.0
Balance on Current Account	- 90.0	-188.2	-253.1	-277.0
Balance on Capital Account	80.4	171.7	224.0	277.0
Grants	20.2	19.8	20.5	16.0
Direct Private Investment (net)	19.3	29.1	37.0	37.0
Government Loans	59.2	75.7	97.8	134.0
Private Loans	14.2	78.1	122.2	140.0
Debt Servicing	-38.0	-43.0	-46.0	-50.0
Omissions + Valuations Adjustments	5.5	12.0	- 7.5	-
Change in Net Official Foreign Reserv.	- 9.6	-16.5	-29.1	-
Net Foreign Exchange Reserves (FER)	147.8	131.3	104.2	104.2
Ratio: N/F/E/R/ to imports, Percent	23.5	18.4	12.5	11.5
External Debt	498.2	609.0	783.0	1005.0
Ratio: Ext. Debt to GDP, percent	28.6	31.9	36.8	40.0
Debt Service	56.5	64.6	78.0	96.0
Ratio: Debt Serv. to Exports, percent	10.4	11.7	12.5	14.1

SOURCE: Republique Tunisienne, Budget Economique 1978, Tableau IV-1, IV-2, updated for 1977.

[1]Official forecast

"intermediate middle-income country" together with Brazil, Chile, Colombia, Guatemala, Korea, Malaysis, Mexico, Peru, Syria, Turkey and Zambia. The average debt service ratio for these countries during 1974-76 was 19.3%, much higher than that of Tunisia. On the other hand, their current account deficit in relation to the GDP was much lower and amounted only to 5.4%. 1/

Taking into account international trade patterns and the government's investment program during the Fifth Plan, Tunisia will have to resort increasingly to international financial markets for its required capital inflow. By these standards, the terms of the Housing Guaranty Loan granted by US AID will appear relatively favorable. An International Monetary Fund study estimates that the Tunisian debt service ratio will not go beyond 20% by 1981.

F. The Government Sector

Between 1974 and 1977 government spending rose at an annual 21.8% while government income was increasing by only 14.7% (see Table 6). As a result, the deficit reached a 53.2% compound rate, rising from 54 million D. in 1974 to 195 million D. in 1977, that is, from 16.7% of government receipts to 39.7%. About half of the deficit was financed by foreign borrowing, the balance being supplied through an increase of the money supply which, together with the poor 1977 harvest, was a force behind the accelerating inflation.

TABLE 6

GOVERNMENT FINANCE
(millions of dinars)

	1974	1975	1976	1977[1]	1978[2]
Current Revenues	311.8	361.7	344.6	471.5	541.2
Telephone and Postal Surplus	13.6	14.2	16.4	20.0	25.0
Government Income, Sum	325.4	375.9	411.0	491.5	566.2
Current Expenditure	215.1	269.2	289.7	361.5	421.2
Subsidies	58.7	71.4	98.4	131.1	155.6
Capital Spending	74.8	90.7	116.2	153.9	164.4
Debt Service	31.0	34.6	34.4	40.0	48.0
Total Spending, Sum	379.6	465.9	538.7	686.5	789.2
Overall Deficit	54.2	90.0	127.7	195.0	223.0
Financing					
Domestic	28.0	24.8	48.2	86.0	92.0
Foreign	32.0	38.0	36.9	109.0	131.0
	- 5.8	-27.2	-42.6	0	0

SOURCE: Budget Economique, 1978 (Tunis, November 1977), Table V-1.

[1]Estimate

[2]Projection

III. POPULATION CHARACTERISTICS

A. National Characteristics

The latest Tunisian census was made in 1975 and counted 5.6 million inhabitants, 47% of whom resided within urban areas. Between the census years 1966 and 1975, population growth was of the order of 1.1 million for an annual average growth rate of 2.3%. This figure would have been higher if emigration had not reduced the impact of a natural growth rate of 2.7% per year.

Tunisian demographic structure suggests a very young population with an almost equal distribution of males and females. The median age is 18.3 years, and life expenctancy is estimated at an average 57 years for men and 58 years for women.

The percentage of the working age population (between 15 and 64 years of age) increased from 50% in 1966 to 53% in 1975. The annual average increase of this population is around 112.000, distributed almost equally between the two sexes.

In addition, specific demographic analysis of the Tunisian population reflects two migratory patterns: emigration and intense migration of the rural population toward urban centers and particularly Tunis. The emigration of the labor to Europe and Arab countries is attributable to an imbalance between labor supply and demand. This is a relatively recent phenomenon and the number of emigrants is estimated at a quarter of a million. Gaps between standards of living in urban and rural populations also contributed to strengthening internal migratory movements.

Rural migrant flows continued to add to the size of the most underprivileged urban population: more than half of those with incomes below poverty level (estimated at 10 D per person per month) are urban area residents .

B. The Urban Population

The growth of urban centers, the expansion of municipal boundaries and internal migrations combined to produce a comparatively high degree of urbanization. This type of urbanization features uneven space distribution and occupancy. Close to two thirds of the urban population (some 2.650.000 people) reside in the "Gouvernorats" of Tunis, Sousse, Sfax and Bizerte. The population of the District of Tunis, which numbered 925,000 in 1975, now accounts for 17.3% of the national population and 38% of the communal or urban population. Still in 1975, the District of Tunis experienced an annual growth rate as high as 3.2% - including emigration - exceeding the national growth rate of 2.3%. Emigration, plus the slowing down of migration to Tunis attributable to good harvests, can explain a relative drop in the capital's growth rate. No current analysis of these two patterns is currently available. However, it seems that emigrants are beginning to return home from abroad as the demand for foreign labor becomes less substantial in European markets. It also seems probable that migrations to the capital will resume a

faster pace, should bad crop years return. Half of the migratory flows originate in centers with less than 20.000 population, with no means to stem the Tunis-bound flows of immigrants.

C. Demographic and Socio-Cultural Structures in Target Population

USAID shelter programs are aiming at the needs of the lowest socio-economic population layers. More specifically, target groups may be defined as covering the most underprivileged 50% of the population, on the basis of income distribution per household, as recorded in the urban centers where they live.

In the Tunis District, there is a close relationship between the various housing types, income levels and socio-economic characteristics, as shown in Table 7. The areas of spontaneous settlement (Zones d'Habitation Spontanée in French, hereafter referred to as ZHS) and the historic center (the Medina and its two suburbs) contain the majority of the city's urban poor. These areas are operating as the main staging areas for the in-migration. They include 45% of the Tunis population, in an area covering only one fifth of the inhabitable area of the District.

Medina and ZHS population patterns reflect a greater number of males than the average for the whole District. This is not surprising in view of the fact that a high proportion of migrants moved there without their family. Similarly, it is not surprising to find that this population is very young: 54% of all ZHS inhabitants are under 20 and the average number of dependent children is about 3.4.

ZHS household sizes are largely a function of the number of dependent children because their structure is characterized by conjugal families (85%), and living conditions in such districts are not conducive to more complex households. Here the average household size is 5.5, the same as for the District. Whereas households are not different from District averages, their distribution is different when taking into account the number of households per housing unit - and such households are often related by blood - 1.4 as against 1.2 in the District. In Melassine, this figure reaches 1.9 households per housing unit.

Medina households are both more complex and older. The number of dependent children is lower than average and 25% of the households include families with older members and other dependents, and extended families. Housold developments also occur on the basis of occupational activities, as in the case of craftsmen and traders who practice their trades together. This kind of occupancy is matched by a very high density per housing unit, with an average 1.3 household/unit and the average household size is 5.3 persons.

TABLE 7

SOCIO-ECONOMIC CHARACTERISTICS OF THE HOUSING SYSTEMS

	High Status	Medium Status	Resettlement	Slums	Urban Center	Historic Center	Rural Housing	Ensemble District
Region of Origin	Sahel	Sahel	Tell	Tell	Sahel	Tell	Sahel Harbor	South Tell
Size of Household	Low 5.03	High 5.8	Very High 6.5	Medium 5.5	Low 4.4	Medium 5.4	High 6.0	5.5
Ratio of Employed Persons/Household	Low 1.4	High 1.6	High 1.6	Low 1.4	Medium 1.5	Low 1.4	Very High 2.0	1.5
Socio-Professional Categories	High-Level Officials + Professionals	Mid-Level Officials	Service Personnel + Workers	Workers + Day Laborers	Mid- + High-Level Officials	Workers, Day Laborers + Service Personnel	Day Laborers	Service Personnel and Workers
Branch of Activities	Admin. + Services	Admin. + Indus.	Transp. + Admin.	BTP + Services	Admin. + Serv.	Services + Admin.	Agric.	Admin. + Services
Type of Housing	Villa	Villa	Villa	Cement Shacks	Apart.	Medina-Type House	Cement Shacks	Villa
Status of Occupation	Owners	Owners	Owners Hire-purchase syst.	Owners + Tenants	Tenants	Tenants	Owners	Owners + Tenants
Size of Housing	Large	Medium	Small	Small	Small	Small + Medium	Small	Small
Average Income** Median Income	330 D 265 D	110 D 89 D	80 D 72 D	56 D 49.6 D	130 D 111 D	70 D 61 D	63 D 43 D	94 D 73 D
Median Income Per Person Per Month	53 D	16 D	12 D	9 D	25 D	12 D	8 D	14 D
Median Rate of Expenditure on Housing	8%	13.7%	18%	14.6%	13.3%	17.6%	12.6%	14.8%

*Only the predominant characteristics are considered in this table

**Income per household and per month

SOURCE: Population, Housing, Income, and System. On Housing in the District of Tunis. Study by Sondage about 1746 households.

Various surveys confirm that more than half of the residents of the ZHS and about one third of those in the Medina originated in Northwestern gouvernorats (Beja,Jendouba and Kef). In the District, most married couples are endogamous, with partners from the same gouvernorat.

This would indicate that the men initially arrived alone, leaving their families behind, or that those who are single later marry someone from their village of origin. While ZHS populations are heterogeneous to some extent, particularly when compared with those living in similar zones in Beja and Kef, there is a tendency to regroup according to gouvernorats of origin. In such cases, extended families (several generations) are living in separate households within the same house, or close to one another, and they usually accommodate newly arrived family members and friends. Some 12% of the Tunis ZHS households are lodging with family or friends.

While related families are living as separate households within one house, social activities in the courtyard around which they have their separate dwellings (See Figures 8-10). The courtyard is a multi-functional space for a variety of activities ranging from the purely social - a place to gather in the evening - to the economic - space for raising fruits, vegetables and poultry. In addition, it is the domain of women during the day as many of their household chores are performed within the privacy provided by the surrounding walls. Dwelling units available to each household normally include one or two rooms, which on the average are 15 m^2 to 20 m^2 maximum. Rooms are also multi-functional and they generally have a day corner and a night corner. When they are available, beds stand at one end of the room while furniture used for sitting and eating is at the other end. Cooking space may be found in a separate kitchen in the courtyard. This space contains kitchen utensils, "canoun, primus stove and couscoussières", and is usually not shared by several households. Those with no separate cooking space use that section of the courtyard immediately in front of their doorways for cooking.

Floor plans shown in Figures 8 to 10, may provide room for high density occupancy with no feeling of overcrowding. The courtyard operates as breathing space from the confinement of small rooms where households of 5-6 persons are confined together. However, this pattern has been broken by the ever-increasing number of ZHS tenants. As a result, privacy is no longer available. Many activities which would usually be performed in the courtyard have to be drawn into the confines of the rooms available to the family.

Figure 11 (drawn from Fig. 8) depicts the typical evolution of living space attributable to an increasing housing demand in ZHS environments. Originally, the space occupied by three housing units belonged to one extended family, which parcelled off half the land and sold it as two lots. Over time, the number of families living within the three houses rose from three to fourteen, ten of which are tenants and are unrelated.

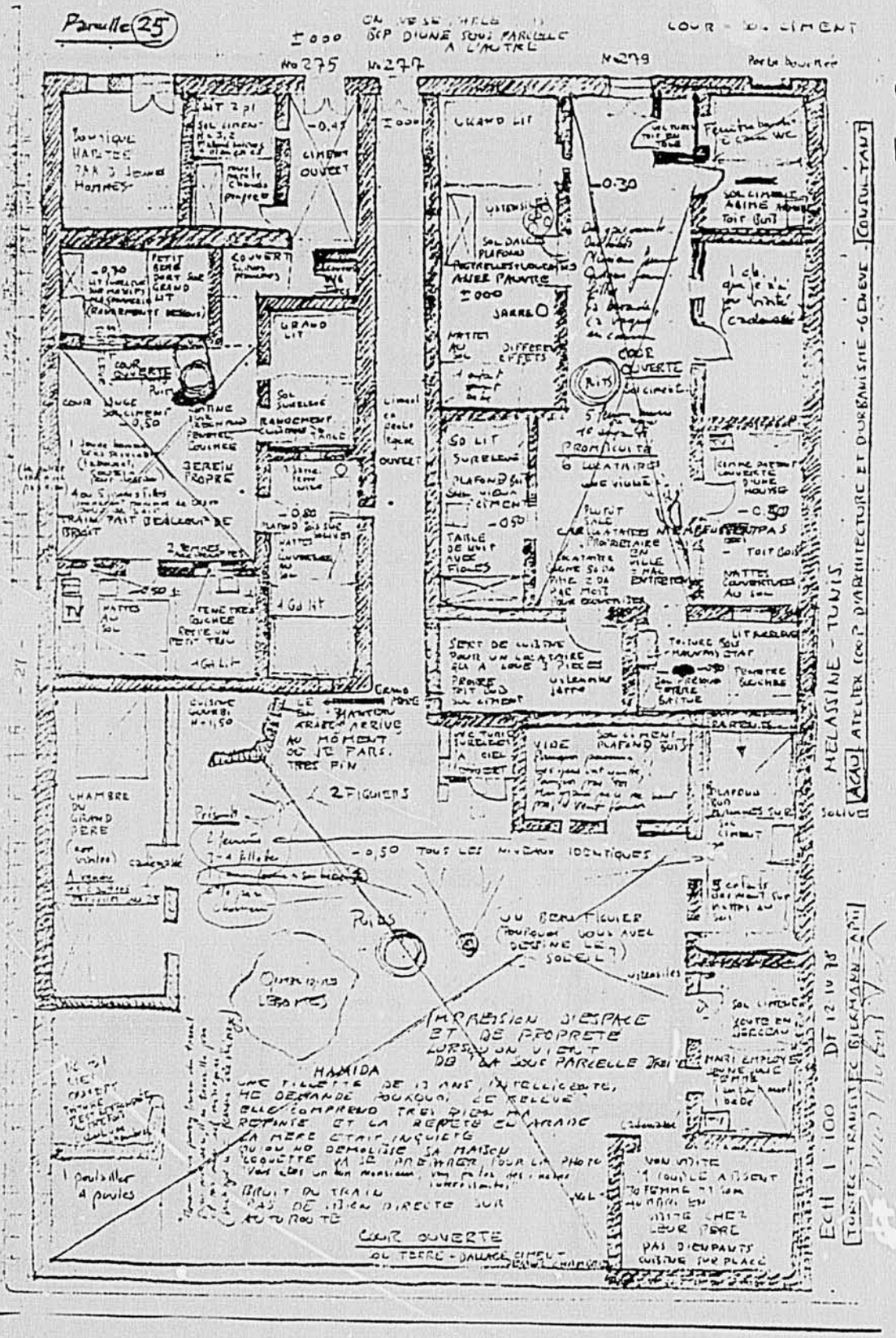
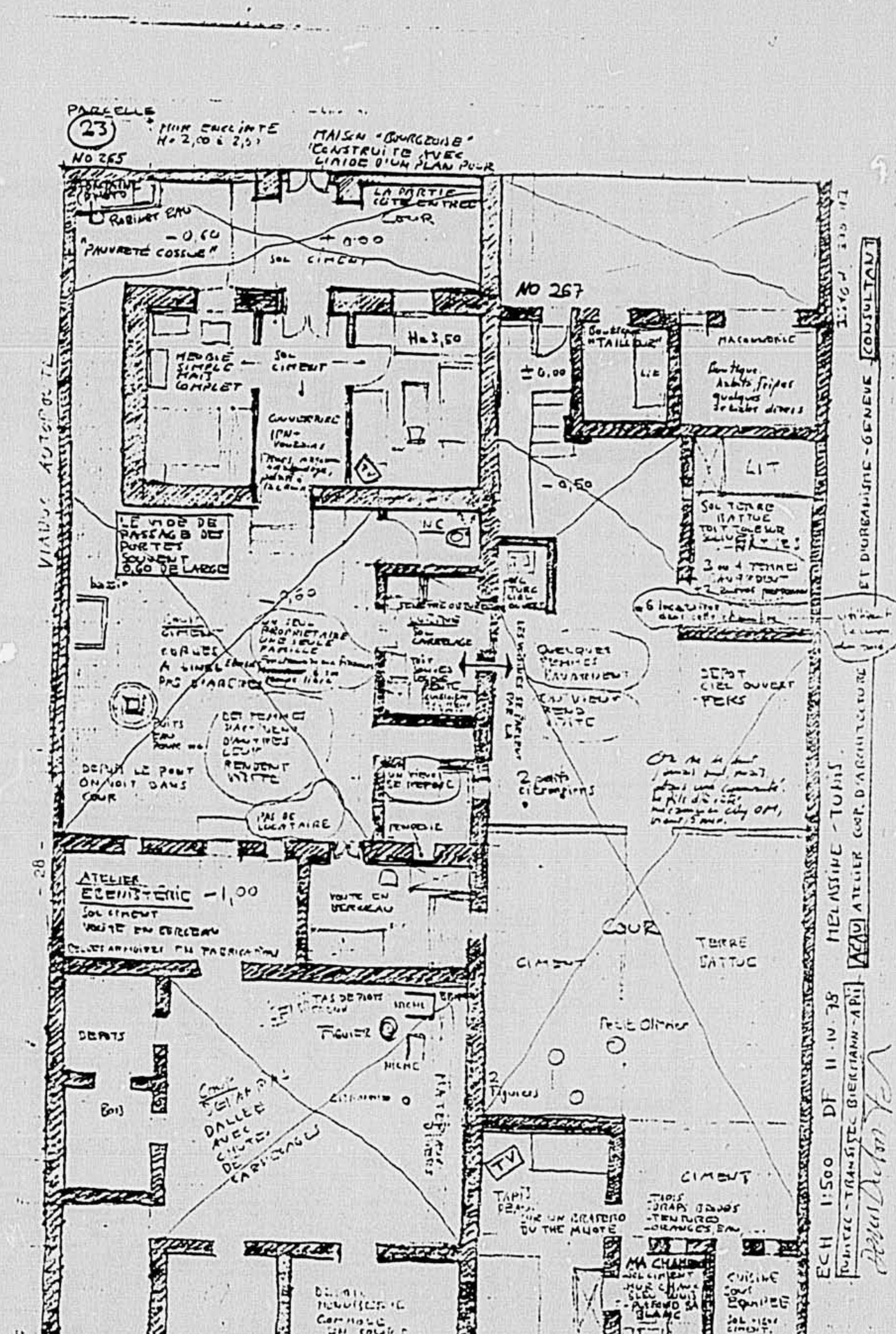

Parcelle 25
N°275
N°277
N°279
Porte bouverie
LOUR - DU CIMENT
GRAND LIT
BOUTIQUE HANTEE PAR 3 Jeunes Hommes
SOL CIMENT
CIMENT OUVERT
PETIT BERE PORT SUR GRAND LIT
COUVERT
GRAND LIT
COUR OUVERTE
Puits
COUR JUGE SOL CIMENT -0,50
SOL SURELEVE
RANGEMENT
FENETRE COUVREE
SEREIN PROPRE
TRAIN FAIT DEBLOQUER DE BRUIT
2 FENETRES
-0,50
TV
MATTES AU SOL
FENETRES COUCHEE PERTE UN PETIT TROU
4 Gd LIT
-0,80
PLAFOND SUR VOUTE
MATTES COUVERTES AU SOL
4 Gd LIT
Grand Porte
CUISINE COUVERT H=1,50
LE Sr HAMOU ARRETE ARRIVE AU MOMENT OU JE PARS. TRES PIN
2 FIGUIERS
CHAMBRE DU GRAND PERE
Prises
2 femmes 3 à 4 Filles
-0,50 TOUS LES NIVEAUX IDENTIQUES
Puits
UN BON FIGUIER (pourquoi vous avez dessiné les 7 soleil)
Olivier
Lauriers
IMPRESSION DESORDRE ET DE PROPRETE LORSQU'UN VIENT DE LA SOUS PARCELLE
HAMIDA
UNE FILLETTE DE 13 ANS, INTELLIGENTE, ME DEMANDE POURQUOI CE RELEVE ELLE COMPREND TRES BIEN LA ROTANTE ET LA REPETE EN ARABE
LA MERE ETAIT INQUIETE QU'ON NE DEMOLISSE LA MAISON
LEQUETTE M'A PROPOSE POUR LA PHOTO
BRUIT DU TRAIN
PAS DE VUE DIRECTE SUR AUTOROUTE
1 poulailler à poules
COUR OUVERTE
DE TERRE - DALLAGE CIMENT
SOL DALLE PLAFOND POUTRELLES VOUTAINS ALLER PAUVRE
JARRE
MATTES AU SOL
DIFFERENTS EFFETS
COUR OUVERTE
Puits
SOL SURELEVE
PROMISCUITE
6 LOCATAIRES
SERT DE CUISINE POUR UN LOCATAIRE QUI A 4 PIECES
PROPRE TOIT DU SOL CIMENT
VIDE
SOL CIMENT PLAFOND SUIE
PLAFOND SUR VOUTAINS SUR
SOL CIMENT
5 enfants dorment sur nattes au sol
SOL CIMENT COUTE EN DESCENDU
MARI EMPLOYE
1 lit 1 table
VOISINE MAITE 4 ENFANTS 20 FEMME ET SON MARI EN VISITE CHEZ LEUR PERE
PAS DE PLACE
Fenêtre bouchée à cause WC
SOL CIMENT ABIME TOIT SUIT
1 ch. qui ne va pas
Cadenas
COUR OUVERTE
Puits
SOL CIMENT
-0,30
-0,50
TOIT CASSE
NATTES COUVERTES AU SOL
TOITURE SOUS PLAFOND STAT
TOITURE FUITE
LIT ACCROCHE
ACAU ATELIER COOP D'ARCHITECTURE ET D'URBANISME - GENEVE - CONSULTANT
MELASSINE - TUNIS
TOPOGR. - TRADUCTEC BIERMANN - APH
Echl 1:100 DF 12 IV 78

Fig. 8



PARCELLE
23
NO 265
MAISON "BOURGEOISE"
Robinet EAU
"PAUVRETÉ COSSUE"
SOL CIMENT
NO 267
LIT
LE VIDE DE PASSAGE DES PORTES SOUVENT 0,60 DE LARGE
ATELIER EBENISTERIE -1,00
VOUTE EN BERCEAU
COUR
CIMENT
TERRE BATTUE
Figuier
TV
CIMENT
MA CHAMBRE
CUISINE
ECH 1:500 DF 11.IV.78 MELASSINE - TUNIS
ACAU ATELIER COOP. D'ARCHITECTURE ET D'URBANISME - GENEVE
CONSULTANT

FIG. 9

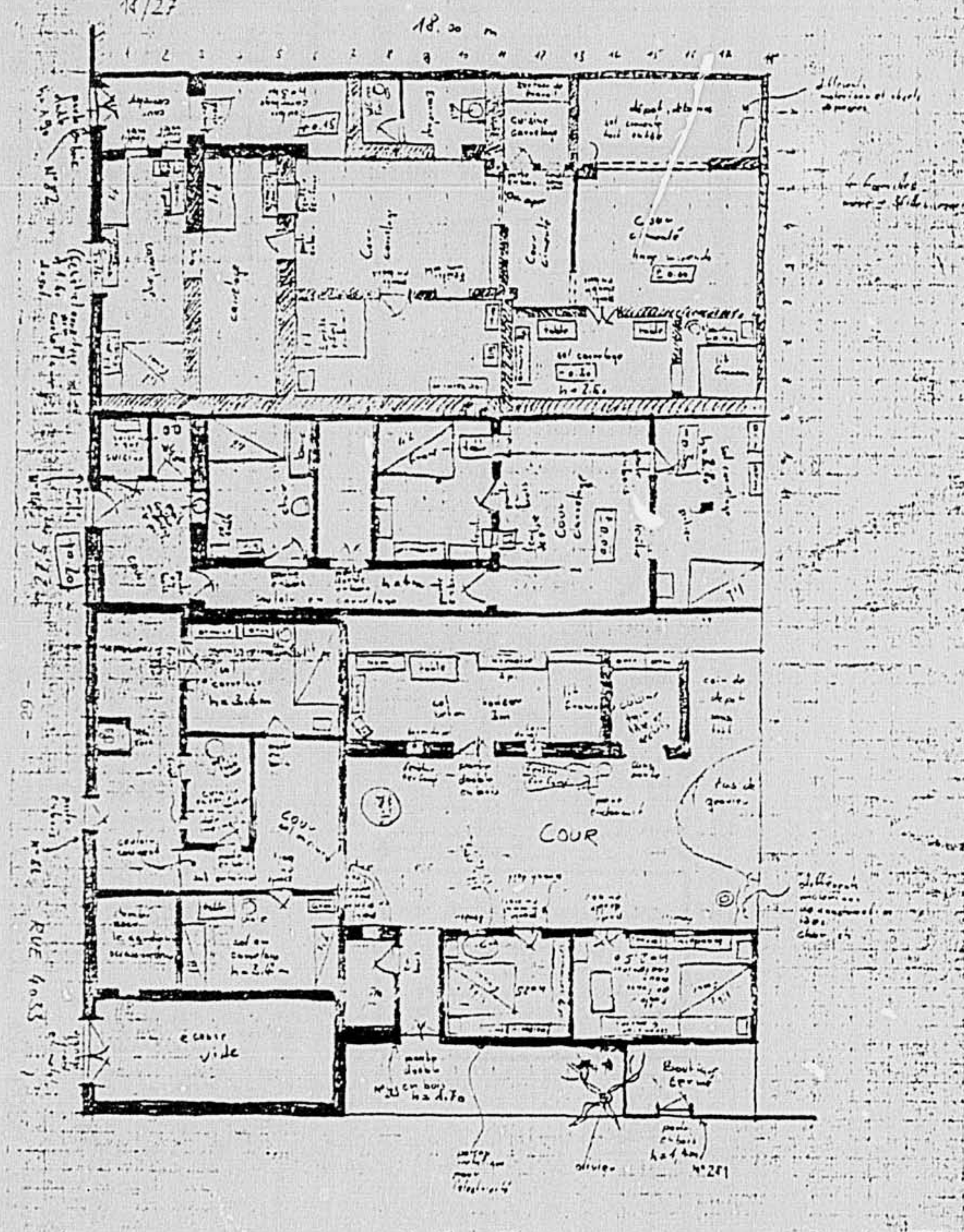
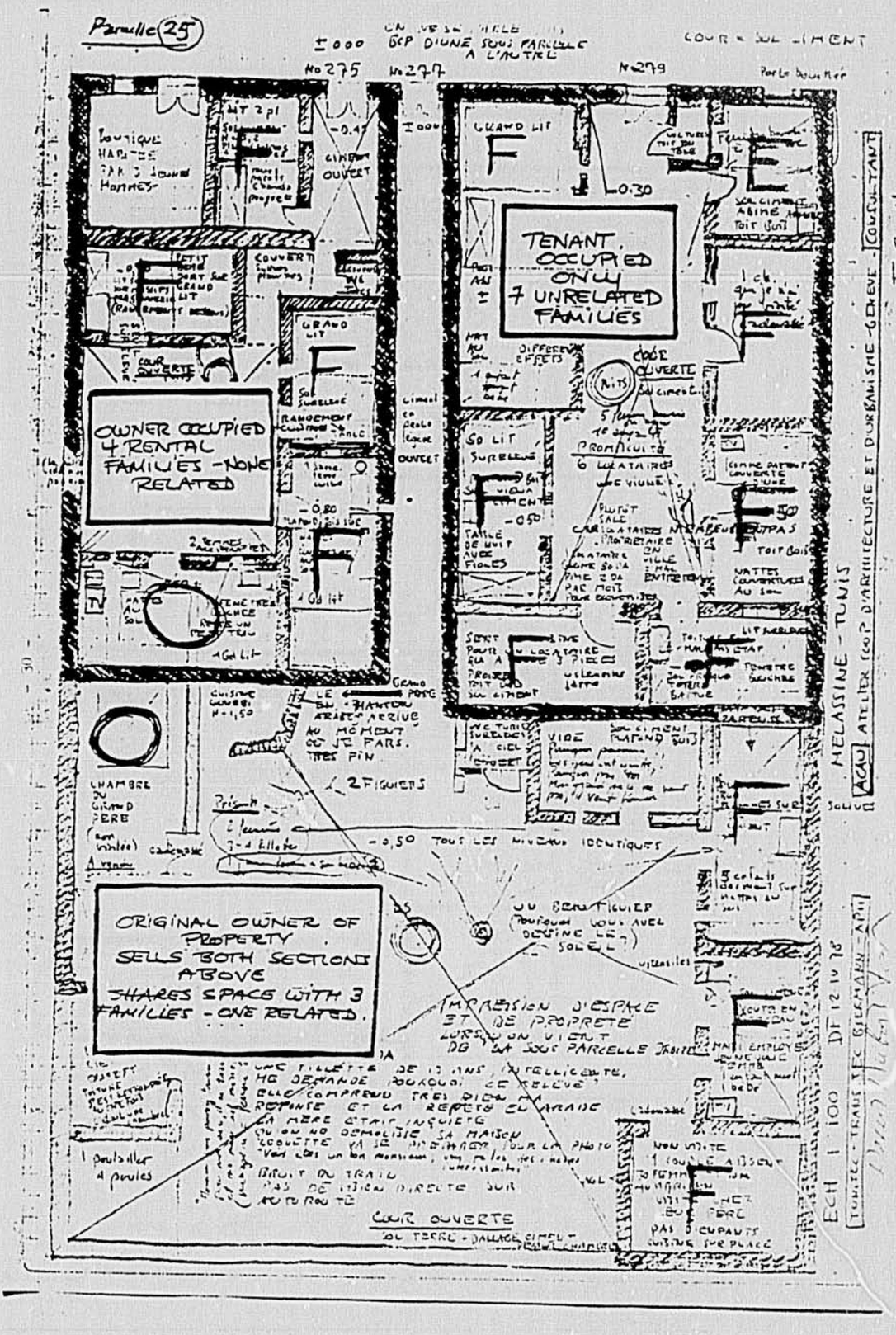


Fig. 10

N° 282 3 familles ouvrières

Ech. 1mm = 50 cm Mellassine le 11.4.78 TUNITEC SA


Parcelle 25
No 275
No 277
No 279
TENANT, OCCUPIED ONLY 7 UNRELATED FAMILIES
OWNER OCCUPIED 4 RENTAL FAMILIES - NONE RELATED
ORIGINAL OWNER OF PROPERTY SELLS BOTH SECTIONS ABOVE SHARES SPACE WITH 3 FAMILIES - ONE RELATED.
COUR OUVERTE
2 FIGUIERS
MELASSINE - TUNIS
ACAU ATELIER COOP D'ARCHITECTURE ET D'URBANISME - GENEVE - CONSULTANT
ECH 1 100 DF 12 10 78
FIG. 11

In the house occupied by seven tenant families (one family per room), the owner moved out and built a maximum amount of residential space in order to rent out as many rooms as possible. Courtyard space is reduced to a bare minimum.

This process where an increasing number of unrelated households live in one-room housing units and share the same common space may be characterized as an "oukalization" of the ZHS to the extent that it duplicates housing patterns common to the Medina's older neighborhoods. (Historically, oukalas were Middle Ages inns housing one family per room for a short period of time).

Family ties and the desire for privacy associated with Arab dwelling units are further disrupted by the need for the extra income that can be provided by tenants. For older residents, their house is often their only savings and its purchase amounts to a lifetime investment. However, their incomes do not make it possible for them to maintain it solely for family use. Therefore, the acceptance of tenants has become a necessity. Tenants also benefit from this arrangement since rents paid per ZHS household are cheaper than for other systems of housing, allowing families to save enough money to put into a house of their own. The trade-off for the economic benefits derived by both parties are the extremely high densities found in the ZHS.

Mutual assistance in the ZHS operates essentially at the neighborhood and family rather than community level. Social networks are drawn closer around the neighborhood and the family. At community levels, social organization takes place largely through the local cells established by the Destour Party. Social assistance is also provided by social workers assigned to the community. This form of welfare is largely a matter of counselling individual family members. Local organizations retain a much stronger control than the police, as problems solvers and disputes are often settled through the local party cell. Public space improvement is seldom found at the community level; but local cells play a major role in preventing the construction of illegal housing units in the area.

The provision of social services, education and health within the ZHS is subject to standards approved for the District as a whole. In Melassine, there are 1.75 classrooms per 1000 residents, a figure lower than the District level of 2.6 per 1000 and the national average of 2.4 per 1000. The area's lack of educational facilities is compounded by the fact that 23% of the population is of school age. Existing classrooms are overcrowded, with an average 43 students per class. Thanks to a nearby major hospital, health facilities are adequate in the Melassine area. Other area ZHS are not quite so fortunate. A conscious effort is being made to provide a whole range of services including family planning units, social work centers and health facilities in all those ZHS slated for upgrading.

D. Economic Characteristics of the Target Population

1. Income.

There is no reliable survey of income distribution for Tunisia, but in 1975 the Institut National de Statistique completed an exhaustive study of household expenditures entitled "Budget-Consommation". Assuming that households have no savings outside their dwellings, we have a rather conservative but not unreasonable estimate of income patterns, especially for the poor majority. Five thousand households were surveyed, including 800 in the Tunis District.1/

From the survey, median income (expenditure) levels can be estimated for Tunis and other major cities (Sfax, Sousse, Bizerte, Gabes), the other towns and the rural areas. These are given in Table 8, together with adjustments for income growth and inflation during 1975-78. We have assumed that household income grew at the rate of 2.0% per year, while prices rose at 6.0% per year. The combined rate is 8.12 %.

TABLE 8.
MEDIAN INCOME/EXPENDITURE LEVEL, TUNISIA, 1975-1978

	1975 Population (000)	Monthly Median Income/Household 1975	1978 (Estimate)
District of Tunis	925	91	115
Sfax, Sousse, Bizerte, Gabes	355	56	71
All the above	1,280	75	95
Other towns	1,376	66	83
All urban	2,656	61	77
Rural	2,932	38	48
All Tunisia	5,588	61	78

1/ See Institut National de la Statistique, Ministère du Plan, Recensement général de la Population et des Logements du 8 mai 1975, Tunis, 1976. Institut National de la Statistique, Logements: Tableaux et Analyses des Résultats du Songe au 1/10 ème, Volume 1, 1975, no date. Note sur les Résultats Provisoires de l'Enquête "Budget-Consommation", Tunis: Ministère du Plan, 1976 (mimeo), and Suzy Devoize and Ridha Ferchiou, "Présentation et Analyse de l'Enquête 'Budget-Consommation' de 1975", District of Tunis, 1976. Also: Enquête Nationale sur le Budget et la Consommation des Ménages, 1975. Institut National de la Statistique, Ministère du Plan, Tunis, April 1978.

From this national median, income distribution is such that the lowest 20 percent of households earn less than half the median in the cities and less than two-thirds of the median in rural areas. Should income distributions in the various regions retain their overall patterns, (or geometrical features) as growth and inflation occur, those proportions would continue to be valid. This assumption is usually regarded as reasonable.

Regionally, median income levels are mainly a function of urbanization. For most regions, this figure will be somewhat above 50 D. in 1978. In the West, where towns are few and farming less productive, the median income may still be as low as 36 dinars per month. On May 1, 1978, the minimum industrial wage (SMIG) was raised to 45 dinars per month. However, as was mentioned elsewhere in this report, a substantial number of poor urban families could count on 1.5 wage earners and therefore could be estimated to receive about 68 dinars per month.

For the City of Tunis, Table 8A emphasizes what would happen to the target group between the 20th and 50th percentile in case income distribution patterns remain basically unchanged. In constant dinars, a 2 per cent growth rate equates a 22 percent rise in ten years. Meanwhile however, should inflation remain as low (or high) as 6 percent, price and wage levels should rise by 79 percent. The combined impact means a 118 percent increase. We have assumed that income distribution among percentiles of households will remain the same.

Most recent income distribution data available for the City of Tunis are based on a survey of 1,109 households completed in 1976. Table 9 summarizes the survey's findings on monthly income distribution for the various housing systems.

This survey shows that over 7% of all ZHS and Medina residents earned less than the median income of 91 TD computed by the INS 1975 Survey of expenditure levels. A more recent survey was completed in Melassine in 1978 and it indicates that 25% of all households earn less than 30 TD/month, 60% between 30-80 TD and 16% over 80 TD. Median monthly income per household is 46 TD and 95% of the households earn less than the District's 1978 median income level of 115 TD.

2. Employment characteristics

Consideration of the employment characteristics of the target population must focus on Tunis as information for other areas is either unavailable or incomplete. Additionally, the task of assessing employment opportunities for this segment of the population is made difficult by the fact that a significant proportion of the labor force is employed in traditional or non-structured activities.

Surveys completed for the Tunis District in the early 1970's

TABLE 8A

INCOME LEVELS IN TUNIS AT VARIOUS GROWTH RATES (in Dinars)

	1975	1978	1981	1985
Median Income				
Real growth projected at 2% annually in constant dinars	91.0	96.6	102.5	110.9
Inflationary adjustment without real growth, at 6% annually	91.0	108.4	129.1	163.0
Combined effect or 8.12% growth in current dinars	91.0	115.0	145.4	198.7
Income at the 20th Percentile				
Real growth projected at 2% annually in constant dinars	46.0	48.8	51.8	56.1
Inflationary adjustment without real growth, at 6% annually	46.0	54.7	65.3	82.4
Combined effect or 8.12% annually in current dinars	46.0	58.1	73.5	100.4

TABLE 9

MONTHLY INCOME FOR CERTAIN HOUSING TYPES

Housing System	MONTHLY INCOME RANGE Q_1 25%	Q_2 50%	Q_3 75%
Haut Standing (Expensive)	201.0 D	265.0 D	333.0 D
Moyen Standing (Middle Income)	57.0 D	89.0 D	147.0 D
Recasement (Resettlement Areas)	52.0 D	72.0 D	97.0 D
Gourbiville (Slums)	32.0 D	49.6 D	74.6 D
Centre Urbain (Downtown)	72.4 D	111.5 D	175.0 D
Centre Historique (Medina)	39.4 D	61.4 D	87.8 D
Habitat Rural (Rural)	26.0 D	43.0 D	63.0 D
Ensemble District	46.0 D	73.0 D	120.0 D

indicate that in the ZHS about half of the heads of households are employed on a non-permanent basis. This classification includes laborers, self-employed tradesmen and craftsmen. The working population consists essentially of skilled and semi-skilled workers in industry, transportation and construction, service sector personnel, small tradesmen and craftsmen. Smaller urban centers such as Beja and Kef have a significantly larger proportion of the working population employed on a part-time basis particularly in the construction trades, in agriculture and in the textile, leather and clothing industries. In the case of textiles, part-time workers are mainly women who produce needlework and carpets either independently or as recipients of social assistance benefits under schemes coordinated by the rural development program in an effort to promote handicrafts.

The District's 1976 survey entitled " Population, Logement, Revenu et Systèmes d'Habitat" provides an overview of employment patterns for heads of households in ZHS (See Table 9A). This study shows that about 42% are industrial workers, day laborers and unskilled laborers while another 17.7% are service employees. It should be noted that an almost equal percentage of these occupational groupings can be found among the heads of households in the Medina.

The unemployment level shown in Table 9A covers only heads of households and does not give an actual assessment of the unemployment problem in the District or in the target groups. Figures computed for the District in 1975 show that out of a total of 310,000 persons available for

TABLE 9A

PROFILE OF HEADS OF HOUSEHOLDS BY

EMPLOYMENT AND LOCATION OF RESIDENCE

EMPLOYMENT CATEGORY	LOCATION OF RESIDENCE		
	ZHS	MEDINA	ALL THE DISTRICT
		(percentage)	
Individual Owners	-	-	.7
Corporate Owners	1.43	2.92	4.44
Professionals	-	2.24	8.73
Mid-Level Management	3.15	5.8	11.3
Office Workers	-	2.24	7.35
Non-Office White Collar	1.07	4.7	3.53
Personal Service	17.77	19.73	17.52
Blue Collars	25.5	16.14	16.6
Artisan Labor	9.46	10.54	7.4
Day Labor	16.05	12.78	6.3
Street Vendors	3.44	1.12	1.0
Unemployed	4.01	4.26	3.12
Retired	3.72	8.52	6.4
Inactive	5.73	1.3	3.26
TOTAL	100	100	100

work, including those seeking their first jobs, 76,000 were unemployed (some 25%).

Employment opportunities available to ZHS residents are located outside the areas of residence. The 1978 TUNITEC Survey of Melassine show that only 14% of those employed work within the Melassine area itself, and 71% in the center of town and in the Medina. The remaining 15% are employed in various other peripheral sections of town. Local employment in Melassine is concentrated along the main thoroughfares and consists primarily of small scale trade and artisan activities, in addition to a large central market. According to District estimates, business and industrial operations provide 680 jobs in the Melassine area while government agencies supply another 180-200 jobs. While the majority of the residents in both Melassine and other ZHS work outside these neighborhoods, ZHS tend to locate relatively close to employment centers. Thus, residents of Melassine, Saida Manoubia and Jebel Ahmar have easy access to the center of town and the Medina, while the southern ZHS are located close to the industrial zone.

On the average, there are 1.41 persons employed per household in ZHS. This figure is slightly lower than the overall average for the District of 1.6. However, it should be noted that in many cases households are supported by members employed abroad.

No breakdown is available for female employment rates among the target group. However, the Melassine study referred to earlier shows that women account for 7% of the regularly employed population. Employment opportunities for women are predominantly in the fields of domestic services, textiles and industrial sectors and clerical work.

E. Housing Expenditures

What share of the target population's income is devoted to housing? The "Budget-Consommation" Survey mentioned earlier reports that all Tunisian households devote 27.9 percent of their income to housing: rural households 23.9, urban households 29.0 (including the Tunis District at 31.3%).

In their analysis of the "Budget-Consommation" data as it applied to the District of Tunis, Devoize and Perchiou concluded that payments for housing in total equalled 33.4% of expenses whereas payments for lodging (that is rent and acquisition only) consumed 18.5% of the family budget in 1975. They projected levels of 20.1% by 1986. A level of 19.3% has been estimated in this report for 1978.

Table 9B suggests that lower percentages are applicable to the more generalized national data. 1/

1/ Ibid. Table 328. pp. 246-247

T.328. - DETAILED BREAKDOWN OF HOUSEHOLD BUDGET

PRINCIPAL EXPENSE CATEGORIES	LARGE CITIES	URBAN AREAS	RURAL AREAS
FOOD:	36,6	40,6	47,6
Céréales	6,3	8,8	11,6
Légumineuses	0,9	1,2	1,2
Légumes	5,7	6,9	7,4
Fruits	2,4	2,0	2,5
Viandes.....	7,5	7,5	7,8
Poissons	1,5	1,5	0,6
Laits et Prod.Laitiers	2,4	1,6	2,4
Oeufs	0,7	0,6	0,4
Sucre et Produits sucrés ...	1,6	1,8	2,7
Huiles	2,6	5,0	6,0
Beurre et corps gras.....	0,3	0,1	0,2
Sels et condiments	0,3	0,4	0,5
Boissons	2,9	2,8	3,6
Repas à l'extérieur	1,5	0,4	0,7
HOUSING:	31,3	29,0	23,9
Rent	13,0	7,5	7,3
Energy	4,7	4,3	2,6
Repairs	5,0	7,7	6,9
Furniture	2,1	2,5	1,6
Appliances	0,8	0,6	0,3
Kitchen Utensils	0,4	0,5	0,7
Linen	0,5	0,7	0,7
Other	0,6	0,2	0,3
Acquisition of a home	4,2	5,0	3,5
CLOTHING:	8,3	8,5	9,6
Vêtements principaux neufs	3,3	2,5	2,1
" " fripperie	0,1	0,1	0,5
" " traditionnel	0,2	0,7	0,7
Linge de corps S/V.neuf	1,1	1,1	1,0
" " " fripperie	0,1	0,1	0,2
Effets personnels	0,1	0,1	0,1
Couvre-tête	1,8	0,2	0,5
Chaussure	0,5	1,6	1,6
Tissus d'habillement	0,2	0,6	0,3
Frais de couture mercerie	0,8	0,3	0,4
Habillement rentrée scolaire	8,1	1,2	1,1

PRINCIPAL EXPENSE CATEGORIES	LARGE CITIES	URBAN AREAS	RURAL AREAS
HYGIENE:	5,9	5,7	4,6
Soins médicaux	3,3	3,0	2,7
Soins personnels	1,4	1,0	0,7
Produits d'hygiène	1,2	1,7	1,2
TRANSPORT. & COMMUNICA.:	6,3	8,0	6,9
Achat	1,8	0,9	0,8
Frais d'entretien	2,5	1,5	0,6
Transport en commun	1,6	1,5	2,1
Communication	0,4	0,1	0,0
ENTERTAINMENT:	9,1	8,0	6,9
Tabac	2,5	2,7	3,0
Spectacle	0,5	0,3	0,4
Article de loisirs	1,0	0,8	0,8
Culture	0,3	0,2	0,0
Enseignement	1,3	0,8	0,8
Rentrée scolaire	0,9	1,0	0,7
Vacances et voyages ...	2,6	2,2	1,2
OTHER	2,4	4,2	3,9
TOTAL	100,0	100,0	100,0

The statutes of the CNEL require that the amortization payments of mortgage loans not exceed one-third of a family's income. The statutes reflect the official perception that Tunisian families will make great sacrifices to acquire their own home. It should be recognized, however, that a family which accepts a mortgage payment of 30% of its income, for example, may possibly be accepting conditions in which the overall family expenditures for housing (adding utilities, maintenance, etc. as noted in Table 9B) exceed 45% of income, a substantial change from the roughly 30% figure suggested by the 1975 "Budget-Consommation" Study.

To analyze further, rent is reported to be only 18.5% and, presumably, the well-off are less to be renters. Moreover, 14% of all housing expenditures actually cover utilities, with another 10% for maintenance and 20% for miscellaneous purposes. Taking all these amounts into account, the dwelling space itself in the Tunis District generally accounted for 18.5% of household expenditures in 1975. According to the previously-mentioned 1976 District Study of the ZHS, average expenditures on housing accounted for 25% of total income. (See Table 10). This figure includes rent, utilities, maintenance and taxes associated with housing. It does not, however, include expenditures associated with the purchase of a home and which affect some 63% of the ZHS population (48.8% being owners and 17.6% illegal occupants who have built their own shelters without a building permit. The study shows that the average rent per ZHS household amounts to 8 D. ($19), or 14% of the average ZHS income of 56 D. ($134).

TABLE 10

DISTRICT OF TUNIS
HOUSING EXPENSES AS A PERCENTAGE OF THE TOTAL
BY TYPE OF HOUSING

Type of Housing \ Percent of Total	0-4%	5-10%	11-15%	16-20%	21-30%	31-40%	40%	TOTAL
Expensive	-	63.8%	6.3%	4.5%	4.2%	8.5%	12.7%	100%
Middle Income	13.5	27.3	12.4	9.3	14.0	10.2	13.3	100
Resettlement Areas	1.2	24.9	14.5	10.5	17.4	12.2	16.3	100
Slums	16.0	31.6	20.0	15.0	17.2	6.3	10.0	100
Medina	0.3	26.4	16.3	13.3	23.5	7.4	12.8	100
Downtown	-	36.2	20.8	10.7	15.5	8.1	8.7	100
Rural	5.2	42.2	5.2	26.4	5.2	5.2	10.6	100
TOTAL	4.14	30.7	15.6	11.5	16.7	8.7	12.4	100

IV. DIMENSIONS OF THE SHELTER PROBLEM

A. Human Settlement Patterns

The Tunisian population has been continuously moving eastward from the mountainous west to the coast, and from rural areas to the country's urban centers.

Census analysis available does not yet include growth rates for all major urban areas; however, those known confirm that major cities are growing at rates faster than the surrounding, smaller urban settlements or rural communities. Tunis continues to dominate the nation's urban development pattern.

National development policy reflects a somewhat general concern for the west-to-east, rural-to-urban population flows and as a result, large resources have to be channelled through rural development programs to western, essentially agricultural regions. Present plans call for administrative and economic decentralization based on the specific capabilities and features of each of the nation's economically distinct regions, in order to meet the needs of their citizens and provide for harmonized regional development.

1. Degourbification

One of the most specific efforts to influence settlement patterns has been labelled "dégourbification". Even though the following paragraphs covering the housing stock will show that any definition of a "gourbi" is vague, the gourbi is most often a simply constructed home consisting of one or more rooms, built of local materials (usually stone, "tuffe", mud blocks, etc...); it often offers inadequate ceiling height and no plumbing. Most gourbis, built to the most minimal sanitation and health standards (very limited ventilation, no running water, etc...) fail to conform to building codes but have courtyards or enclosures usable as animal shelters and they may be of quite durable construction.

When a gourbi is a simple, isolated shelter, the government finds it difficult and costly to provide the necessary infrastructure. In such cases, the government's policy is to assist the owner in procuring a decent housing unit in a rural or suburban housing development. On the other hand, when the gourbi is built with durable materials and is located in a neighborhood close to public utilities (water, power, sewers...), it may be eligible for restoration or renewal benefits.

The first efforts at degourbification were initiated in the fifties with a relocation program. This program provided the land and improved facilities as well as construction materials but each owner was allowed to build as he chose.

At a later date, "cités de recasement" (parts of Ibn Khaldun, Cité Ettahrir, Kabaria and Cité El Khadra) were developed to densities of 280 persons per hectare. Earlier efforts had reached even much denser levels of inhabitation with some exceeding 600 persons per hectare.

In urban centers, a form of urban renewal was also considered, with condemned units being razed and replacement housing built with lower densities programmed for the "recuperated" land and improved building and other standards for housing units left in place.

To meet the infrastructure needs of the rural communities, government planners have devised relocation programs around rural centers. Thus, a government-owned site well located in relation to existing or planned public facilities may be selected for subdivision along more conventional, infrastructure-oriented lines, taking into account the needs and preferences of the neighboring communities. A housing program is then designed by local authorities for households to be relocated from gourbi areas. A gradual transfer from the older communities to the new one is planned and it culminates in the razing of the old structures. Though such rural programs are still selected as a solution to the degourbification problem, housing officials usually attempt to limit the razing of unsanitary units and try to rehabilitate units that can be improved within a restoration program.

2. Densities

Tunisian urban areas offer most of the traditional features of such sites with a history of over 2,000 years. However, many have left their original Roman period sites, where they enjoyed easy access to complete public utility networks designed around thoroughfares intended for horse-drawn carts and moved to less vulnerable, hillside locations where the center of town or Medina has become a densely populated section serviced by pedestrian walkways. Outside the Medina, often surrounded by a wall, the urban area has been open to the influence of succeeding cultures and the building patterns associated with urban development.

Many of these less dense areas found around the Medina reflect a European-styled architecture and street layouts of the 18th and 19th centuries. A strong rural-to-urban migration intensified densities in the Medina and added pockets of spontaneous, simple structures to the urban periphery. These pockets often consisted of owner-built units laid out haphazardly with no tie-in to municipal services.

It should be noted that even in the older, now fully urbanized areas, population patterns and densities are similar to those of the Medina.

Tunisian economic prosperity of the late sixties and early seventies was associated with fast expanding, new residential construction in the nation's urban areas. At the same time, however, in a number of cities (including the largest, Sousse and Tunis), associations were organized to work actively to safeguard the quality of life required by these traditional centers of the city and to preserve their variety.

In the Tunis Medina, densities have reached 550 persons per hectare. At Melassine, a spontaneous development area, population density is 636 per hectare. In the growing suburban area of El Menzah, the A.F.H. is constructing middle-class housing projects using a 220 per hectare standard, close to the level of the Tunis District.

B. Housing Stock

1. National Census Data.

To describe the nation's existing housing inventory, the 1975 Census identified ten different types of units. They are listed below with their respective percentage of the total inventory.

1. Traditional Arab house	61.85%
2. Gourbi	16.88%
3. Freestanding modern house	10.19%
4. Apartment	4.29%
5. "Kib", a hut made of branches and straw thatch	2.44%
6. Grottoes, troglodyte houses & other units not meant for habitation	1.76%
7. Tent	1.39%
8. Room in an oukala	0.52%
9. Barracks	0.38%
10. Room in an institution	0.30%

Out of a total of 1,005,670 units, 45.4% were in urban areas and 54.6% in rural areas, with some 7,6% reported vacant. Fifth Plan records bring out the fact that between 1966 and 1975, apartment units, modern houses and modern units have been increasing their percentage of the total inventory at the detriment of less durable and less equipped gourbis and other impermanent units. 1/ (See Table 11).

In addition, census statistics show that 77% of urban units had 3 rooms or less. In rural areas, 84% had 2 or fewer rooms. One room units comprised 19% of urban area totals and 57% of area totals.

1/ Vème Plan de Développement Economique et Social 1977-1981. Republic of Tunisie, Tunis, 1978, p. 337.

TABLE 11

GENERAL CLASSIFICATION OF HOUSING STOCK

Unit Type	Census 1966	Census 1975	Projection 1981
Apartment, trad. and modern house	55%	74.7%	77.5%
Gourbi and others	44%	25.3%	22.5%
(Total Stock-000 units)	874	1,006	1,131

Data analysis on the average number of rooms per dwelling unit and the number of people per room show a range running from 3.13 rooms per unit in the urban area of Jendouba, to 3.71 or 3.72 in Tunis and Sfax, with 1.93 people per room in Tunis Sud to 1.38 in Médénine. By comparison, in the Mélassine area of Tunis, an average of 2.90 rooms per unit has been recorded with an average of 3.60 persons per room. Though data were not available, on-site visits of spontaneous settlements (ZHS) or "recasement" areas suggested that such areas in all of the nation's major cities will show the same level of difference from the national average.

Nationally, 69% of urban area dwellings were reported to have kitchens, 68% had electricity, 55% were tied to a water supply system and 44% to a sewer system. For the national housing inventory, waste water systems data show 21% of the units were connected to a sewer network, 11% used septic tank or soaking pit and 68% used some other form of disposal.

The following tables show national housing inventory broken down according to construction materials and building techniques used.

TABLE 12a

NATIONAL HOUSING STOCK
MATERIALS USED IN CONSTRUCTION
OF WALLS

Materials	Number of Units	Percentage
Stone, brick, cement block with cement mortar	628,480	62.49
Stone with clay mortar	199,780	19.87
Tamped earth and straw	98,950	9.84
Stone without mortar	6,410	0.64
Wood	3,080	0.30
Thatch	21,710	2.16
Tenting	13,560	1.35
Others	22,640	2.25
TOTAL	1,005,670	100.

TABLE 12b

NATIONAL HOUSING STOCK

MATERIALS USED FOR ROOFING

Materials	Number of Units	Percentage
Reinforced concrete slab	365,310	36.33
Wood	126,860	12.61
Brick, vaulted	126,500	12.58
Tile	52,440	5.21
Thatch covered by clay	221,940	22.07
Zinc or Asbestos sheets	16,490	1.64
Thatch	46,420	4.62
Tents, Caves and Others	49,710	4.94
TOTAL	1,005,670	100

2. Standards

To facilitate planning operations, the GOT identified four classes of dwelling unit listed in ascending order of cost: rural, suburban, economic and standing. Both rural and suburban units may be designed for expansion by one room or more. The main difference between the urban and the rural types is the degree to which the unit is connected to municipal public utility networks. Another major difference lies in the degree of government subsidy available to the purchaser.

Rural and suburban units start from a two-room core, plus W.C. and kitchen. Such units are usually built on 75 to 100 m^2 lots in urban or suburban areas, but may be on 400 m^2 lots in rural areas where farm animals and gardens take up a lot of space. The built-up area is approximately 27 m^2 for rural units and 37 m^2 for the suburban.

Rural and suburban units are built in such a way that the owner can easily add another room (its foundations will be laid together with those for the main house and thinner walls will be used where future doors would be placed). In some designs a second story may be added. Private developers may also build suburban units as apartment buildings. Some suburban units may be built with 3 rooms.

Thus, design variations in suburban units being built are slight so far as construction costs are concerned. Major variations in costs stem from land costs and the extent to which units are connected with public utilities. The gap between the rural unit with no infrastructure facilities and the suburban unit has been the focus of some recent GOT thinking.

A new, improved design (rural amélioré) or "improved rural" is under consideration but no decision has been made yet as to its degree of sophistication.

The M.O.E. has made a number of recommendations covering minimum standards for all low cost units:

Room size - 9 m^2 with a min. length of 3 m;

Independent WC with flush toilet and tie-in with a sewer network septic tank or cesspool;

Inside height - 2.8 m;

All wood components to be made of red fir (pine) or approved aggregates and finished with oil paint. Door and window sizes are also specified. 1/

Economic and standing type units completed by developers include a minimum three bedrooms and most of them are built as apartment blocks. They are also produced as two-level dwellings. All such units are fully finished and connected to municipal utilities networks. Due to their more complete finish and larger size, such units do not fall under the range of the target population.

On the occasion of a budget debate in the National Assembly, the Minister of Equipment announced that the SNIT would no longer handle dwellings in the "standing" class. This type of housing will be supplied by other home builders.

C. Housing Stock-User Analysis

The various 1975 surveys of housing and household budgets suggest that urban housing conditions in Tunisia are comparing favorably with cities of similar size in other developing countries. Nevertheless, such conditions are worse for those households with earnings of less than 183 dinars per month. In Tunis, about one-third of all families live in temporary shelters or dwellings featuring unacceptable conditions, with no public utilities and with 3 to 5 persons in a single room. Some 18,000 of these families are below the 1975 median income level of 92 dinars per month and they would be willing to finance a move into housing with minimal public utilities, against payment of about one thousand dinars in construction costs (land not included). Alternatively, many seemed willing to finance the upgrading of their existing units up to that level. In the final analysis, the housing delivery system is to be blamed for today's deficiencies. The purpose of this section is to explain all the components of the Tunisian housing problem.

1/ Source: Ministère de l'Équipement.

1. Conditions in Tunis

In 1975 , Tunis' 925.000 residents constituted 174,000 households who occupied 147,000 dwellings. Median income level per household was 91 D. monthly, about twice the wages of construction workers (47.84 D.) Income distribution patterns will be found in Table 13's next-to-last column. Unlike the census, we define a household as the occupants of a dwelling. Actually, 1.8 households occupied dwellings with 5 or more rooms, that is 10 percent of all dwellings. Smaller units were occupied by 1.15 households. The vacancy rate was 5.8 percent.

Various cross-tabulations taken from the census in 1975 supply the type of materials used for roofs and walls, the number of rooms, the type of plumbing and the availability of kitchen and electric power of Tunis dwellings (and other areas). For example, we find that 22.00% have no electricity in Tunis,22.7% had no kitchen, 29.2% no running water and that 34.9% of all dwellings were not connected with the sewerage system. Some 12.0% drew water from well or cistern while 17.2% had no direct access to water. Dwellings with only one or two rooms made up 46.7% of the total, and these were occupied by 3-5 persons per room. Larger units numbered two people per room as an average. Only 12% of dwellings were made of materials classified as "impermanent" (dried earth, sticks, rough stones, sheet roofs)but less than half of these could be called "gourbis" or "kibs". At the other end of the spectrum, only 17.3% of the national inventory enjoyed fully equipped bathrooms. About half (53.5%) had some kind of washroom ("salle d'eau") or other piped water.

From these and other data from various sources, we have broken down Tunisian housing into five categories, as shown in Table 14. Tunis District's 147,440 dwellings fell into these categories as shown on the bottom line of Table 13. The "good/luxury" category amounted to only 4.7%, while 12.6% were "moderate cost", 17.2% were basic, 33.5% were "minimal", and 32.0% were in the lower "substandard or temporary" group.

Categories cover all housing units, not just new construction; however, the H 4/5 "good/luxury" class matches the so-called "standing/ grand standing" category; the moderate H3 is close to the économique and the low cost H2 resembles the suburbain level. Rural would be at the low end of H1 minimal housing, with Evolutif at the high end.

Cross-tabulation of Table 13 assigns households from the bottom row to dwellings shown in the next-to-last column. Each item covers households of a specific income level in dwellings of a given category. For example, the lower right item states that 6,930 households with monthly incomes above 367 dinars were occupying 6,930 good-to-luxury dwellings worth over 8,000 dinars (not including land).

TABLE 13

SUMMARY OF THE HOUSING SITUATION IN THE DISTRICT OF TUNIS, 1975

STYLIZED CROSS-TABULATION OF HOUSEHOLDS BY INCOME AND DWELLINGS BY QUALITY

Households (monthly income) \ Dwellings	H_0 Substan Temp.	H_1 Min-imal	H_2 Basic	H_3 Modest	$H_{4/5}$ Good/ Luxury	F	Index
F_0 Below 46 D	28,900					28,900 19.6%	
F_1 46-91 D	18,280	27,870				46,150 31.3%	80
F_2 92-183 D		21,520	22,860			44,380 30.1%	76
F_3 184-367 D			2,500	16,670		19,170 13.0%	93
$F_{4/5}$ 368 D or more				1,910	6,930	8,840 6.0%	89
H	47,180 32.0%	49,390 33.5%	25,360 17.2%	18,580 12.6%	6.930 4.7%	TOTAL 147,440	81

TABLE 14

CHARACTERISTICS OF MAJOR HOUSING TYPES IN TUNISIA, 1975

	H0 Substandard or Temporary	H1 Minimal	H2 Basic Low-Cost	H3 Modest	H4/5 Good/Luxury
1. Construction cost without the site, 1975 dinars	TD500	TD800-1200	TD1,500-2,500	TD3,000-5,000	Over TD8,000
2. Number of rooms	1-2	1-2	3-4	3-5	5 or more
3. Plumbing	Well, cistern or no water. No sewage connec.	Piped water, WC, Sewerage. Some rudimentary	W.C. or bathroom, incomplete	Finished bathroom and all utilities	Finished bathroom, all utilities, some central heat
4. Electricity	About half have electricity	Almost all	All	All	All
5. Materials	About 1/3 sticks, clay, sheet roofs, etc.	Permanent materials	Permanent materials	Permanent materials	Permanent materials
6. Typical floorspace M^2	30	30	45	67	Over 100
7. Construction cost per M^2, estimate	TD17	TD33	TD45	TD60	TD80 or more

The actual distribution was in fact more disparate than that indicated in the table: some households should have been registered in cells higher to the right, or on the lower left side. The distribution is, however, exact in that households with higher incomes do not occupy dwellings of a quality inferior to that of the dwellings which households with less substantial incomes have. Except for a few aberrations, this pattern holds good as a general rule. For example, non-qualified workers, whose monthly income was as high as 30.16 in 1975 and who come within category F0, the most modest, will most probably be the occupants of a dwelling in the lowest category - the H0 level.

Sometimes called a "stock/user matrix", the cross-tabulation in question is established in such a way that, taking into account their income level, the households have all the housing available which they are prepared to pay for when they are in the cells corresponding to the diagonal (from top left to lower right). In this context, the dwelling without land is worth about 75 monthly payments effected by households who devote 19.3% of their income to the construction of the structure. 1/

The indices located in the last column of Table 13 show the extent to which the households in Tunis had the kind of housing for which they were prepared to pay. A position on the diagonal is equivalent to 100; a position corresponding to a place on the left is worth only half of that, that is, 50. The weighted average of the index applicable to Tunis was 81, a level relatively high for a developing country. For instance, the Mexican city of Monterey, highly industrialized, registered the same number of households in 1970 as Tunis in 1975: 147,000. The per capita product was equal to about 583 D. of 1975 purchasing power. Nevertheless, the housing index barely reached the figure of 66. 2/

2. Situation of Urban Housing outside the District of Tunis

In 1975, the housing conditions observed outside the District of Tunis were worse for the poor but at the same time better for the well-to-do. If one compares Tables 13 and 15, it appears that a larger percentage of inhabitants live in type H0 dwellings, temporary and unacceptable, 51.7% as compared to 32%. It is understood that a larger proportion of households were within the category F0 with incomes lower than 46 D: 46.4% as against 19.6% at Tunis. In addition, 35.4% of households having monthly incomes above 92 D. lived in dwellings above the diagonal, in other words, of a better quality than could be expected from the income levels. The total housing index applicable to 308,700 families residing outside Tunis was only slightly more than that of the capital, reaching 84 instead of 81.

3. Rural Housing

In 1975, the rural housing stock comprised 549,000 units.

1/ Cf. Suzy Devoize and Ridha Perchiou, "Presentation and Analysis of the Budget-Consumption Inquiry of 1975". (Study presented in the form of a mimeograph on the District of Tunis), 4 May, 1976.

2/ Jesus Yanez Ortiz "Optimum Allocations for Housing Investment in Five American Cities, 1960-70, 1970-1985". Ph.D. thesis. Michigan State University, East Lansing, Michigan, EUA, 1976.

TABLE 15

SUMMARY OF THE U[illegible] HOUSING SITUATION OUTSIDE OF THE D[illegible]RICT OF TUNIS, 1975

Stylized Cross-Tabulation of Households by Income and Dwelling Quality, Thousands of Units

Households Monthly Income \ Dwellings	H_0	H_1	H_2	H_3	$H_{4/5}$	F	Index
F_0 Below 46 D	143.3					143.3 46.4%	-
F_1 46-91 D	16.1	61.9	35.9			113.9 36.4	62
F_2 92-183			27.2	14.2		41.4 13.4	134
F_3 183-367				1.9	4.0	5.9 1.9	158
$F_{4/5}$ 368 D and more					4.1	4.1 1.3	100
H	159.5 51.7%	61.9 20.0%	63.1 20.5%	16.1 5.2%	8.1 2.6%	308.7	34

According to the census, only 6 percent had electricity, 3 percent had piped water, 15.6 percent had a well or cistern, and 13.1 percent had a toilet. Only 13.4 percent had more than two rooms. 1/ One may conclude that roughly 85 percent were in the HO(substandard or temporary)category.

D. Public utilities and Services

The provision of infrastructure to new urban residential settlements is coordinated and carried out for nearly all Tunisian towns by means of municipal master plans prepared by the Direction d'Aménagement du Territoire in M.O.E.

This planning process requires input from a broad range of institutions concerned with urban development activities, and involves not only the towns themselves but also government agencies, including, among the most important, the STEG for gas and electricity, the SONEDE for water and the ONAS for sewers.

1. Streets

Roads are the responsibility of each municipality unless they are part of a national network for which the M.O.E. is responsible.

2. Gas

Gas is only delivered to residential units in the Tunis metropolitan area, and is not available in low-cost housing neighborhoods. Though expansion of the national network is projected in conjunction with expanded development of productive off-shore gas wells, this utility is not a high-priority item in the nation's residential area planning for the near future.

3. Electricity

By the 1975 census, 69% of all urban area dwelling units had electricity, and STEG programs for the 5eme Plan period were directed toward improvement of conditions in rural areas, where only 10% of all units were supplied. Housing sector plans do not point to any real problem in tying rehabilitation programs or new projects into STEG plans. Street lighting is paid for from municipal budgets, but the STEG will cover 100% of this cost in urban rehabilitation projects. The STEG budget covers 50% of the low tension lines required to service a new community. Homeowners pay the full cost of the hookup, except in rural areas where the STEG covers about 60% of this cost. Local requirements are coordinated by district offices located in the principal city of each gouvernorat.

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1. Institut National de la Statistique, Logements: Tableaux et Analyses des Résultats du Sondage au 1/10ème, 1975, Volume I, no date. p. 54.

4. Sewer and water

For the nation's urban low-income residential areas, the most critical urility problem by far is the collection and treatment of waste water. The SONEDE and the ONAS are responsible for provision of these services at all levels and each of the two indicates that it will develop a new program in an area only on condition that the other agency plans to do the same. This interconnection will become even more important as the SONEDE further exploits Tunisia's best water resource, the Medjerdah River and its tributaries.

A study prepared by the ONAS as a prelude to its increasing involvement nation-wide. mentioned that the nation's available and useable underground water supplies are in fact over-exploited. 1/ Sousse and the Sahel region in the middle of the country draw heavily on the water table in the area of the Oued Merguelil, just as Sfax draws on the resources around Sbeitla. Reserves are reported in the north around Tabarka and also in the south, south of the salt lakes. These latter, however, have a very high salt content.

By the end of the 9eme Plan the SONEDE projects supplying 64% of the national population either by fountain or direct house connection. Under this program, 81.3% of the urban population would be served. A variety of foreign resources, including the World Bank and German and Saudi assistance funds, are being used to help in the financing of related projects.

In its effort to serve the greater part of the rural population the SONEDE is building public fountains. Within the city limits, however, residents are pressing for individual unit hookup as a minimum level of service. The ratio between the cost of hookup and the final unit price is such that it may be worth considering a middle road in which hookups are acquired by the property owner over time as income permits. The SONEDE has a loan program designed to assist homeowners to spread hookup costs over a five year period.

5. Sewer Systems

Though many of the nation's cities have waste water collection networks, their capacity, full extension and condition are unknown. It should be noted that ONAS is undertaking a vast sewer construction program and expects to be able to service areas now already served by water systems by the late

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1/ Etude Générale d'Assainissement en Tunisie. Ingénieurs Conseils Néerlandais for the ONAS. Tunis, March 1978, Vol. I, Technical Study.

1980's. Each year the agency acquires responsibility for additional areas of the country, but the absence of any real system in most of the nation's urban areas makes the ONAS task enormous. Those municipalities not covered by ONAS will continue to be responsible for operating their own systems. Table 16 gives the findings of the first comprehensive ONAS effort to understand the scope of the challenge for a selected group of some of the nation's urban areas.

Where a tie-in to a collector network cannot be made in new projects, the building institutions rely on cesspools. This approach is especially prevalent when the housing project is at a distance from the urban center, and where final unit costs must be kept low. Cesspools are often tolerated as an interim solution in projects built by the SNIT. The assumption is that a collector will be brought into the area before five years are out.

The provision of collector networks in areas already built up by spontaneous settlement offers one of the most difficult challenges to the rehabilitation process. Officials of the Municipality of Tunis are having to be particularly careful about household relocation problems resulting from sewer construction in Melassine and Jebel Lahmar. In Beja, officials are treading very carefully before implementing a rehabilitation plan for the Daouar Zitouna area because bringing in a collector network will require cutting through existing homes and property.

The minimal dwelling unit standards recommended by M.O.E. call for a flush toilet in each unit and reflect a basic belief that adequate low-cost housing in Tunisia must be so equipped. L'ONAS will have considerable difficulty handling the impact on the nation's urban sewer system of the addition of 25,000 units per year.

6. Community Facilities Planning

The ZHS by their very nature acquire community facilities well after the need has been clearly established. The earlier description of the target population noted that in Melassine there were 1.75 classrooms per 1000 students compared to a level of 2.6 for the District as a whole and 2.4 for the nation. Projects developed by SNIT and AFH for more expensive housing must include adequate land and detailed plans for community facilities.

One of the principal areas of concern for community development planners is medical services. The regional imbalance of these services is particularly acute. The national figure of 2.4 beds per thousand people in fact varies from 5.56 in Tunis to 0.28 in the Sahel gouvernorat of Sidi Bouzid. The gouvernorat of Kasserine has 0.74 beds per thousand. More specifically of concern to urban area officials is the resurgence in 1975 of viral hepatitis in the south. It is clear that upgrading of waste water and sanitation programs is urgently needed.

TABLE 16

SELECTED RESULTS FROM STUDY OF SANITARY SYSTEMS

City	Year ONAS Takes Charge	Included in a SONEDE Program	Approved General Plan Exists	Poor Sewage Outfall Area	Treatment Plant
SFAX	Actuelle	Oui (77)	Oui	Oui	Non
Sousse	Actuelle	Non	Oui	Oui	Const.
Bizerte	80	Oui (77/81)	Oui	non	Non
Kairouan	78	Oui (78)	En partie	Oui	Terminé
GAFSA	80	Non	Oui	Oui	Non
MENZEL BOURGUIBA	80	Oui (78)	En partie	Oui	Hors de service
GABES	Actuelle	Oui (79)	Oui	Oui	Non
BEJA	81	Oui (78)	Oui	Oui	Non
M'SAKEN	82	Non	Oui	Non	Non
Monastir	Actuelle	Oui (78)	Oui	Eau épurée	Oui
NABEUL	78	Non	En partie	Oui	Const.
LE KEF	81	Oui (77/80)	En partie	Oui	Non
MAHDIA	Actuelle	Non	Oui	Oui	Non
KASSERINE	Inconnue	Oui (78)	Oui	Rejet Cellulose	Non

SOURCE : Etude générale d'assainissement ONAS 1978

+ Const : En cours de construction.

The Destour party cells which operate at the neighborhood level provide an important conduit to official agencies for information about community needs and problems. The cells are in a position to argue the case of a neighborhood which requires extension of such water and health or other socio-cultural facilities.

The mid-1970s witnessed a major national government effort to coordinate the operations of its agencies in urban centers. The development of general plans for each commune, with each plan expected to be able to direct about 10 years of development, has brought about an impressive degree of joint planning so that community facilities become an integral part of new residential development or rehabilitation schemes.

By year end 1978 master plans will have been prepared for 153 of the nation's 155 communes. The process begins with an analysis by consultants under contract to M.O.E. of the physical and socio-economic aspects of the local situation. Meetings are held with local officials and residents throughout this stage so that a consensus may be reached for the preparation of a draft plan. This draft is submitted for public review and during one month written comments are sollicited. A municipal council meeting then approves preparation of a detailed plan. Final review is conducted at the ministerial level. The final plan is approved by the Prime Minister.

A subsequent step, called a "Plan de Détail", then moves the General Plan to the implementation stage. The Plan de Détail may provide subdivision plans for buildable areas, density regulations and standards which will help municipal governments coordinate implementation with the facilities programs of the national ministries and operating agencies.

E. Environmental and Health Conditions

Previous paragraphs have indicated that with the creation of the ONAS the Tunisian Government has made a major effort to understand and deal with one of the major impacts of the housing sector on the national environment. The results of the analysis carried out by the ONAS will also affect decisions bearing on water supply and will facilitate coordination with the Ministry of Public Health programs to combat infectious disease.

The municipal general plan effort coordinated by the Direction d'Aménagement du Territoire in the M.I.E. has also led to a more comprehensive assessment of the impact on the physical environment of urban development activities. The nature of Tunisian geography is such that many of the country's urban centers are located in areas which are ecologically fragile. On the coast, the nation's economy depends heavily on the tourism attracted by fine, unpolluted beaches. In the central Sahel (Kairouan and south to Gafsa) low moisture levels mean that marginal changes turn cropland into desert and improper use quickly breeds erosion. In the northwest croplands, which are essential to a good agricultural economy, must be

protected from urban encroachment. This urban development itself in such cases as Le Kef and Béja has traditionally occured on the more sloping terrain at the sides of valleys where encroachment on agricultural land is avoided, but where uncontrolled development creates problems of erosion. Modern development tends to locate on the flatlands where infrastructure placement is less costly but where the trade-off is loss of productive agricultural land.

The impact of shelter sector activities on the socio-cultural environment appears to become greatest in the large cities where unit densities increase significantly and family patterns break down. Though in the secondary cities unit densities may be relatively high in the low-income areas, they do not represent a substantial change from the per room densities of rural housing. The family remains together in these cities, a factor which permits a simpler arrangement of income and expenses. In the ZHS of Tunis, on the other hand, comparable room densities will have a different effect as a number of different families from different regions may be sharing the same courtyard. Limitations are thereby placed on the use of space and financial interchange becomes more difficult.

This aspect of Tunisian urban development requires closer analysis because family institutions play a critical role in the informal shelter delivery system and its related socio-economic effects.

V. SHELTER DELIVERY SYSTEM

Most housing in Tunisia is provided by state-run companies. The shelter delivery system in Tunisia is dominated by the intervention of national government agencies. Of an estimated total of 72,500 units built during the period of the IVeme Plan (1973-76) sixty percent were built under the aegis of SNIT programs. In fact, an ever greater percentage was constructed with some form of financial participation by a government institution.

There is no data on which to base an accurate estimate of the number of units constructed without locally-granted building permits. Performance evaluations of the IVeme Plan assume that the number of units put up without building permits was roughly equal to the number of units for which building permits had been taken out but which were not actually built.

The Veme Plan calls for continuation of the policy of forceful government intervention and reflects even a slight increase in the government role: 68% of total housing will be state-aided. In this period the SNIT will continue to play the same important role. It will be involved in about 60% of all units produced and will be limited to low and moderate-cost housing. These categories are: (1) rural housing with an average price of 1,300 D., (2) suburban housing (average price: 3,600 D.) and (3) moderate-cost ("économique") housing (average price: 6,800 D.). (These prices, established for the V^{eme} Plan do not include

The following tables show not only the importance of the government role but also the continued emphasis on the lower cost units (labelled "logements sociaux"). (Tables 17 and 18).

Both the IVeme and Veme Plans have included major efforts by the government to establish the institutional base for an effective housing delivery system. Thus, constraints which had become obvious in the IVeme Plan period were countered through adjustments to the institutional make-up of the sector. Among the most important changes was the development of a new housing finance institution, the Caisse Nationale d'Epargne Logement (CNEL). It should be noted that CNEL did not replace the Société Tunisienne de Banque but was established as part of a new housing finance policy. The housing finance program it manages is completely new to the country and differs from the SNIT's direct purchase or rental arrangements. The STB itself continues to grant loans for "standing" category housing as stipulated in the Central Bank of Tunisia memorandum of March 4, 1976. In addition, reinforcement of the role of the Agence Foncière d'Habitation, creation of a sewer agency, the ONAS, reform of municipal government budgets and insistence on the importance of master planning for municipal areas all contributed to improvement of the institutional base for housing construction.

Finally, in order to prime the construction sector for the expanded programs, real estate development companies were encouraged (for example, tax-free status) resulting in a more active role for the private sector. Most recently, the Caisse Nationale de Sécurité Sociale (CNSS) established a low-cost housing development company (SPROLS) for the construction of rental housing for social security recipients affiliated with the CNSS or the CAVIS.

It is difficult to be accurate with respect to construction activity in the informal sector. Analysis in the District of Tunis suggests that 20% of the housing stock may have been produced informally. 1/ Also, continued expansion and remodeling are taking place in areas formed by spontaneous development in the past. The increasing institutional interest in the impact of the housing sector on the urban environment has undoubtedly led to greater control over the proliferation of unplanned or unserviced neighborhoods. The activity of the nation's housing production institutions has also unquestionably had a limiting effect on the informal sector. Nearly all corners of the nation have benefitted from housing programs, and evidence of such may suggest to some of those households ready to invade that a standard, legal, unit may soon become available and, therefore, be worth waiting for.

A. Land

In the informal context land acquisition is achieved either by the purchase of lots that have been subdivided without authorization by their

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1/ Les Systèmes d'Habitat dans le District de Tunis. Marched Chabbi for the District of Tunis, Tunis. April 5, 1976.

TABLE 17

HOUSING PRODUCTION - IV^{eme} PLAN[1)]
(1973-1976)

Type	Planned	Completed	Average Price (T.D.)*	% of Total Units Completed
Gov't. assisted				
Rural	20,000	13,208	700	18%
Suburban	10,000	10,123	900	14%
Economic	12,500	17,914	2,200	25%
Standing	2,000	1,962	6,000	3%
TOTAL	44,500	43,207		60%
Unassisted	26,500	29,274		40%
TOTAL	71,000	72,481		100%

1)
SOURCE: Plan Quinquennal (1977-1981): 1-Retrospective 1973-1976. Commission Nationale Sectorielle d'l Habitat, de l' Urbanisme et de la Construction. Ministere d' Equipement, Tunis, February 1976.

* Estimated for 1976.

TABLE 18

HOUSING PRODUCTION - Veme PLAN[1)]
(1977-1981)

Type	Planned	Average Price (T.D.)	% of Total
Govt. Assisted			
Rural	40,000	1,300	32%
Suburban	20,000	3,600	16
Economic	25,400	6,800	20
TOTAL	85,400		68
Unassisted			
Economic	34,600	6,800	28
Standing	5,000	19,000	4
TOTAL	39,600		32
GRAND TOTAL	125,000		100

1) SOURCE: Plan Quinquennal 1977-1981: II-Perspective 1977-1981. Commission Nationale Sectorielle de l'Habitat, de l'Urbanisme et de la Construction. Ministere d'Equipement, Tunis, April 1976.

owners, or by the illegal occupancy of both private and public lands. In the first instance, the transaction is often verbal and where some documentation of the sale exists it is in the form of a simple contract between buyer and seller. The illegal occupancy of privately-held land stems from the leasing and subleasing of property in agricultural areas for the purpose of housing.

While in rural areas this practice is common and poses few problems, in the urban context it has given rise to disputes over ownership as tenants of formerly peripheral agricultural land have subdivided, sublet and even sold lots. In both instances ownership of the land is difficult to trace or prove.

Estimates of land costs in the ZHS in Tunis currently range from TD5($12) to as much as TD20($48) per m^2 and 3 to 5 TD per m^2 in such cities as Béja and Le Kef. Average lot sizes in the ZHS of Tunis are 90 m^2, but larger lots can be found, particularly where the residents' means of livelihood remains essentially rural and space is required to keep animals. As the owner becomes more integrated in the urban structure, parts of the larger lots are subdivided and sold. In fact, because lot sizes tend to become smaller over time in the ZHS, the per m^2 cost tends to rise. In Béja, city officials estimate that they will have to pay TD5-6 per m^2 for land in a ZHS to be rehabilitated whereas adjacent land, now being developed as a "standing" category neighborhood, costs TD3.6 per m^2 fully serviced.

Tunisian law does not appear to prohibit the destruction of a roofed structure being used as a dwelling, but, for humanitarian reasons, the government prefers to avoid demolishing dwellings. Such policies have been taken advantage of, in some cases, and resulted in a proliferation of informal housing.

The problem of land costs within town limits is one of the principal concerns of the nation's formal sector housing institutions. The land costs for a suburban type house may reach as high as 20% of the total if special measures are not taken to get a lower per m^2 rate. When land becomes that important a component, the options available for holding the costs of a unit with complete infrastructure and at least two rooms to below TD3,000 are greatly limited. Land reserves appropriate for low-cost urban area residential projects are virtually non-existent and the SNIT must resort to the complex expropriation process to acquire sites.

Land costs drop sharply outside the towns (to the 350 millimes - TD1 per m^2 range), and the government often uses state-owned land to reduce costs to levels appropriate for rural housing programs. Though nominally the the residential land banking agency for the government is authorized to deed over title to all socio-economic classes, in reality, up to the present, the AFH has not become involved in the acquisition of sites for very low-income housing. The AFH concentrates on land development projects in which the full

cost of land and infrastructure may be recovered. The AFH subdivides and services land appropriate for "economic" (moderate-cost) and "standing" type units (these may be in apartment complexes). It follows the guidelines for residential development set forth in the general plan for a municipality. The AFH has concentrated over 80% of its activities in the Tunis area in recent years, and is currently acquiring agricultural land on the city's northern periphery. The AFH pays between 3 and 5 TD per m^2 for land on the periphery of Tunis which, after servicing, is worth 7 to 10 TD per m^2. The AFH is the principal supplier of developable sites for private sector real estate developers. As might be expected, AFH actions have an inflationary effect on prices asked for neighboring parcels. The Agency, nevertheless, does serve to counter speculation through its capacity to expropriate and by virtue of its ability to offer large quantities of land to developers at the best market rates.

B. Construction Technology and Infrastructure

The 1975 census identified ten different types of dwelling units and reported that 93% of the units were either the traditional arab house, a "gourbi", a freestanding "villa" or modern home, or an apartment, in descending order of importance.

1. Informal Sector

The basic physical characteristics of the traditional arab house include its orientation around a courtyard, high walls facing the street with few or high and screened windows, the use of vaulted roof construction and wall finishes of whitewashed plaster. Two storeys are found most often in urban areas.

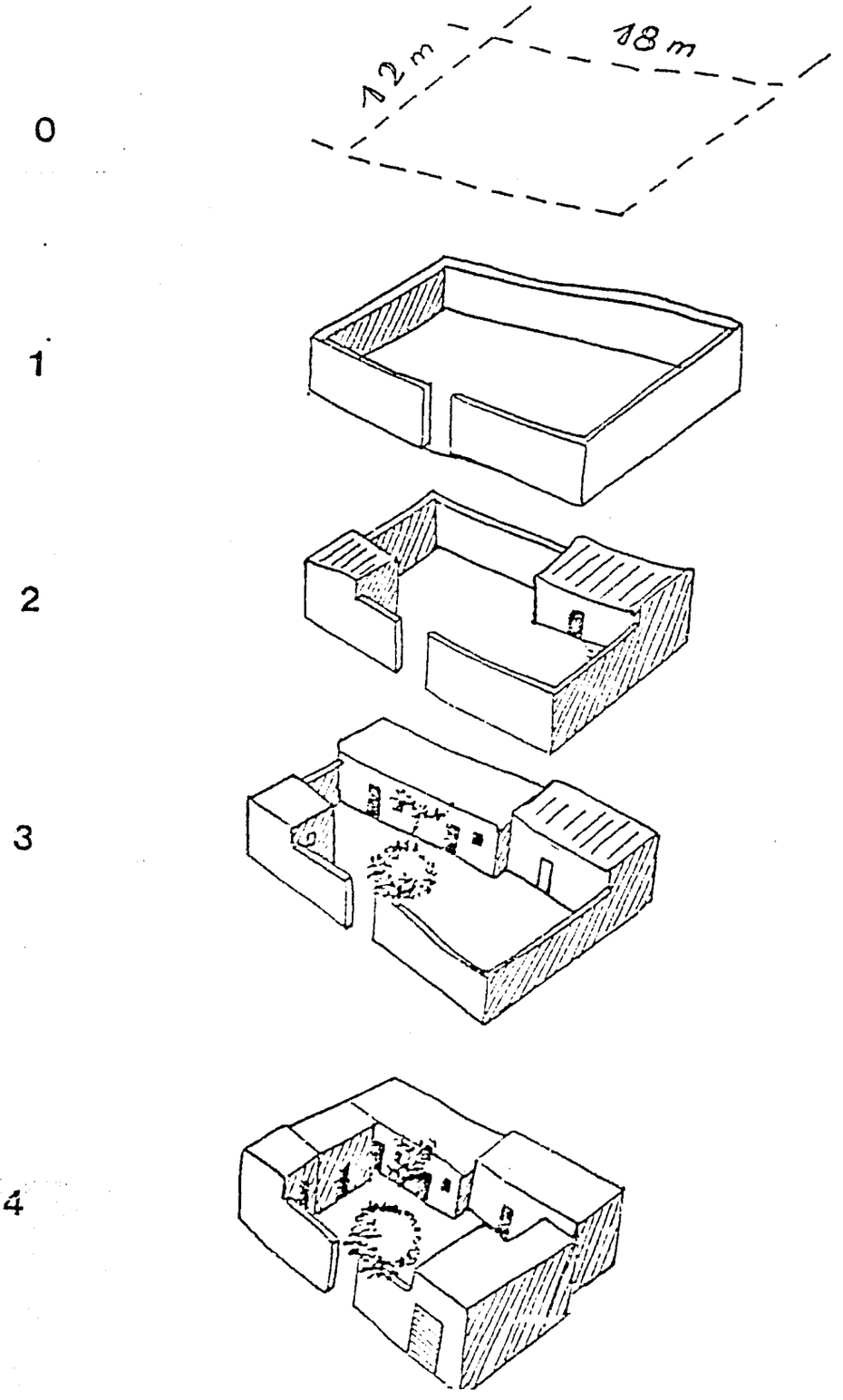
The gourbi is essentially a scaled-down version of the traditional house, maintaining the basic design of rooms opening onto a courtyard and maintaining the concept of seclusion from the street. The materials used and the built-up surface, however, vary according to the owner's means. Gourbis also lack hook-ups to public utilities.

Only rarely do gourbis give the impression of constituting poor shelter as might be the case with cardboard shacks, cane houses or poorly thatched huts. Often gourbis are traditional arab homes, highly evolved, very desirable and fully equipped though without any luxury finishing. The mutation from a one-room, shed-like gourbi to a multi-room modest arab home characterizes the spontaneous neighborhoods (ZHS) of all Tunisia's urban centers.

The basic plan of the completed house consists of 3-4 rooms built around a courtyard with a wall surrounding the lot (See Figure 12). Construction and completion of the dwelling unit is accomplished in stages over a period of time. This evolutionary process is determined largely by the income levels of the residents and is also a function of the uncertainty of land tenure. As mentioned earlier, the initial concern is to establish some form of provisional shelter as cheaply and quickly as possible. Thus, the first stage consists of

FIG. 12

Phases de construction



SOURCE: "Etude de préjustification pour l'aménagement des implantations non contrôlées de Tunis, Tunisie". PADCO, Inc. pour l'Office du Logement, faisant partie de l'Agence pour le développement international, Washington, D.C. juin 1976, p.17.

building one room, then a fence around the lot. A W.C. is added next. The materials used depend upon what the families can afford and also, to some degree, on whether they have bought the lot or are occupying it illegally. In the latter instance, the family is more likely to build the wall and room of non-permanent or salvaged materials (branches, boughs) or, most traditionally, stone with clay mortar. The fact that construction has not been authorized forces a family to build quickly and to make do with whatever can be provided with the least fanfare, though, in many instances, the residents are capable of building a better quality structure.

During the second phase the residents start consolidating the structure by building a room using either concrete block or stone. Auto-construction is less common at this stage and the residents' participation is more likely to limit itself to purchasing the necessary materials and assisting a mason with the construction process.

The evolutionary nature of the construction process makes it extremely difficult to cost out such a dwelling unit. In many cases the stone used to build the initial structures is collected locally by the tenant family. Low quality cement block can be acquired, usually with little or no transport involved, for 110 millimes per block. Local masons charge either by the m^2 of wall built or by the day (between 2 and 5 TD per day). As an illustration, a rural housing unit built on the outskirts of Tunis costs 1,800 TD ($4,400).

In the denser urban areas, particularly in Tunis, the unit continues to evolve until it adequately serves the owner's need for income. In the accompanying sketches of parcels in Mélassine (Turn back to Figures 8-10) one can see density increasing as rooms are added and then rented. Parcel 25 (Figure 8) has been divided into three separately-owned units. All rooms, with the exception of some in the largest parcel, that of the original owner, house one family each. It will be recalled that 19% of all urban area dwellings have only one room as do 57% of all rural units.

Although construction may proceed carefully once the danger of demolition is past, in many cases use of clay mortar ("tuffe") and low-quality blocks, or the absence of well-poured collar beams, result in a structure which may present a continual maintenance problem or even a danger in areas of mild earthquake activity. Adequate roofing (perhaps the most complex step in the process) is found throughout, and often there are examples of expensive "over-design" involving extensive quantities of reinforcing steel in one-story units.

An updating of the infrastructure costs estimated for an upgrading program in the ZHS of Mélassine in Tunis are shown in the table

below. Studies are currently underway to actualize these estimates, but they do serve to give an idea of the costs that might be applied to comparable efforts in other cities.

TABLE 19
ESTIMATED PER UNIT COST OF INFRASTRUCTURE UPGRADING

Water supply	54.5 D/unit
Electricity	95.3 D/unit
Street lighting	25.5 D/unit
Sanitary sewers	50.0 D/unit
Streets	73.5 D/unit
TOTAL	298.8 D/unit

2. Formal Sector Program

The units placed on the market by government, usually SNIT, programs attempt to use more sophisticated technology than that employed in the ZHS. They also are designed to fit into the surrounding urban areas, with consideration given to the need for vehicular access, connection with public utilities networks, and appropriate community facilities.

In fact, a wide variety of materials is used. Walls are built of the traditional stone or brick or cement block. Often one unit will employ a combination of materials. Large quantities of reinforcing steel are often used and walls may be very thick when built of stones. Though privacy is maintained through the use of enclosing walls, in fact, the variations under construction today reflect acceptance of less isolation from the activity of the street.

The SNIT is producing designs which evolve from one-room core ("évolutif") houses costing in the neighborhood of 2,200 D. with infrastructure through two- and three-bedroom units, some of which also allow for future extension, on to more complex, higher priced units. These units are labelled as follows:

Rural

A two bedroom unit with kitchen and W.C. which are provided with utilities installations such as water taps, and electrical fixtures when hook-up to community facilities is possible and the related costs are commensurate with the cost of the unit.

Rural Amélioré

A more finished version of the above which is connected to public facilities, including, in some cases, hook-up to a waste water collection network.

Evolutif

An urban area model designed to provide a core of one room and requiring a low initial payment and low monthly payments, which permits rural prices to be reached in urban areas and which permits expansion by up to three bedrooms. These units are fully serviced, and very often connected to sewers. (See Figure 13).

Suburbain

A two- or three-bedroom urban area unit, with allowance for expansion of the two-room unit. This unit is fully serviced and, in some areas such as Sousse, may be an enlarged version of the "évolutif" unit. The "suburbain" design may moreover be built in apartment blocks of four units.

Economique

An urban area unit of three or four rooms (2 bedrooms plus living room; 3 bedrooms plus living room) with full hook-ups to public utilities. These are most often found in apartment buildings having 4 or 5 storeys at the maximum.

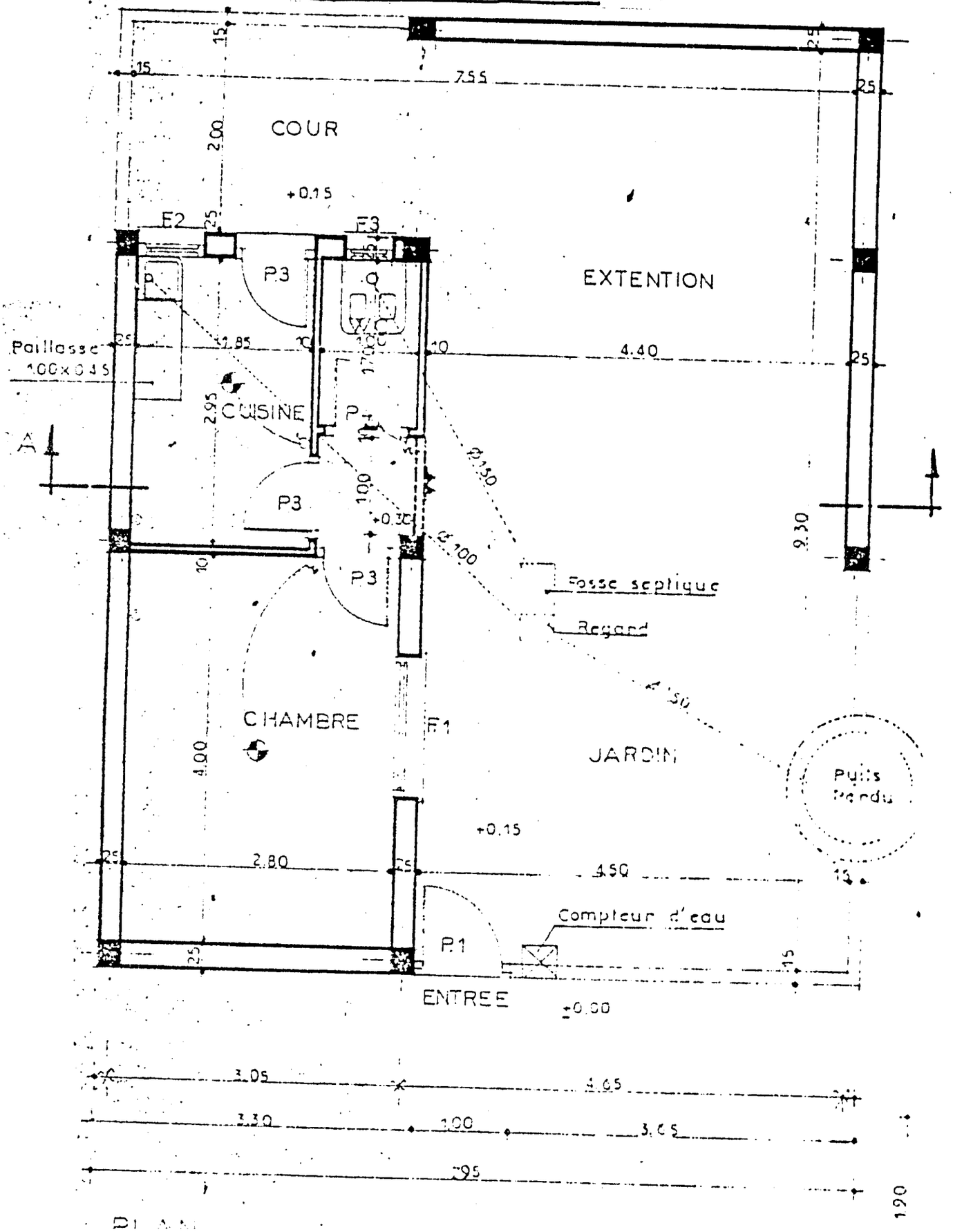
The majority of the units to be produced under the Vème Plan will be two bedroom units with allowance for adding one or two bedrooms more.

Figures 14 and 15 show an advertisement for "suburbain" models going on the market at the present time in the Tunis metropolitan area. Table 20 indicates costs for comparable structures in Sousse and includes an estimated cost if a one-room version were used.

The "évolutif" unit has been the focus of detailed analysis of the construction technique as part of an effort to hold costs to levels

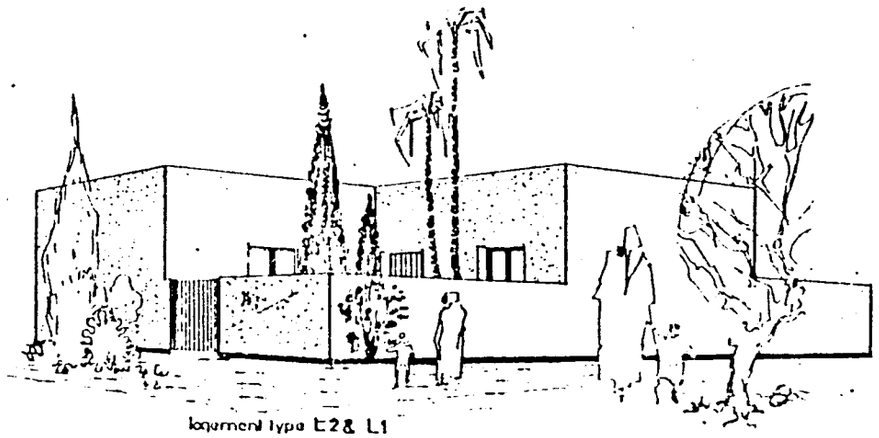
FIG. 13

LOGEMENT EVOLUTIF

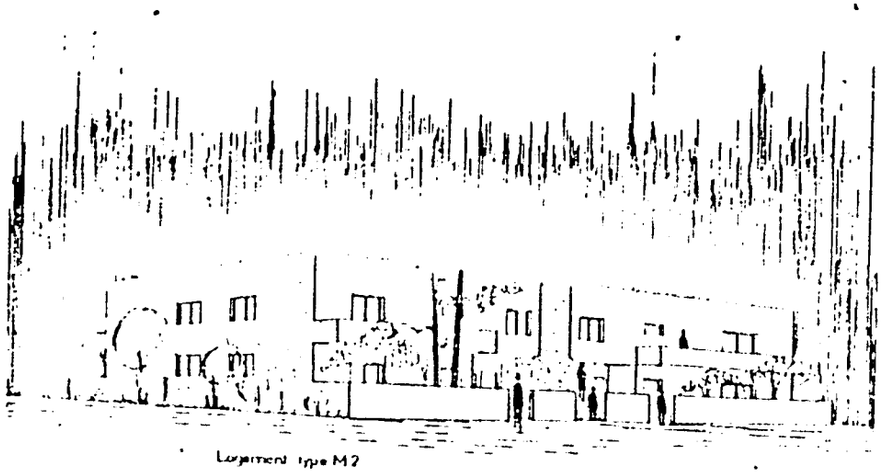


Dans le cadre de sa mission promoteur social la

S.N.I.T. vous propose de devenir propriétaire d'un logement moderne et évolutif situé à 8 Km de Tunis et dans un cadre de verdure à M'Nihla « Cité El Intilaka » et à Den-Den « Cité Antile », nous vous indiquons ci-après les prix et les conditions des différents types de logements.



logement type E2& L1



Logement type M2

Localités	Type	Nbre de pièces	Prix prévisionnel	Nbre	Date probable d'achèvement
M'Nihla	L 1	2	4.100,000	554	Fin 1978
Den-Den	L 1	2	4.100,000	175	
	L 2	2	4.100,000	85	
	M 2	2 + S	5.000,000	128	

Conditions d'acquisition :

— être titulaire d'un livret d'épargne établi avant le 1-1-1975.

— le livret doit être de la catégorie « C.D.E.F. » ceux qui détiennent les livrets d'une catégorie inférieure ont la possibilité de passer à la catégorie demandée dans la mesure où leurs revenus le permettent.

— Fournir une attestation de la CNEL certifiant que l'épargnant est éligible à un prêt.

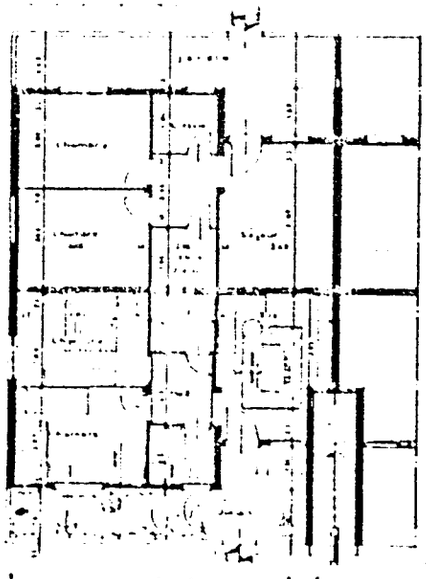
— Signer un engagement pour le blocage des fonds déposés à la CNEL au profit de la SNIT.

— Fournir une attestation de non propriété.

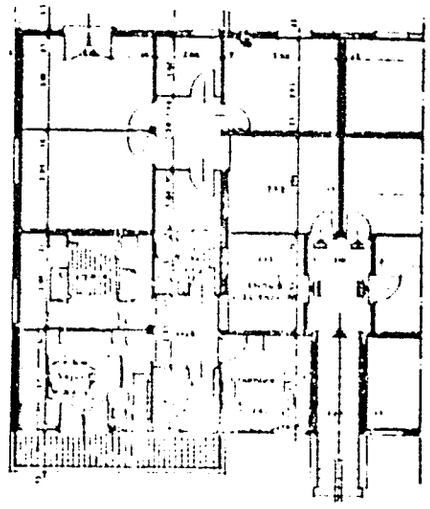
SNIT ADVERTISEMENT M'NIHLA

SNIT ADVERTISEMENT - M'NIHLA

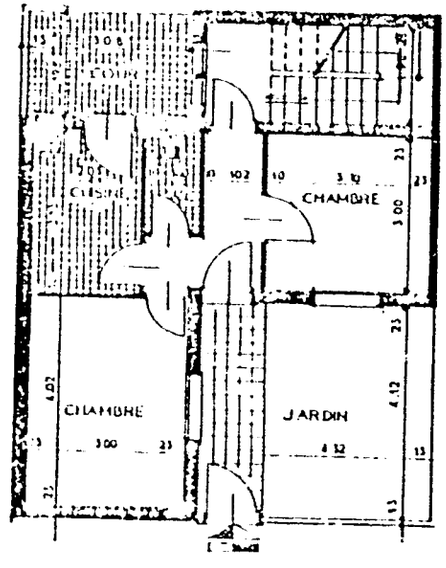
Fig. 15



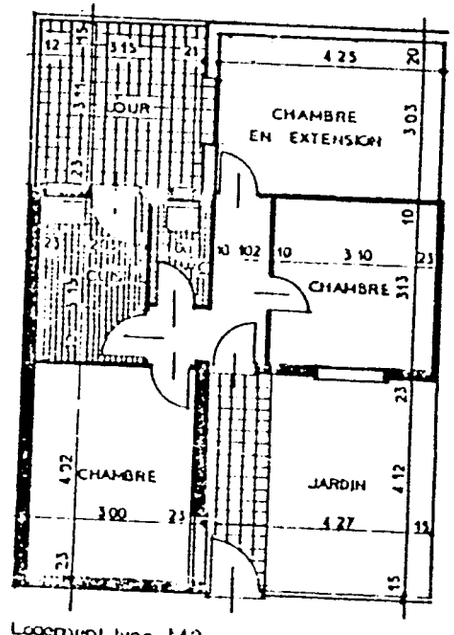
Logement type L1



Logement type L2



Logement type M2
Plan ETAGE



Logement type M2
Plan R.D.C.

TABLE 20

COST DATA - SNIT CORE UNITS - SOUSSE

(An updated housing cost for a Type "Rurale Ameliore" house with 2 bedrooms was received from the Ministry of Equipment. A comparison with the standard 3 bedroom Rural Ameliore house follows.)

	1 Bedroom	2 Bedroom	3 Bedroom
Lot size	126.60 m^2	126.60 m^2	126.60 m^2
Covered area	18.00 m^2	27.00 m^2	42.00 m^2
Extension	24.00 m^2	15.00 m^2	---
Bedrooms (orig. plus extension)	1+2	2+1	3+0
Bedroom size #1	9.00 m^2	9.00 m^2	9.00 m^2
#2	9.00 m^2	9.00 m^2	9.00 m^2
#3	15.00 m^2	15.00 m^2	15.00 m^2
Selling price (TD)	1,800 (Est)	2,500	3,500
Cost per m^2 (TD)	100.00	92.59	83.33
Cost per ft^2 (US)	22.95	21.25	19.13

BREAKDOWN OF COSTS - 3 BEDROOM UNIT

Construction Cost	D. 2,360.000	67.43%
Infrastructure	540.000	15.43%
Land	180.000	5.14%
Mark-up	420.000	12.00%
SELLING PRICE	D. 3,500.00	100.00%

which make it accessible to a large percentage of low income people. 1/ The basic changes deemed possible focus primarily on the dimensions of the frame and reduction of finishes to a minimum. The resultant specifications appear in Table 21.

SNIT officials feel that the one-room core unit may not sell well despite its low price tag. They note that while many Tunisian families live in one-room units, (19% of urban units and 57% of the rural are one-room units) they will want to improve their condition by picking up another room when they finally amass the funds necessary to purchase a new home. The present core unit program is not sufficiently advanced to offer any data regarding market acceptance. SNIT officials also anticipate that when the one-room units come on line, prospective owners will be prepared to pay an additional charge and will request that the agency add the additional room especially in cases where the additional cost of an extra room is relatively insignificant (since the foundation and part of the walls have already been built).

There can be no question that a house is so important for the Tunisian family that enormous sacrifices are made in order to accumulate the necessary funds and amortize the debt. More detailed study of the market will be necessary, however, to determine the variations in acceptability of one-room units by region and by income level. It seems possible that acceptability would be greater outside the Tunis metropolitan area where expectations are lower and perhaps experience with self-help construction is more recent. In addition, in Tunis the projects may be attracting buyers with greater means than the groups for whom the project is intended thus making the buying public more selective.

3. Industry Capacity

The results of the IV^{ème} Plan and the experience of the first year of the V^{ème} Plan suggest that capacity in the construction industry is adequate to reach the targets of the Plan, at least as far as low-cost housing programs are concerned. As noted above, the constraint may lie more with project management than with finding bidders for the various projects. SNIT, by far the largest developer in the country, has adopted a policy of parcelling out its work in small to medium sized packages (up to 200 units). In this way, medium-sized and even small entrepreneurs may participate, and the competition among contractors is greater, particularly on big jobs where comparisons of estimates can easily be made. Previously SNIT had also discovered that giving all or most of the work to one contractor

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1/ Tunisie, Cinquième Plan de Développement: Le Secteur Habitat - Examen et Commentaires. IBRD Working Paper, Washington, D.C. (Undated 1977).

SELECTIVE LIST OF WORDS USED IN SPECIFICATIONS (TABLE 21) AND PRICE LIST (FIGURE 16)

Fouille	-	excavation
Béton	-	concrete
Planchers	-	flooring
Mur	-	wall
Cloison	-	partition wall
Hérisson	-	foundation
Enduits	-	plaster
Menuiserie	-	woodwork
Buse	-	vent
Tuyau	-	pipe
Porte	-	door
Peinture	-	paint
Badigeon	-	whitewash
Vitre	-	window glass
Chaux	-	lime
Hourdis	-	tile block
Gravier	-	gravel
Sable	-	sand
Bois	-	wood
Essence	-	gasoline
Acier	-	steel
Plomb	-	lead
Cuivre	-	copper
Fers	-	reinforcing bars
Poutrelles	-	beams
Tôles	-	sheet metal
Main d'oeuvre	-	labor
Ouvrier	-	worker
Camion	-	truck

TABLEAU 21

Devis Estimatif (après modification des spécifications techniques)

Poste	U	Q	Prix Unitaire (D.)	Somme (D.)
1. Fouille en puits jusqu'à 1,50 m de profondeur				
- 6 poteaux @ 0,50 x 0,50 x 1,50 = 2,25	m^3	2,25	2,7	6,075
2. Fouilles en rigoles	m^3	2,2	2,4	5,28
- cloture; 0,25 x 0,15 x 23,10 = 0,87				
- murs maison; 0,30 x 0,25 x 17,90 = 1,34				
3. Gros béton (dosé à 250 kgs/m^3)	m^3	2,5	16,5	41,25
- 6 poteaux @ 0,50 x 0,50 x 1,00 = 1,50				
- cloture 0,46				
- murs-maison; 0,30 x 0,10 x 17,90 = 0,54				
4. Béton de propreté (dosé à 175 kgs/m^3) de 0,05 d'épaisseur sous murs maison 0,30 x 13,65	m^3	4,1	1,5	6,15
5. Béton armé (en fondations et évaluation)	m^3	2,0	70,0	140,0
- chainage inférieur; 0,25 x 0,15 x 17,90 = 0,67				
- semelle cloture; 0,40				
- 6 poteaux @ 0,15 x 0,15 x 2,80 = 0,38				
- chainage supérieur; 0,15 x 0,15 x 24,0 = 0,54				
6. Planchers	m^2			210,0
7. Remplissage de murs (briques à 12 trous sur champ) 2,80 de hauteur sur 15,35 ml	m^2	43	4,1	176,3
8. Mur de cloture (en agglo. 10/20/40) sur 26,3 ml environ; sur 1m. de hauteur sauf en façade (2m sur 3,2 ml.), à répercuter sur 2 parcelles sauf pour façade	m^2	18	4,0	72,0
9. Cloison				56,0
10. Hérisson de 0,11 - 0,12 (en blocage)	m^2	21	1,05	22,1
11. Forme de hérisson de 0,05 d'épaisseur	m^2	21	1,85	38,9
12. Chape en ciment bouchardé				37,8
13. Enduits (sur plafonds et murs); plafonds, partout sauf toilettes, 19m^2; murs, intérieur seulement (toilettes non comprises) et façade complète 2,8 x 30,4 = 85m^2	m^2	104	1,4	145,6
14. Cadres de menuiserie				17,6
15. Regard intérieur				17,0
16. Regard de visite extérieur				26,0
			Sous-total:	1.018,055

TABLEAU 21
(suite)

Poste	U	Q	Prix Unitaire (D.)	Somme (D.)
Sous-total (report)				1.018,055
17. Buse en ciment (Ø 150), pour évacuation eaux usées				26,4
18. Gargouille (poterie de Nabeul)				1,5
19. Appuis de fenêtre en ciment				-
20. Evacuation de l'évier				8,0
21. Tuyau galvanisé 15/21	ml	8	2,5	20,0
22. " " 12/17	ml	2,5	2,0	5,0
23. Robinet de puisage de 12				3,5
24. Robinet d'arrêt (en cuivre) de 15				4,0
25. Pose évier en granito,et robinet				28,0
26. Toilettes à la turque				10,0
27. Chasse d'eau				12,0
28. Point lumineux,et interrupteur				22,5
29. Prise courant				12,0
30. Niche pour compteur d'eau	U	1	12,0	12,0
Menuiserie				
31. Porte de jardin 0,90 x 2,00	m^2	1,80	12,0	21,6
32. Porte isoplane	m^2	7	13,6	95,2
33. Croisée de fenêtre				34,5
34. Peinture à l'huile lin, sur ébénisterie seulement				
35. Badigeon à la chaux allunée	m^2	8	0,7	5,6
36. Badigeon sur terrasse	m^2	104	0,13	13,5
37. Vitres				2,1
38. Forme de pente				3,9
				58,8
TOTAL				1.418,155

magnified the impact of each separate delay on the over-all effort to reach Plan targets. A cursory analysis of housing production during the IVeme Plan period leads to the conclusion that the 25,000 unit per year target may be conservative, and that levels above 30,000 may be more appropriate. 1/

Stricter quality control at all work sites is anticipated, thanks to the training, over recent years, of construction technicians. Furthermore, efforts are underway to rationalize use of building materials and reduce the amount of reinforcing steel employed through the introduction of new semi-prefabricated building technology.

C. Building Materials

An eagerness on the part of government agencies to reach the targets set by the IVeme Plan led to a major crisis in the supply of construction materials in 1974 and 1975. The pressure caused severe price increases and some concern that the demand for cement was so far outstripping domestic production that the increased levels of imports would seriously affect the nation's balance of payments.

As a result, a more realistic assessment of the nation's productive capacity has been made and prices have actually shown some weakness recently. Major national investment programs in materials production are underway and supply is now adequate to meet housing program needs. This condition permits some careful assessment of materials costs in the context of the effort to make the low-cost housing program most cost-efficient. See Figures 16(a) and (b) for a listing of official prices for construction materials and labor. The following table provides some comparative figures for different types of wall construction, and indicates regional variations in cost.

TABLE 22

MASONRY WALL CONSTRUCTION COSTS
Regional Averages 1976 for the "économique" Housing Category (In Dinars)

Type of Work	Unit	Region North	Central	South
Stone masonry wall*	m^2	6.511	5.595	5.167
Cavity wall	m2	5.993	5.195	5.426
Cement block masonry (25cm)	m^2	3.446	na	2.352
Brick wall-25cm	m^2	na	na	4.055
20cm	m^2	2.950	4.100	3.577
15cm	m^2	3.686	na	3.396
Partition wall-10cm	m^2	2.768	2.487	2.623
Cement block-30cm	m^2	3.400	na	na
15cm	m^2	2.140	na	na

1/ Ibid., pp. 4-5

* Actual price cut in half as 50cm walls are common.

Fig 16 a

Prix de vente moyen des matériaux de construction Février 1978

DESIGNATION	UNITE	Prix en Dinars Déc.
Matériaux de Construction		
Ciment Artificiel 250/315		
en Vrac	La Tonne	20,542
en Sacs papier	»	24,330
Ciment prise mer en sacs papier	»	24,830
Chaux Hydraulique en sac papier (50kg)		14,930
Chaux artificielle L.M 50/100 ..		
en Sacs papier	La Tonne	14,930
Plâtre gris en sacs Papier	»	11,583»
Plâtre blanc Ultra fin en sacs papier	»	30,200
Briques a 6 trous de		
215 x 105 x 65 mm	Le Mille	18,900
Briques pleines de		
215 x 105 x 65 mm dites de 0,07	»	40,500
Hourdis en céramique		
hauteur 16 cm x 20 x 33		67,500
Tuiles plates (1er choix)	»	73,372
Briques de Djemmal		
Brique a 3 trous	Le Mille	14,412
Brique a 6 trous	»	22,982
Brique a 8 trous	»	75,514
Brique a 12 trous	»	109,987
Hourdis 13 , 33 x 30	»	114,912
Hourdis 16 x 33 x 30	»	123,120
Hourdis 19 x 33 x 30	»	147,744
Carreaux mosaique de 25 x 25 (suivant couleur)		
En ciment super blanc n° 53	Le m2	1,950
En ciment gris	Le m2	1,665
Produits de carrières toutes taxes comprises		
Gravier de 5/17	le m3	2,052
Gravier de 17/25	»	1,782
Sable de concassage de 0 a 3 mm	»	1,147
Tout venant 0/80 (à partir du 15/2/77)	La Tonne	1,198
Tout venant 0/25	»	1,378

DESIGNATION	UNITE	Prix en Dinars Déc.
Plaque ondulée en amiante-Ciment de 1m,52 x 0,92 prix de vente en gros départ usine toutes taxes comprises	La piece	2,470
— Vente détail	»	3,196
Tuyaux en P. V. C. ∅ 32 mm	Le M.L.	0,263
Tuyaux en P. V C ∅ 100 »	»	1,069
Tuyaux en P. V. C. ∅ 200 »	»	4,160
Tuyaux amiante ciment Sicaac série batiment		
∅ 100	Les 4 m	7,336
∅ 200	»	17,328
∅ 300	»	36,679
Articles sanitaires		
Ensemble sanitaire (D)	l'ensemble	24,503
Cuvette M T C Medierda SAB CH	La piece	8,898
Abattant double couvercle	»	2,530
Réservoir de chasse Safo-complet	»	13,075
Tuyaux plomb en usine	les 100 Kgs	43,500
Plomb raffiné en saumons (quotation officielle, taxe comprise, quantité minimum 10 T)	La Tonne	350,460
Huile de lin quantité supérieure a 500 Kgs Le Kg		0,670
Peinture à l'eau " Astralatex "	Les 25 Kgs	6,000
Peinture a l'huile " Astral "	Les 30 Kgs	14,760
Blanc broyé cachet vert	Les 40 Kgs	13,440
Peinture email glyceraphtalgique (Laquée)	Les 20 Kgs	17,920
Mastic d'asphalte en depot Tunis	La Tonne	56,000
Bitume oxyde 75 30, 115 10 en fûts perdus	»	115,000
Cut-back 0 1 en vrac	»	71,417
Cut-back 400 600 en vrac	»	74,939
Verres		
Verre a vitre (demi-double) 162 x 30 x 54	le m2	1,165
Verre à vitre (demi-double) 162 x 56 x 90	»	1,280
Verre a vitre simple 126 x 30 36	»	0,730
Verre a vitre simple 126 x 38 60	»	0,800
Electricité		
Boite plastique dérivation ∅ 100	La pièce	1,145
Interrupteur S. A encastré	»	1,302
Boite en fonte 4 - 9 ∅ 55	»	0,329
Tube acier de 9	»	0,214
Bois		
Prix moyen du Bois sapin blanc	le m3	102,310
Bois rouge du Nord 1er Choix		125,750
Bois rouge du Nord 2e choix	»	107,570
Produits petroliers		
Essence super	Le m3	176,000
Essence normale	»	166,500

* A partir du 1.12.77

Fig. 16 b

DESIGNATION	UNITE	Prix en Dinars Déc.
Pétrole	m3	37,500
Gas-Oil	»	57,500
Produits sidérurgiques		
Tube d'acier étiré sans soudure de 40/49 noir bout fileté	Le M/L.n	1.666
Tube d'acier soudé par rapprochement, qualité chauffage bout lisse de 20 x 27	»	0,487
Tube d'acier soudé par rapprochement galvanisé bout fileté de 20 x 27	»	0,744
Tuyaux de fonte standard (60 mm pression) avec joint automatique	»	5,290
Fil de cuivre nu 30/10 Comprise janvier Février 78 comprise	La Tonne	1196.237
Rond à béton		
Fil Machine A.L.D.X. 6m/m en couronnes	La Tonne	180,590
diametre 8 m/m en couronnes.	»	178,300
Tunisid diametre 6 en Barres de 12 m	»	—
diametre 8 en Barres de 12 m	»	213,390
10 en Barres de 12 m	»	207,650
12 «	»	203,445
14 «	»	201,150
16 «	»	199,235
20 «	»	197,705
22 «	»	197.705
25 «	»	199,235
32 «	»	200,305
Fers Carrés 8 mm de diametre	la Tonne	191,128
10	»	181,343
12	»	175,445
14	»	174,539
16	»	172,626
20	»	—
25	»	—
Poutrelles UPN		
80 m/m 3/12 m	»	194.710
120 m/m 3/12m	»	180,904
Tôles Noires A.D.T.O.		
2m x 1 m x 3m/m	»	179,393
Moyennes et fortes 2m x 1m x 4m/m	»	176,512
2m x 1m x 8m/m	»	186,474
3m x 1.50 x 3m/m	»	184,185
3m x 1,50 x 4m/m	»	183,052
3m x 1,50 x 10m/m	»	173,518
Tôles ondulées galvanisées		
2m x 0,90 x 5/10	La Tonne	272,772
2m,50 x 0,80 x 5/10	»	281,439
3m x 0,90 x 5/10	»	280,939
Tôles planes galvanisées		
2m x 1m x 4,5/10	»	279,135
2m x 1m x 5/10	»	279,200
2m x 1m x 6/10	»	275,744
2m x 1m x 8/10	»	247,896
2m x 1m x 10/10	»	237,618
Fers plats		
20 x 4 Barres 6m	La Tonne	188,927
30 x 6 Barres 6m	»	—
35 x 8 Barres 6m	»	—
40 x 8 Barres 6m	»	—
50 x 10 Barres 6m	»	—
Fers cornières à ailes égales		
30 x 30 x 3 Barres 6m	»	167,725
35 x 35 x 3,5 Barres 6m	»	164,362
40 x 40 x 4 Barres 6m et 12m	»	164,362
45 x 45 x 4,5 Barres 6m et 12m	»	171,795
50 x 50 x 5 Barres 6m et 12m	»	175,209
60 x 60 x 6 Barres 6m et 12m	»	180,170
Main-d'œuvre batiment et T. P.		
Manœuvre ordinaire	Heure	0,203
Manœuvre spécialisé	»	0,213
Aide ouvrier	»	0,233
Ouvrier qualifié 1ere Catégorie	»	0,263
Ouvrier qualifié 2e Catégorie	»	0,273
Ouvrier hautement qualifié	»	0,313
Transport (marchandises diverses)		
Transport par Camion de 5 à 10 tonnes au delà de 150 Kms	t/Km	0,030

This information shows that stone masonry walls are more costly than brick or concrete block masonry. The price differential would be greater if the stone wall were, in fact, thicker than 50 centimeters, often the case.

If a 20cm concrete block wall is assumed to cost TD.3 per m^2 (a 30cm wall costs TD.3.4 and a 15cm wall costs TD.2.14) then a similar wall of brick would cost 21.8% more. Similarly, a 15cm wall of brick would be 57.1% more costly than a similar concrete block wall.

Current government policy favors use of brick. This policy appears to result from the concern for the effect that additional cement imports would have on the nation's balance of payments. In the mid-1970's, investments in brick factories were encouraged and a number have begun production recently or are scheduled to do so soon.

Concrete block production is clearly an attractive field for the small entrepreneur and each construction site of any size has at least one block producer. The quality of the block is low because no care is taken to cure them. Nevertheless, the ease of use of block results in its preference over stone. Load-bearing brick construction is much easier, however, for the contractor as brick is much lighter. SNIT projects require that block be used only in non-load-bearing positions when their manufacture is not checked for compliance with codes.

Substantial sums are being invested in materials supply industries. Some of these investments, such as the cement plant at Gabès, are beginning to bear fruit. At present, cement supplies have returned virtually to normal. Some other materials production programs are reviewed below.

Cement. The cement plant at Bizerte is being enlarged to produce 630,000 additional tons of cement and 130,000 tons of lime per year. The financing for this project is being assisted by the German Government. The addition is planned to be in production in mid-1978.

A new cement plant near the Algerian border at Tajerouine will have a capacity of one million tons/year of cement and 120,000 tons/year of lime. The budget for this project is TD.61.7 million. The construction will be handled by a French firm. The scheduled completion date is the second half of 1980.

A new plant will be built at Enfida at a cost of TD.71.5 million and will produce one million tons of cement per year.

Two new lime plants are being planned to increase lime production by 400,000 tons per year. Though scheduled to be on line by about 1981, financing is still being sought for this project.

Steel. The estimated deficit is expected to reach 100,000 tons in 1981 and increase to 200,000 tons in 1985. Studies are now in progress to meet all needs up to and including 1990 by enlarging the Menzel Bourguiba Steel Plant. The estimated cost of this expansion is TD.200 million. Enlargement of the El Fouladh Steel Plant to a production level of 180,000 tons in 1979 and 223,000 tons by 1980 is also under way.

D. Finance

The table below shows the expected source of financing for the TD.600 million investment set as the target of the V^{eme} Plan.

TABLE 23

SOURCES OF HOUSING FINANCE - V^{eme} Plan

Source	IVeme Plan	Veme Plan	% of Total Veme Plan
	(millions of dinars)		
Down payments	137.0	213.8	36.0
Government payments	42.4	66.6	11.0
F.P.L.S.*	--	49.2	8.0
Social Security Funds	1.0	72.7	12.0
C.N.E.L.	27.0	174.2	29.0
Foreign loans	11.6	8.5	1.5
Bank loans	11.0	15.0	2.5
TOTAL	230.0	600.0	100.0

*F.P.L.S. = Fonds de Promotion de Logement pour les Salariés.

The table shows clearly the importance of the role played by government institutions in making available to the nation public financing for the purchase of housing. Government-related funding accounts for TD.371.2 million or 62% of the total. It should be noted that CNEL does attract and employ savings from private individuals (expected to equal about 20% of its financial needs during the V^{eme} Plan period). The limits of the contract savings approach require the CNEL to generate deficit since it is required to finance 2/3 of the cost of housing units (only up to TD.10,000 of course) for depositors with savings equivalent to 1/3 of the price of the unit. To this end, the bank is authorized to float loans in an amount not to exceed 5% of their deposits. It should be stipulated, however, that the Tunisian government gives a 1% interest subsidy to CNEL housing loan beneficiaries which pulls the interest rate down from 5.5% to 4.5%.

1. Formal Sector Housing Finance Program

The majority of the housing finance systems in operation are closely aligned with the different categories of housing established in the Vème Plan.

Rural housing receives the largest direct government support. When such units are produced in conjunction with the national rural development program (PDR), the approved buyer advances roughly TD.90 of the price (here set at the 1976 average of TD.1,300), the government pays the builder (usually the SNIT) 270 D.,which is the standard per unit subsidy for social interest housing, plus 300 D.which is the special P.D.R. subsidy; the government then grants the buyer a loan of 640 D.,interest-free and repayable in 15 years.

For the suburban level (average price set at 3,600 D.), the per unit subsidy of 270 D. paid to the builder (almost invariably the SNIT) serves to reduce the sales price. Once the buyer has joined a CNEL savings program he is eligible for 2 types of loan:

a. Anticipated loan - granted exclusively for acquisition of housing units from an approved real estate developer after 2 years of saving (4-year savings plan) and 3 years (5-year savings plan).

The interest rate charged is 7% for the savings period remaining.

b. Standard Loan - granted for financing

- acquisition of housing from a real estate developer
- construction of a house
- expansion of existing housing unit

The interest charged is 4.5% after deduction of 1% goverment subsidy on interest and the loan is repayable in 10 years (4-year savings plan) or 15 years (5-year savings plan).

Due to price increases in construction and land, the CNEL discovered that many of its small savers (7 D. or 14 D. per month) could not build up enough savings in four years to warrant a loan which would actually buy one of the dwelling units on the market. A new program has been set up to offer new financial options to the lowest income savers at CNEL. Called the Fonds de Promotion de Logement Pour les Salariés, and drawn from a 2% levy on payrolls, paid by employers, including the government, the F.P.L.S. will make two programs available:

a. a loan of TD.2800 for 15 years at 3% interest
(TD.3,610 house less TD.270 subsidy = TD.3,340
less savings of TD.540 = TD.2,800)

b. for those with higher incomes, a TD.528 addition to their savings, in the form of a loan which carries a 4.5% interest rate and is paid off only following repayment of the CNEL mortgage (therefore repayment begins only after 10 or 15 years).

The FPLS will be available only to wage earners receiving one and a half to three times the minimum wage.

For "economique" (moderate) category housing whose cost does not exceed 5,000 D., the government subsidy of 270 D. is applicable. Finally, an FPLS supplement of 528 D. is also applicable here.

There are two other sources of mortgage financing. The Caisse Nationale de Retraite et de Prévoyance Sociale (CNRPS), which is the pension fund for civil servants and government employees, will grant loans of up to TD.5,000 repayable in 15 years at 3% to 6% interest depending on the borrower's income.

Commercial banks may also make mortgage loans in amounts not to exceed 2% of their deposits. These loans are for "standing" category units, have a ceiling of TD.15,000, require that the buyer assume 40% of the cost of the unit and are repayable in up to 7 years at 8.25% interest.

The CNEL is the principal source of construction financing. As of March 1978, the CNEL had made almost TD. 30 million in construction loans for prefinancing of real estate development projects. Of this, 95% was borrowed by SNIT. These loans carry 7.5% rate at present and are outstanding an average of 18 months.

The CNEL pays 4% on savings and the government adds a bonus of 2% for those savers who complete the required four year savings contract. CNEL officials note that one of the principal reasons for use of a four year contract period is that the depositor becomes used to a steady payment process similar to that which will be applied to the mortgage later on. In addition, the savings relationship gives bank officials the opportunity to make an accurate assessment of the savers' credit worthiness.

Along with Anticipated and Standard Loans, the CNEL gives immediate loans for the completion of individual units and the acquisition of housing from approved real estate developers. The buyer must put up 40% of the purchase price. The loans are at 6% for 10 years and no savings account is required.

The commercial banks offer 3-1/2% interest on savings, but pay bonuses of up to an additional 4% for time deposits. Other financial investments include some government or national agency bonds, and certain stock issues. Shareholders of the Société Tunisienne de Banque, for example, earn a 6% dividend plus, of course, any capital gains which might accrue.

The commercial banks have indicated that though they may offer an additional 1-1/2% on savings, (7 1/2% vs 6%) the CNFL loan terms and housing orientation are a powerful attractant and have tended to draw savings clients away from the private banking sector.

2. Informal Sector Housing Finance

Housing finance in the informal sector in Tunisia appears to be exclusively the domain of the family. Three techniques are used to generate the funds required for down payments on informal sector loans, or for outright purchase of construction.

a. Interfamily borrowing, not only from parents, but also from uncles, aunts and other more remote relatives. This financing carries no interest rate.

b. Sale of a dowry. The dowry represents long-term savings and housing appears to be an important use for this wealth. The actual extent to which sale of the dowry is common could not be accurately assessed by the team. In fact, it may be more characteristic of upwardly mobile middle class families than of the low income group.

c. Foreign remittances. It is clear that one of the principal sources of Tunisian capital development is the family member working in Europe. As with the dowry, foreign remittances are evidence of a strong tendency to save and prepare later reinvestment in Tunisia where the absence of highly developed capital markets gives a decided advantage to those with cash.

With regard to Tunisians working abroad, it should be noted that they have all the facilities in other countries necessary to comply with CNEL savings plans (U.T.B. in France, for example...). In addition, the Tunisian government gives them a 3% instead of 2% savings bonus when they make savings deposits in foreign currency.

3. Institutional Development

As has been mentioned earlier in this report the early 1970's were a time for reform and revitalization of Tunisia's housing sector. The financial components of the sector were fully included in this revitalization process. The CNEL had its first full year of operation in 1975. By 1978 the institution could show that it was filling an important void in the sector. It should be stipulated here that the CNEL was set up to help resolve the housing crisis and that, moreover, the funds raised are used essentially to prefinance real estate development programs.

It should be noted that the 4eme Plan allocated 174.2 million dinars to CNEL, or 32.8 million dinars per year for housing financing whereas, on the average, savings generate about 13 million dinars annually.

At the same time, the CNEL process is not yet mature. As noted earlier, officials discovered by early 1977 that the two lowest savings contracts did not generate enough equity to permit satisfactory entry into the housing market. The housing finance process is under continued appraisal. Loan terms are being reconsidered, the market is being tested and thought is being given to expansion of the capital market.

VI. CONSTRAINTS TO THE STEADY INCREASE IN SHELTER PROGRAMS FOR THE URBAN POOR

The GOT commitment to improvement of conditions in the shelter sector is an important one, and many of the obstacles to increased production and to improvement of urban infrastructure have been cleared away. The preceding chapters help to identify conditions which may constrain GOT efforts to continue to increase the level of improvements. In many cases these conditions have already been identified by the government's own shelter sector experts. They are the focus of concern as the nation advances towards the objectives of the Fifth Development Plan, and should also be considered in the preparation of the succeeding Plan.

It is always possible to explain problems in terms of insufficient financial resources or materials. In fact the poor are most ingenious at finding ways to circumvent, to some degree, these obstacles when shelter is concerned. The authors of this report would prefer to suggest that the constraints of particular and immediate interest are usually institutional in nature and that it is this aspect of the sector which offers the greatest opportunity for change and rapid improvement.

There exist three facets of the shelter sector problem of the urban poor in Tunisia which appear to need attention if constraints to greater progress are not to become severe:

- not enough solutions are being designed for the large percentage of the urban population whose incomes are insufficient to purchase the "logement suburbain" (average prices projected in 1976 of 3,600 D. - $8,600), or the "evolutif" built under the joint GOT-USAID program at 2,200 D. to 2,500 D. ($5,300 to 6,000).

  Roughly 50% of the urban area families nation-wide have incomes estimated to be below 77 D. per month. In order to serve these families in increasing numbers GOT shelter programs in urban areas will need to be designed to lower standards, which may mean less habitable space or minimal levels of public utilities in order to result in lower initial costs. Greater reliance on self-help construction, and gradual community development should be considered.

  expansion of shelter improvement programs in urban areas nationwide will require expanded levels of professional staff at the local (municipal) level, not so much to administer programs but to supervise their implementation, especially if that implementation takes place gradually with community participation.

  Municipal level technical staffs do not appear adequate to supervise the efforts of individual home owners as they expand their housing units. The problems will become more acute if making the connection to infrastructure networks is added to the work required of homeowners.

This constraint takes on special importance if the GOT decides to support a program of shelter solutions in urban areas which have much lower costs than those presently offered. Such solutions would require more direct participation by the beneficiaries and would reach "standard" sizes (e.g. two bedrooms) and get full utilities connections only gradually as a result of the effort to keep initial costs to a minimum. Such programs will require adequate supervision and technical assistance so that the self-help construction makes the best use of materials and results in durable improvements to shelter conditions.

continued expansion of shelter programs for the urban poor may be too closely tied to continued expansion of GOT budget allocations for such activities. The direct commitment of GOT budget funds to the housing programs was reduced from 1977 to 1978, but it is not clear that the resources which will replace these investments can be relied on to grow automatically in the long term. It seems likely that a greater effort will be required to develop programs which generate additional working capital by themselves.

A. The Selection of Solutions Designed to meet the Financial Capacity of the Poor Urban Area Family

1. Identification of the Target Population

Though the government recognizes the importance of improving the living conditions of the urban poor, no adequate analysis exists which permits detailed identification of the target population. Some work is being done in the District of Tunis which, when completed, will help greatly to expand the knowledge of the income patterns and the housing conditions and preferences of the poorest half of the urban population. It appears, however, that for programs to be designed to work effectively for this element of the population, answers will have to be found to such questions as:

a) what income levels are GOT programs truly designed to serve?

b) what is the relationship between living space and the family's desire to spend for such a purpose?

c) does rental housing, with its greater flexibility, better serve the needs of the target population?

d) what are satisfactory immediate improvements to shelter conditions in the eyes of the target population?

2. Definition of Appropriate Minimum Requirements

While the "suburbain" and "evolutif" units currently produced by GOT programs satisfy a large existing demand, they only lightly touch the population with monthly incomes below the urban median.

It would seem appropriate for GOT shelter sector officials to take the rural program concepts of partially completed houses and lots, and adjust it to the specific requirements of urban areas, such as better connections to public utilities and smaller lots.

It appears that resolution of this problem of solution type and cost might come from use of minimum standards such as one room, water taps for groups of units, public toilets, etc. for the initial project, with the foundation laid for gradual improvement of the living space and utilities connections to be produced by the home purchasers over time.

It is suggested that the market for such housing solutions is large in Tunisia, and that the GOT will have to provide for this market before it really has control of the housing problem of the nation's urban poor.

3. Dégourbification

Housing officials in the GOT will have to be careful that urban officials consider the replacement and relocation aspects of degourbification in the nation's urban areas. The GOT has a difficult task ahead in steadily increasing the stock of low-cost housing, and aggressive neighborhood improvement programs which include removal of the existing "gourbis" may result in removal of greater quantities of units than are being produced by public and private sector housing programs.

B. Increased Self-Help Construction will Require Increased Technical Supervision

1. Materials and Construction Techniques

If minimal units or partial solutions are adopted as a means of providing lower cost options for low-income families there will be a need for increased supervision of self-help construction and additional technical assistance. By providing for adequate monitoring of the self-help process GOT officials can assure the development of durable, cost efficient improvements to the conditions of low-income neighborhoods. Efficient use of materials and improved construction techniques can result from adequate participation by GOT professionals in the construction process.

2. Infrastructure

Partial solutions which require gradual incorporation of a community into the public utility networks, through home-owner constructed connections for example, also require adequate levels of professional assistance. To assure that minimum standards are met and that techniques are used which provide the most cost effective approach municipal governments will need adequate quantities of on-site supervisory personnel.

C. The Dependence of GOT Shelter Programs on Direct Budget Outlay

Though the 1978 budget reflects a decrease in the direct participation by the GOT in housing investments (from 29% in 1977 to 20%) it is not clear that the mechanisms exist for the financing of low-cost housing programs which will permit a steady reduction of their dependance on the GOT subsidy.

If the principal resources for low-cost housing programs continue to come from the CNEL, expansion of these resources must depend on increased savings mobilization and increased capitalization of the CNEL as a result of loan activities.

The GOT has already recognized that the contract savings plan has had difficulty offsetting cost inflation at the lowest savings plan levels and has responded with the creation of the FOPROLOS, a payroll tax program which deals only with the salaried population. The ability of the contract savings system to serve as a primary means of mobilizing increased quantities savings for housing programs over the long term should be analyzed in the context of estimates of the inflationary pressures during that term.

The newness of the CNEL makes definitive analysis of its operations difficult, but it seems possible that 1½% operating margin with which it is now working (4% for savings, 5½% on loans) is too narrow for long term capitalization even when combined with astute short-term money management. It seems possible that the CNEL system so favors the ultimate client, the housing purchaser, that it does not permit adequate strengthening of the institution.

If greater degrees of independence from GOT budget allocations are necessary to realize real long term growth in the financial resources available to very low-cost housing programs it may also be appropriate to consider the interest rates being applied to savings and to loans. It seems possible that these may have to be adjusted upward to respond to the competition for savings, and to reflect the higher cost of acquiring funds outside the original channels of GOT budget and the recuperation of SNIT loans made prior to the CNEL's existence.

VII. ANALYSIS AND RECOMMENDATIONS

A. Economic Activity

Estimates for 1977 suggested that the nation's economic growth rate had slowed appreciably from the levels reached during the IVeme Plan period. Drought continued to plague the nation's marginal agricultural regions, and export markets were not as strong. The government has relied increasingly on foreign debt and deficit financing to fuel the steady growth in economic activity. Nevertheless, foreign debt servicing took about 12.5% of export earnings (11.5% if workers' remittances were added to export earnings), a level below that of many of the nations classified along with Tunisia as "intermediate middle-income countries" by the World Bank. IMF analysis does not expect this debt service ratio to exceed 20% by 1987.

The government deficit was expected to reach TD. 223 million ($533 million) in 1978. While the consumer price index rose approximately 6% per annum, a true inflation rate for all goods and services has been estimated to lie between 9 and 13% per annum. Analysis of the national economy suggests that the experience of the past 10 years has been positive and that activity can continue to expand, but that the nation's economic policies must begin to take more account of the pace of growth and its effect on the national budget and the balance of payments. A lackluster economic performance in Europe may dampen Tunisia's export trade and the European job market for Tunisian workers, further exacerbating unemployment at home. The prospects for the Veme Plan period are not yet altogether clear; however, the strong performance attained during the IVeme Plan has provided a good base for growth in the coming years.

What would be the effect of a loan for a housing program on Tunisia's balance of payments? If calculations are based on a $30 million loan, $3 million might be used to cover the import content of the structures, imported building materials, the machinery that makes and transports the materials, etc. One could then suppose that the remaining $27 million would be converted into dinars and would thus mobilize resources that would otherwise be unemployed. Income would be generated of which some portion would be spent on imports.

A Keynesian multiplier can be used to estimate the amount of income generated: $1/(1 - b - v)$, where b is the marginal propensity to consume and v the marginal propensity to import. Using Table 2 we can calculate a 1973-76 marginal propensity to consume of .753 and a marginal propensity to import of .353. The multiplier implied is 5/3. Consequently $27 million spent on construction would generate $45 million in income. Out of this amount, 35.3% or $15.9 million would be spent on imports. Therefore:

Loan		$30 million
Less:	Import Content of Construction	3 "
	Imports Generated by Income Rise	15.9 "
Remainder		$11.1 million

In other words, the need for foreign exchange will be well under the total amount lent. (Only if the marginal propensity to consume were 100% would the imports generated by construction spending equal the amount of foreign exchange lent or $27 million in this case.) Productive use of these funds is one of the extra benefits of the program.

Whether or not foreign exchange is generated for repaying the loan depends on factors too numerous to explore here. One example can be used, however, as an illustration.

Converting $27 million gives TD.11.12 million. That amount would allow 5,000 families with monthly income of TD.97,5 per family to buy dwellings costing TD.2,224. The mortgages might entail 15 year loans at 10%, meaning monthly payments of TD.24.5 for households earning 98 dinars per month. If their purchases of imported goods therefore decrease by 12.6 dinars monthly (and their mortgage repayments are not used to generate other imports), the money coming in from installments paid would be sufficient to service the international loan. For that part of the international loan of $18.9 million associated with the housing program, the terms assumed are 30 years at 9%. $1.84 million would have to be repaid annually, meaning TD.63,200 per month. Divided by 5,000 households, the amount due comes to TD.12,6 per household per month. After 15 years, further repayments would have to be generated by exports, possibly those created by investment of the $11.1 million not needed for the housing program.

This example is merely illustrative and uses a series of plausible figures that could possibly be wrong. Much further research would have to be done to trace the actual effects. Note that inflation in all its guises has been ignored in this simple exercise.

B. Household Income Trends

Projections of median income levels have been calculated using a real growth rate of 2% per year with a conservative adjustment for inflation of 6%. According to this formula, 8.12% annually would yield a 118% increase over the ten-year period from 1975 to 1985.

TABLE 24

MEDIAN HOUSEHOLD INCOME LEVEL PROJECTIONS 8.12% P.A. GROWTH RATE (DINARS)

	1975	1978	1981	1985
District of Tunis	91	115	145	190
(" " " 20th percentile	46	58	74	101)
Sfax, Sousse, Bizerte, Gabes	56	71	89	122
Other towns	66	83	105	143
All urban	61	77	97	133

These calculations assume that distribution patterns remain unchanged throughout the ten-year period.

C. Shelter Sector Prospects

With regard to the housing sector, the Vème Plan notes that replacement of the most minimal and unhealthy units ("gourbis", tents, thatch huts, etc.) over a 20-year period would require the production of 11,000 units a year. As population grows on the average by 138,000 people per year and Tunisians live in households averaging 5.5 people, about 25,000 additional units would have to be produced yearly. To reduce the current average per unit density level from 2.77 people per room to 2 people per room would require construction of 13,000 units per year over 20 years. Replacement of standard units reaching the end of their useful life would require production of 7,800 units per year.

In sum:

	Per year production
Replacement of substandard units	11,000
Reduction of density	13,000
Replacement of deteriorated units	7,800
To absorb population growth	25.000
Annual need	56,800

The Plan has set 25,000 units per year as its production goal for the five-year period ending 1981, recognizing that absorbing new population alone would be challenge enough. Noting in its review of the Vème Plan that housing production had reached a level of 24,700 units in 1976 and that in fact annual production might actually climb to between 32,000 and 35,000 units a year, the World Bank suggested that the GOT might raise its sights and strive for an average annual production of 31,200 units.

1. The Institutional Base

The shelter sector's institutional base was greatly strengthened during the IVème Plan period. Land planning and acquisition were dealt with through a reemphasis on municipal, general and master plans and the strengthening of the regulatory powers of these plans. Better coordinated municipal planning combined with the land acquisition ability of the AFH has led to the promotion of moderate cost housing projects carefully designed to fit the growth patterns and needs of the nation's principal urban centers.

Work on the planning and land reservation aspects of the shelter problem has been complemented by the reorganization of the SNIT into a regionally oriented institution with a much higher output and much improved cost controls. Private sector involvement has been encouraged since 1974 at which time laws were passed authorizing special tax incentives and interest subsidies for those real estate development companies willing to produce the types of housing considered most urgent by the national development plans.

Financing for both home buyers and developers was coordinated and made more readily available by the creation in 1974 of the CNEL, which not only enjoys government support but also can attract private sector savings.

In addition to government programs designed to speed up the production of housing units, efforts were made to help municipal governments prepare the public facilities base required. In 1975 the national government forgave all municipal debt and strengthened the programs which would lead to better budgeting and stronger funding of municipal services. The ONAS was also created to analyse the problem of waste collection and treatment. In fact, ONAS studies are also serving to tie municipal development to both water and sewer considerations.

The institutional base for major improvement of shelter sector conditions has been strengthened but the institutions and the programs are very new. It seems likely that much of the Vème plan period will be used to sort out the institutional relationships and the impact of the programs. Certain problems have already been identified:

a. the predominance of Tunis in the results to date

b. the absence of programs directed at the non-salaried urban low-income population

c. the effect of the high cost of land on low-cost projects

d. the difficulty in attracting private sector developers to units costing 5,000 D ($12,000) and less

e. the gap between existing and adequate waste water collection

f. the increased need for direct government intervention in projects for low and moderate income families (150 D per month - $239 - and less)

Most likely these and other problems will be the focus of the working up of the VI^{eme} Plan. This process will probably begin to get under way in 1979.

2. The Size of the Need

The housing sector now accounts for about 3.6% of GDP. It is the target of 14% of the V^{eme} Plan investment. How much effort will be required to raise the standard of living to a point where all Tunisians may enjoy at least a minimum quality of shelter which is secure and healthful? A stock-user matrix has been employed to attempt to establish some form of answer to this question, though this construct may not be ideal.

a. Housing in the Tunis Metropolitan Area

Using the basic stock-user matrix of Table 25a, one can analyse a number of alternative policies for any future period, say 1975-85. In Tables 25b and 26 we have assumed that the Tunis population grows at an annual rate of 3.2% and that incomes grow at an annual rate of 2.0% at all levels, implying no basic change in income distribution patterns. Housing deteriorates at the following annual rates: 0.5% for H4/5, 1.0% for H3, 1.5% for H2, and 2.0% for H1. As a result, there will be 202,030 households in 1985 and 85,600 units remaining from the 1975 housing stock.

If nothing at all had been built during the entire decade, the index of housing would have fallen by half to 40. As can be seen in Table 25b almost no one would be "on the diagonal", in the kind of dwelling he is willing to pay for, and an additional 69,000 households would now be doubled up or living in substandard or overcrowded conditions. Altogether 57.7% would be in HO housing. Fortunately that is not happening.

At the other extreme, we can look at the implications of programs which put every household into a basic low-cost H2 dwelling as a minimum, with those earning more that 183 dinars (1975 purchasing power) on the diagonal. Table 26 postulates that situation. The bottom row indicates the number of dwellings that must be built or upgraded, a total of 157,000 (roughly 12,200

TABLE 25a

SUMMARY OF THE HOUSING SITUATION IN THE DISTRICT OF TUNIS, 1975:

STYLIZED CROSS-TABULATION OF HOUSEHOLDS BY INCOME AND DWELLINGS BY QUALITY

Dwellings / Households (monthly income)	H_0 Substandard temporary	H_1 Minimal	H_2 Basic	H_3 Moderate cost	$H_{4/5}$ Good Luxury	Σ_F	Index
F_0 Below 46 D	28,900					28,900 19.6%	—
F_1 46-91 D	18,280	27,870				46,150 31.3%	80
F_2 92-183 D		21,520	22,860			44,380 30.1%	76
F_3 184-367 D			2,500	16,670		19,170 13.0%	93
$F_{4/5}$ 368 D or more				1,910	6,930	8,840 6.0%	89
Σ_H	47,180 32.0%	49,390 33.5%	25,360 17.2%	18,580 12.6%	6,930 4.7%	TOTAL 147,440	81

TABLE 25 b

HYPOTHETICAL SUMMARY OF HOUSING IN TUNIS, 1985

ASSUMING NO CONSTRUCTION, 1976-85

Households (monthly income) \ Dwellings	H_0 Substandard temporary	H_1 Minimal	H_2 Basic	H_3 Moderate cost	$H_{4/5}$ Good luxury	Σ_j	Index
F_0 Below 46 D	22,380					22,380 11.1%	--
F_1 46-91 D	52,960	--				52,960 26.2%	--
F_2 92-183 D	41,138	20,732	--			61,870 30.6%	33
F_3 184-367 D		19,623	21,667	--		41,290 20.4%	38
$F_{4/5}$ 368 D and more			136	16,803	6,591	23,530 11.6%	64
Σ_i	116,478 57.5%	40,355 20.0%	21,803 10.8%	16,803 8.3%	6,591 3.3%	202,030	40
Remaining H_j	--	40,355	21,803	16,803	6,591	SUM 85,552	
Build D_j	--	--	--	--	--		

TABLE 26

HYPOTHETICAL SUMMARY OF HOUSING IN TUNIS, 1985

ASSUMING ALL HOUSEHOLDS ARE ADEQUATELY HOUSED

Dwellings / Households (monthly income)	H_0 Substandard temporary	H_1 Minimal	H_2 Basic	H_3 Moderate cost	$H_{4/5}$ Good Luxury	Σ_F	Index
F_0 Below 46 D			22,380			22,380 11.1%	100+
F_1 46-91 D			52,960			52,960 26.2%	100+
F_2 92-183 D			61,870			61,870 30.6%	100
F_3 184-367 D				41,290		41,290 20.4%	100
$F_{4/5}$ 368 D and more					23,530	23,530 11.6%	100
Σ_H			137,210 67.9%	41,290 20.4%	23,530 11.6%	202,030	100+
Remaining H_j			21,303	16,303	6,591	SUM 45,197	
Build or Upgrade			115,407 73.6%	24,487 15.6%	16,939 10.8%	SUM 156,833	

units in the first year, and 20,200 in the last). Of these,73.6% are H2's that would have cost TD.2,000 in 1975.

The cost of this building program (without infrastructure) would reach TD.500 million. About 84% of this amount would come ultimately from amortization of loans by the occupants. The other 16% or TD.80 million would have to be used to supplement the payments of those Fo and Fi households earning less than TD.92 monthly. The cumulative sum of Tunisian GDP from 1976 through 1985, assuming a 5.2% growth rate in real terms would be TD.23,300 million ($56 billion). The amount needed for housing for the District of Tunis, as estimated here, would be 2.1% of this total, or TD.489 million ($1.2 billion).

b. Urban Housing Outside the District of Tunis

With a population growth rate of 3.2% during 1975-85, the number of urban households outside Tunis should increase to 422,900. Their redistribution among previously set categories which should result from income growth is shown in Table 27. In the cells one sees the allocation of households to dwellings providing enough units are built to put everyone on the diagonal or at least into H2 "Basic" housing. Of the 346,400 units that would have to be built over ten years, 95% would have to be of the "Basic" type. The total cost would be TD.737.2 million, or 3.2% of the cumulative 1976-85 Tunisian GDP.

c. Rural Housing

It is generally expected that from 1975 to 1985 the number of rural households will grow at an annual rate of 1.3%. The net increase will be 76,400 households. If all of these are to be given minimal dwellings, and if the 467,000 existing substandard huts are to be replaced, 543,400 units would be needed. At a cost of TD.1,000 each, TD.543.4 million would be needed. This amount corresponds to 2.3% of the cumulative 1976-85 GDP.

d. Summary

It should also be remembered that in addition to the assumptions made regarding Tunisian objectives, 1975 dinars have been used. Though the dinars will change in value, the proportions of GDP implied by the analysis will remain the same. The analysis also does not account for alternative output lost by diverting land from other uses.

TABLE 27

HYPOTHETICAL SUMMARY OF URBAN HOUSING

OUTSIDE OF THE DISTRICT OF TUNIS, 1985

Assuming All Households are Adequately Housed

Households (monthly income) \ Dwellings	H_0 Substandard temporary	H_1 Minimal	H_2 Basic	H_3 Moderate cost	$H_{4/5}$ Good Luxury	Σ_F	Index
F_0 Below 46 D			128.7			128.7 30.4%	100+
F_1 46-91 D			152.1			152.1 36.0%	100+
F_2 92-183 D			102.4			102.4 24.2%	100
F_3 183-367 D				30.4		30.4 7.2%	100
$F_{4/5}$ 368 D and more					9.3	9.3 2.2%	100
Σ_H			383.2	30.4	9.3	422.9	100
Remaining H_j		(50.4)	54.2	14.6	7.7	76.5 SUM	
Build D_j			329.0	15.8	1.6	346.4 SUM	

TABLE 28

SHARE OF GDP NEEDED FOR DWELLING STRUCTURES, 1976-85

	Percent
Tunis, all on diagonal or in H2 dwellings	2.1
Other urban communities, same	3.2
Rural areas, all in H1 minimal dwellings	2.3
Total	7.6

7.6% of GDP for housing for a decade is very high but not unprecedented. What is noteworthy is that Tunis should get 27.6% of the total or 39.6% of all urban dwelling construction.

If 7.6% for dwellings is regarded as too high a proportion by economic planners, housing authorities and private builders may have to settle for some lower amount, say 5.0%. If Tunis still gets a 27.6% share, that would be 1.4% of GDP or TD.326 million.

Even with TD.326 million, one can still build or upgrade 156,800 dwelling units but a larger proportion of them would have to be basic, as shown in Table 29. The index of housing could rise only to about 85 because most families with incomes above TD.183 monthly would be to the left of the diagonal. Any additional building for these families would have to be compensated by leaving some poor families in H1 (minimal) housing or worse. However, if nothing is built for the richer H4/5 families, these are likely to increase their spending on commodities less labor-intensive and more import-intensive than housing. They are also likely to bid up the price of the lower quality housing in which most of them will have to live, to the disadvantage of the middle classes. None of these alternatives seems desirable.

Finally, rural-to-urban area migration can be expected to continue to exert pressure on the urban area housing stock. The 9eme Plan begins efforts to upgrade conditions in the nation's secondary cities so that Tunis may not be as hard hit as in the past. The overall trends, nevertheless, are not expected to change dramatically.

TABLE 29

HYPOTHETICAL SUMMARY OF HOUSING IN TUNIS, 1985

Assuming a Cumulative Investment Constraint

of TD 326 Million or 1.4% of GDP

Dwellings / Households (monthly income)	H_0 Substandard temporary	H_1 Minimal	H_2 Basic	H_3 Moderate cost	$H_{4/5}$ Good Luxury	Σ_F	Index
F_0 Below 46 D			22,380			22,380 11.1%	100+
F_1 46-91 D			52,960			52,960 26.2%	100+
F_2 92-183 D			61,870			61,870 30.6%	100+
F_3 183-367 D			35,186	6.104		41,290 20.4%	57
$F_{4/5}$ 368 D +				16,939	6,591	23,530 11.6%	64
Σ_H			172,396	23,043	6,591	202,023	85+
Remaining H_0			21,803	16,803	6,591	35,552 SUM	
Build D_0			150,593	6,240		156,833 SUM	

3. Housing Programs and Employment

a. Employment Generation on the National Scale

The IVeme and Veme Plans combined are expected to produce 198,000 dwelling units. If this rate of expansion continues, the Veme and VIeme Plans together will produce 339,000 units. Estimates made elsewhere in this report suggest that, even without undoubling households, 503,000 additional units will be needed in ten years in urban areas alone if everyone is to live in at least a "basic low-cost" (H2) dwelling. Without a construction or upgrading program, Tunisia will also be short 543,000 adequate rural (H1 minimal) units by 1985. Building all this rural and urban housing would require 7.6% of GDP for ten years, whereas the share in recent years has been 3.6%.

In 1975, a total of TD.147 million were spent on value added in construction materials and in the construction industry, a total of 8.5% of GDP. Since housing cost 3.6% of GDP, it generated about 42% of construction output and employment. The Veme Plan estimates that an additional 31,000 jobs will be created in the construction industry. If 42% of these are in housing, 13,000 jobs would be created there. An additional 1,300 will likely be created in the production of building materials, or 14,300 altogether. This figure compares with about 53,000 workers building dwellings and making materials for them in 1975. An additional 10,000 to 20,000 workers may have been employed in making the materials and fuel that go into the production of building materials, their transport, and all the other jobs that are generated indirectly ad infinitum. Studies in Mexico and elsewhere have shown that for every construction job on building sites, about half a job is generated elsewhere.

If all these rather speculative figures are combined, they lead to the conclusion that, directly or indirectly, dwelling construction should employ 90,000 workers per year during the Veme Plan. Doubling the volume will not create that many more jobs, for raising output of housing is likely to entail a lower output of other goods. But considerable expansion will occur since construction can draw on previously unemployed resources. These resources can be mobilized all the more easily for construction since this industry can be made less capital-intensive and less import-intensive. It would therefore be a mistake to adopt any construction technology that uses a high level of mechanization or a high proportion of imported components.

One must also beware of arguments which claim that the housing shortage can be resolved more quickly if dwellings are built faster. The number of days per dwelling matters less that the total number of units built per year, even if each unit is built slowly. If the labor-intensive buildings are cheaper, the country can afford more of them and a given share of GDP will create more units. High levels of mechanization and imported components in order to reduce construction time constitute a questionable use of resources, especially in a country with a high rate of unemployment.

b. Employment Generation by Housing Programs for Families Below the Median Income Level

Any estimate of the number of jobs generated by a comparatively small part of a national housing program requires stringing a few facts together with many assumptions. Does the program result in a net change since housing answering to such specifications would not otherwise be built? Does the share of spending for administration and land acquisition generate any employment? Since a third of the foreign exchange lent is available for purposes unrelated to the housing program, how many jobs are created by the use of that money?

Suppose that $30 million are available (TD.12.3 million) and that of this amount $21.5 million (TD.9 million) are spent on improving sites, building new structures, and rehabilitating old ones. It is reasonable to assume that one third of the money or TD.3 million would go for wages. If two unskilled workers plus one skilled worker together earn TD.2,400 annually (TD.200 monthly), 3,750 jobs will be created in construction.

About 20% of the TD.6 million spent on building materials is likely to go for wages, including wages for materials that go into the building materials etc. That means TD.1.2 million in wages. If three workers in these sectors earn TD.2,700 (TD.225 monthly), 1,333 jobs will result. The sum is 5,083, so we can say five thousand as a ballpark figure, a net gain only if all these workers were previously unemployed.

Another possible indirect effect of the building program might be the generation of an additional TD.3 million in income through multiplier effects. Some of this additional income, perhaps one third of it, could serve to mobilize unused resources, specifically unemployed labor. Another 3,000 jobs might result, but this figue is highly speculative.

D. The Shelter Delivery System: Prospects

1. What Price Unit can the Target Population Afford?

At present, the least expensive units being offered on the market at prices which more or less reflect the full market cost are those being built under the AID assisted "core housing" program in the coastal cities south of Sousse. These (H2) units carry prices of about TD.2,300 ($5,500). With the government's standard 270 D per unit subsidy deducted, they are offered to the buyer at TD.2,030 ($4,850). It is expected that construction of these models in cities in the interior in the near future will be impossible for less that TD.2,500 ($6,000). This data sets the base for analysis of programs which could serve the target population. Programs which will result in either lower cost construction or easier financial terms are being seriously considered by the GOT.

The most immediate outcome of such efforts is evident in the financial programs now offered. The least expensive means of home ownership applied institutionally is available in the rural housing program. As mentioned earlier, this program is designed to produce the largest percentage of units built during the 9eme Plan, 40,000 or 32% of the total. The rural program is of special interest because, in many cases, units are being constructed just outside the city limits and, therefore, effectively represent an addition to the municipal area's housing stock. The requirements for purchase of a unit under this program include not owning a "decent" home. In this way, some families now residing in urban areas can qualify for the rural units.

When built under the aegis of a SNIT program, rural units (H1 in our terms) cost between TD.1,300 and 1,600 ($3,120-3,840). These units are delivered with no utilities but some lots are equipped with attachments required for future hookups. Land is usually provided for a minimal charge. The selling price is reduced by the per unit subsidy of 270 D, and a rural development program subsidy of up to [illegible] D. A 640 D loan carrying a 15-year term and no interest reduces the amount the buyer must deposit as downpayment to 390 D (for the 1,600 D unit) or 24% of the unit cost. The monthly payments for this example would run about 4 D ($10), a level which is workable for practically all buyers. 75% of the unit cost in the rural program is covered by governmental assistance.

During 1976, GOT housing officials noticed that a gap was developing between the offerings of the rural program and those of the next step above, the "suburbain" or core unit. Originally CNEL programs included options for families able to save as little as 7 D ($17) a month. These programs led after 4 years of saving to purchase of units costing roughly TD.1,400 ($3,360) and requiring monthly payments of 8 D. (The CNEL loan terms are set at 4.5% interest and 10 years.) Since such units were not being built

(in fact, in the Tunis area, where most of the CNEL savers reside, nothing was available below 3,000 D), it became clear that these lower categories were unworkable, and that financial remedies would have to be found. The FOPROLOS was designed to satisfy this need, effectively increasing the role of government in housing finance. This fund, nevertheless, was established to service salaried workers exclusively and the credit program was designed to cover purchase of a TD.3,500 ($7,640) unit, so the gap continues to restrict housing options for families at the bottom of the urban income scale.

What kind of loan can families with median incomes repay? The estimates of 1978 median monthly family incomes are: TD.115 for Tunis, TD.71 for Sfax, Sousse, Bizerte and Gabes, and TD.83 for all other towns. Table 30 compares different unit values for different levels of median income, as well as for those families with incomes equal to the minimum industrial wage or 150% of that wage. The calculations make clear the impact of government programs on the possibility of financing home purchase. The calculations also make clear that the core housing now being sold outside Tunis for between TD.2,000 and TD.2,500 fits the requirements of many families whose incomes fall below the median.

The limiting factors, if one assumes that the GOT policy is appropriate for the long term, are the quantity of units being produced, the exclusion of non-salaried workers, and the high down-payments required. While it is understood that the Tunisian readily accepts great financial sacrifices in order to own a home it seems clear that an annual income of TD.670 and a large family, for example, make capital accumulation a difficult process. The FOPROLOS program was designed to address this fact and its terms require a down-payment of 16% only of the sales price (15% of the actual unit cost).

Constraints such as the quantity of units produced and the exclusion of unsalaried workers are treated later. If the downpayment is reduced substantially, making market entry more simple, if the calculation for the percentage of income to be expended is held to 25%, a level close to the statistical findings of the housing expenditure surveys mentioned earlier, and if interest rates charged are closer to actual market rates, the results, shown in Section B of Table 30 suggest that the TD.2,000 "core" unit now being produced (after the TD.270 subsidy) will be accessible to Tunisians close to the upper limit of the below-median-income bracket except in the Tunis metropolitan area. This hypothetical market analysis would suggest that if ease of entry into the housing market is to be assured and if the government is to focus more directly on the most severe problems, it will want to encourage production of a unit whose real cost stays very close to TD.2,000.

Another approach to analysis of this problem takes into account the amount of subsidy and the problem of inflation. Though 8.5% interest rates approximate prevailing market rates, they may not effectively factor in the longer repayment terms of the mortgage being discussed. Inflation

TABLE 30

COMPARISON of DWELLING UNIT AFFORDABILITY
ACCORDING to DIFFERENT FINANCING SCHEME

FINANCING PROGRAM TERMS

Locale and Monthly Family Income Level (1978 EST.)	A FPLS- see TD.44.5 income level below Savings Contracts - terms 30% of income max. for housing 10 yrs., 4.5% (4 yr.savings contract) 33% Downpayment					B Hypothetical Program 25% of 15 yrs - Income max. for Housing 10% Down - 8.5% interest payment			C CNEL Program Loan Size if the interest rate were increased to 8.5% and maturity was set at 15 yrs.	
	Loan	Down Payment	Sales Price	Gov't Subsidy	Full Unit Cost	Loan	Down Payment	Full Unit Cost	Loan	% CHG from A
						(in Dinars)				
Tunis (median) TD 115	3329	1665	4994	270	5264	2920	324	3244	3503	+5%
Sfax, Soussel Bizerte, Gabes (median) TD 71	2055	1028	3083	270	3353	1803	200	2003	2163	+5%
Median for All other Urban Areas TD 83	2403	1202	3605	270	3875	2107	234	2341	2529	+5%
Minimum Wage Family with 1.5 wage earnings TD 67	1939 *2800	970 540	2909 3340	270 270	3179 3600	1701	189	1890	2041	+5%
Minimum Wage TD 44.5	1288 *2800	644 540	1932 3340	270	2202 3610	1130	125	1255	1356	+5%

*FPLS - TD 540 Down, TD 280 Loan 15 years at 3%. Payments, TD 19, are 43% of TD 44.5 income and 28% of the TD 67 level.

is conservatively estimated at 6% per year though some analysts have suggested it may be higher. The following analysis therefore compares 10% rates with 5% rates, an approximation of the present subsidized rate. The important result of the analysis is the forecasting of the impact that various options might exert on the subsidy and the size of loan.

We shall begin by estimating the kind of structure that can be built with loans entailing varying maturity and repayment schemes. Since land costs vary with city sizes, their inclusion would confuse analysis of what ought to be designed. In accordance with findings already reported, we shall assume that households are willing to spend 19.3 percent of their incomes for the structure. In the District of Tunis that means a maximum of TD.22.2 for those receiving TD.115, the probable median, and only TD.8.7 for anyone earning no more than the new minimum wage.

If the opportunity cost of capital in Tunisia is around 10% and if households are willing to pay the same rate, their housing expenditures are not holding back national development. But at this rate with a ten-year maturity, as shown in Table 31, even Tunis area median income families will get only a TD.1,636 loan. With interest rates at 5 percent annually, the present value of the monthly payments is 25.6% higher. That difference is actually a subsidy. At the TD.115 income level, it would be like having a TD.1,636 loan at 10% plus a gift of TD.420.

One can eliminate this gift simply by extending the terms of repayment to 15 years. The upper limit of a loan for the dwelling unit would be TD.2,025. To be sure to reach those people well below the median level, however, housing prices should not exceed TD.1,600 (without land) in the district, TD.1,200 in other cities, and TD.800 in rural areas.

Many countries, both industrialized and developing, have recognized that mortgage financing must cope with the intractable worldwide problem of inflation. Rising price levels mean that real interest rates are less than they seem to be, possibly even negative. Rising income levels mean that households with fixed payments are devoting less to housing than they could or want to.

A variety of ways have been devised to cope with this problem. Their essence is an upward adjustment of the rate of monthly payments, either to keep step with price rises or in the form of a fixed share of income. Another way specifies the annual rise in advance. Lines 3, 4, 7 and 8 in Table 31 show what happens to present value when monthly payments rise by 6 percent each year.1/

1/ The equation for making this estimate is $PV = A\left[\frac{(1+i)^n - (1+b)^n}{(i-b)\ (1-i)^n}\right]$

PV is the present value of the income stream. A is the sum of monthly payments in the initial year. Each year these payments rise by an amount b. The interest on the outstanding balance is i, and n is the number of years for repayment.

Note that when $b = 0$, the equation reduces to the wellknown annuity equation.

TABLE 31

AFFORDABLE DWELLINGS (PRESENT VALUE, STRUCTURE ONLY) AT VARIOUS INCOME LEVELS, INTEREST RATES, REPAYMENT PERIODS, AND REPAYMENT RATES

NOTE: It is assumed that the share of monthly income that pays for the structure without the site is 19.3 percent. If the site is worth an additional third and there is no downpayment, total monthly payments would come to 25.7 percent. If the site is worth 50 percent of the structure, monthly payments become 29 percent of income.

	Monthly Household Income, Dinars			115	91	68	45
10-year Amortization							
	Interest %	Annual Rise Month. Pay. %	Implied Subs. Rise in Value %	VALUE OF THE STRUCTURE			
1.	10	0	0	1636	1295	960	640
2.	5	0	25.7	2056	1627	1207	805
3.	10	6	0	2061	1631	1211	807
4.	5	6	29.2	2663	2108	1563	1042
15-year Amortization							
	Interest %	Annual Rise Monthly Pay. %	Implied Subs. Rise in Value %	VALUE OF THE STRUCTURE			
5.	10	0	0	2025	1603	1188	792
6.	5	0	36.6	2765	2188	1623	1082
7.	10	6	0	2836	2245	1665	1110
8.	5	6	43.4	4068	3219	2388	1592

In line 7, one can see the effect of these 6% increases on a 15-year mortgage at 10 percent interest. With a given initial monthly payment, one can afford a structure worth an additional 40 percent with no subsidy. Alternatively, a given structure can be afforded by a family with 29 percent less income. In Tunis one could finance TD.2,200 structures, in other cities those worth TD.1,700, and in the countryside TD.1,100 dwellings without decapitalizing the lending institution.

2. Analysis of the Financial Programs

To continue with the financial aspects, the government's intervention in the lending and pricing picture warrants further consideration. The 270 D. direct unit price subsidy may have important implications for units costing below TD.3,000. It could, for example, be considered part of the down payment. If the down payment is set at 20% the 270 D. subsidy would constitute 10% of the TD.2,700 core unit price and require only 10% of the prospective unit buyer. For TD.2,300 units the government would pay 12%, leaving 8% to be covered by the buyer. For the TD.2,000 unit the government's contribution amounts to 13.5% and so on.

Two points should be considered:

a. The real construction cost of the unit should be used instead of a value which reflects deduction of the 270 D. per unit subsidy.

An example of this "image" problem can be seen with regard to the 270 D. subsidy which actually off-sets the SNIT administrative and financing costs for the lower cost units. The public, however, assumes that their sales price includes a heavy percentage of SNIT charges (profit, overhead, etc.).

b. The 270 D. subsidy should be restricted to the lowest, most difficult levels of the housing market. This subsidy probably has no market impact when units cost above TD.5,000. The buyers at those levels today are meeting stiff loan terms (savings contracts, one-third down payments, often higher interest rates - 6-7%) and will not drop out of the market because a unit costs 270 D. more.

The 1% interest rate subsidy and the new FOPROLOS Program, while indications of the seriousness of the GOT commitment to encouraging home ownership, are also indications that the government is having a difficult time matching housing prices to savings potential. The role of the 1% subsidy available to CNEL is difficult to understand in light of the fact that the official 5.5% rate itself reflects an important intervention by the government.

While the subsidy clearly reduces costs for the home buyer, it does not seem designed to help the CNEL build a strong independent institutional base. Currently the CNEL's cost of funds varies. In addition to its capital base it pays 4% for savings contracts and approximately 8.3% for the HG loans. The bank's major lending activities to date have earned up to 7%.

Complete financial statements for 1976 and 1977 are not yet available, however, it appears that as the amount of credit in loans out adjusts to include those clients who have completed four years savings contracts the CNEL will find itself increasingly relying on government assistance to cover operating deficits, An exacerbating factor is the presumed but probably understated 6% inflation rate.

The CNEL may continue to expect increased savings resources, (though interest on savings may need to be made more attractive.) Nevertheless, if it is to be effective in the long run, it should aim at gradually building its own capital base through profitable operations. Only in this way will the amount of financial resources available for housing truly reach proportions adequate to meet needs.

The FOPROLOS effort results from GOT concern for low-income families and its recognition of the fact that the standard savings contract would not permit prospective buyers in the lowest categories (A - 7 D/month and B - 14 or 21 D/month) to amass enough money to buy the lowest cost dwelling units being produced in the Tunis area, where most of the CNEL's original clients were located.

This recognition points up to two problems primarily:

A. four years is a long time to wait when inflation is at work if you're at the bottom of the market range;

B. the construction industry has been having trouble designing units for the below median income level families.

Perhaps of greater concern, however, is that the FOPROLOS, though a strong government effort to steer assistance to very low-income levels, was set up to serve salaried employees only. Though this group needs housing assistance, the data seem to suggest that a large percentage (perhaps as much as 50%) of the urban poor are non-salaried and, therefore, excluded from this special assistance.

The early experience of the CNEL makes clear the viability of such an institution in the present context of Tunisia's capital market development. The institution has been successful in attracting savings and dominates the shelter delivery system. It seems possible that some of the caution which has hitherto marked its policies can now be replaced with a more energetic approach to housing finance. The savings concept is firmly rooted in Tunisian cultural habits. Both the accumulation of the trousseau and the repatriation of earnings from abroad indicate a strong propensity to save. It appears that the CNEL could properly consider reducing, or even eliminating the 4-year or 5-year savings contract requirements without adding to lending risk. Such a change would permit more active use of resources for individual home purchase or improvement, and would avoid the problems caused by the inflation of construction costs.

The CNEL experience has also suggested that since there now exists a reasonable financing mechanism, i.e. long term loans to cover a substantial percentage of the housing unit cost, many families in Tunisia will be ready to enter the market. This indicates that a self-liquidating home finance program will work and will allow the government to better direct its assistance to problems which the market finds truly difficult to resolve. The conclusion here is that the GOT effort to establish a viable housing finance institution and the related processes has begun well and has reached a point where certain aspects of the program can be spun off to operate independent of direct budget assistance as long as realistic interest rates are used.

3. Analysis of Dwelling Unit Construction Experience

a. Unit cost and design

The most inexpensive unit now being produced in any quantity by Tunisia's formal sector is a one or two-room unit with about $24m^2$ of constructed area on a lot of about $70m^2$. Once it is fully incorporated into urban area infrastructure networks, this unit, an H2, costs around TD.2,300 in major urban areas outside of Tunis. Such units, whose design is examined in Section V, are used in the Rural Housing Program as well. They are then adapted for lower infrastructure standards and the price may further benefit from very low land costs in rural areas.

The one-room version is being applied in Gabes, Sfax and Tunis under the A.I.D. assisted core housing program which is managed by CNEL and implemented by the SNIT. Officials are reluctant to accept this model as appropriate for the nation's housing programs, noting that the Tunisian home buyer wants to buy something much better than the housing in which his family is currently living, and that two rooms makes an enormous difference. The final vote on the acceptability of the one-room concept will not be in until completion of the core program, about 18 months away.

Two facts remain clear: 1. in 1975 40% of the nation's housing stock consisted of one-room units, and 2. individuals build on extra rooms more cheaply than can the institutions. This combination of facts appears to argue for offering a low-cost, one-room unit which could then be expanded as family expenditures absorb the impact of the payments for land and the core unit.

MOE is conducting a variety of experimental building programs in an effort to assess the possibility of using other materials, or cheaper techniques in order to reduce unit construction costs. In the rural areas adjacent to Tunis officials have noted that those land owners building one-room dwellings in a variation of the rural development program's housing program appear able to get a solid H1 unit up for about TD.1,000. Use of concrete blocks is now limited because GOT policy favors the production of brick, and aims to limit imports of cement, which is not produced in sufficient quantities in Tunisia.

b. Land and Infrastructure

Land and infrastructure hookups may account for as much as one third the cost of a unit. Land prices are considerably lower for properties which fall outside city limits, and these prices reflect psychological differences of importance which seem even more exaggerated when one considers that not all land within the city limits is served or can be served in the near future by public facilities. The increasingly effective planning process has undoubtedly played an important role in identifying those lands which will be considered in future infrastructure plans. Efforts are now being made to extend the municipal planning and development control authorities out beyond the defined city limits so that the design of public facilities networks can be better coordinated with what is called the U.S. "suburbain" development.

At least three modes of land banking are being practised: 1. the AFH buys land for development in the near future, 2. the "gouvernorats" make land already in their possession available for residential use, and 3. unauthorized settlement takes over undeveloped municipal land. With this 3rd process the land is, in effect, cost-free.

The effect of these various and not uniformly desirable approaches to making land available is unquestionably to reduce the cost of land for low-cost shelter. Land appears to be that component over which the government in Tunisia has the most effective control. It also appears to be the realm where government intervention can be positive with the least negative effect on the workings of the marketplace and the least serious impact on government finances.

Reducing infrastructure costs requires greater concern for the design of facilities and the natural environment in which the projects are located. For those projects built at a distance from existing facilities networks, rights-of-way may be the only factor which should be considered for future hookups.

At present, close coordination of sewer and water services is required; however, sewer service is far behind water in terms of extension and sophistication of treatment. Today's projects must, however, move from individual per unit facilities (wells, cesspools) to community facilities. In neighborhoods where lot sizes run from $75m^2$ to $400m^2$ soils would have to be exceptionally porous to permit satisfactory use of cesspools by each unit or every two units. In such a case individual unit wells would also be unsuitable.

When collector networks are used because it is simpler to tie into older existing municipal systems, the effect on the receiving area (at the end of the line) must be considered. Most Tunisian municipalities run their sewage to streambeds which are dry much of the year. At a time when even major cities lack adequate treatment plants it seems inappropriate merely to extend collector networks and thus add to the quantity of untreated sewage being deposited in one place. Neighborhood-size septic facilities might offer a more practical solution and might allow a lower cost per housing unit.

c. The Private Sector

In the Vème Plan the GOT has committed itself to promotion of the private construction industry. Originally, assistance was limited to large and medium sized companies in order that the country might have companies capable of handling major projects. Now that policy has been expanded to include assistance in the development of small contractors for the housing sector.

Since all government sponsored residential construction is contracted, the importance of the GOT as an influence on the development of the construction industry is considerable even though the output is not particularly complex due to the simplicity of design and cost minimization. SNIT contracts account for inflation through the use of complex formulae.

SNIT, the government's principal representative, must be concerned that it not be too loose in its control over contractors. The inflation formulae which permit price adjustment are applied, in principle, only following official price changes. The dependence on official pricing, however, may lead to calculations which do not reflect local variations in materials and labor costs. The reporting team was often told that it cost the same price to build a wall of fired brick or concrete block, while other, informal, sources indicated that the price of concrete block was roughly half that of brick. For contracting purposes, apparently, a sum had been selected as the cost of building a wall and the sum seemed immutable even in the face of evidence that a comparable wall could be built for less.

d. Project Control

On the assumption that very low-cost housing programs will be expanded, the GOT will have to increase the on-site supervision of projects. More active on-site supervision should result in two benefits: a better awareness of real project costs in cases where a mix of industrial construction and self-help techniques are used and better control over the quality and use of materials. It is not clear whether the transfer of administrative personnel to the field would help. The answer may lie in the training of secondary level technicians who could be brought in rapidly to assist fully-trained engineers.

Even if major housing projects do not employ concrete block construction, it appears that self-help building could benefit from block made by small producers throughout the urban areas. The small entrepreneurs working at each site do not do a bad job of forming the block, obtaining adequate degrees of consolidation even without a vibrating table. The curing process is completely neglected, however, resulting in a block which is not suitable for bearing loads. Appendix 2 discusses some of the steps which with little investment can greatly improve the quality of blocks produced by small entrepreneurs. It seems possible that a technical assistance program combined with increased on-site monitoring could result in more efficient use of the available low-cost building materials and encourage the formation of local entrepreneurs and jobs.

4. Neighborhood Improvement

With the increased concern for municipal planning and improvement of municipal financial conditions, the interest in neighborhood upgrading has grown. Though in the early stages of development, adoption of the process of upgrading is, effectively, recognition that immigration has outpaced the capabilities of the national and municipal governments to provide services and organize potential residential areas. Many spontaneous settlements have occupied land which is extremely difficult to service, a fairly common situation, and one which customarily gives rise to plans for the demolition of such housing.

Thus the municipalities are confronted with the need to design complex public facilities networks if the neighborhood is to be maintained, or to build replacement dwellings at a time when the housing stock is already seriously in deficit.

In those cases where the municipalities find they must accept the spontaneous settlements into the fabric of the city, plans are developed to tie the communities into the existing networks. Such processes often require demolition of units to acquire adequate rights-of-way, and often result in the connection of a neighborhood to a network which is already in poor condition and incomplete.

The need to devise innovative approaches to infrastructure placement is great. Though water and electricity are rapidly tied in to the spontaneous settlements (electricity first) the collection of waste water and of solid waste, essential if improved health conditions are to result, lag far behind the construction of dwelling units, the development of informal street networks and increases in densification. Furthermore, concern about municipal disapproval of spontaneous building causes many of the units to be constructed at top speed and, therefore, poorly. Municipalities now rely on the engineering services of the local offices of the MOE, which ... in turn rely heavily on consulting firms to design the systems to be incorporated into neighbohood upgrading plans. At present, one gets the impression that while the problems and the needs have been recognized, the solutions have not been uncovered and many plans are awaiting implementation. With regard to low income neighborhoods the localities' principal concerns are threefold:

- collection of waste water and its treatment
- collection of solid waste and its disposal
- improvement of structural quality of homes.

5. Sites and Services Solutions

The sites and services concept is being applied to rural housing programs with some variations. Near Mornaghia outside Tunis, lots of $400m^2$ permit use of water connections at each lot and cesspools. A wide variety of housing types are being built on these sites because differences in income are substantial and the project is related to a "dégourbification" or replacement housing program.

The "gourbi" image haunts Tunisia officials and makes acceptance of the sites and services approach more difficult in urban areas. Officials distrust the urban immigrant's ability to construct an esthetically pleasing home and feel that sites and services areas will rapidly become just like the spontaneous settlements. This concern runs counter to the recognition that many spontaneous settlements must be incorporated into the city through a gradual upgrading process. It seems probable that sites and services will be accepted by municipal officials, although at present there are so many possible urban upgrading projects that they are likely to attract the most interest in the immediate future.

6. Rental Units

Very few rental units are being produced in Tunisia though a great deal of renting goes on. The existence of this rental activity suggests to some Tunisian officials that rental units should be incorporated into the country's urban housing policy and programs, particularly to deal with rural-urban migration. (The CNSS will be financing the construction of rental units and its subscribers will receive priority as prospective tenants).

Chapter III has described the preponderance of renting in the ZHS of Tunis. Rental offers immigrants the flexibility they need while they get adjusted to the new community. Rental units also offer new families the possibility of acquiring slight increases in unit size as the family expands, and as incomes become more predictable. Though home ownership may be the objective of every Tunisian family, the capital investment and the commitment required may be impractical for the new urban dweller or the family recently arrived from another city.

APPENDICE 1

LISTE DES MEMBRES
DE LA COMMISSION NATIONALE SECTORIELLE DE L'HABITAT DE L'URBANISME ET DE LA CONSTRUCTION
(Vème Plan)

Président - Ministre de l'Equipement

Représentants du Ministère de l'Equipement

Représentants du Ministère du Plan

Représentant du Premier Ministre

Représentants du Ministère des Finances

Représentant du Ministère de l'Intérieur

Représentant du Ministère de l'Agriculture

Représentant du Ministère de l'Education Nationale

Représentants du Ministère des Affaires Sociales

Représentant du Ministère de la Santé Publique (Public Health)

Représentants du P.S.D. (Destour Party)

Représentants de la Banque Centrale de Tunisie

Représentants de l'U.G.T.T. (Labor Union)

Représentants de l'UTICA (Industry)

Représentant du District de Tunis (Council of Governments - Tunis)

Représentant de l'Ordre des Architectes

APPENDIX 2

IMPROVING THE QUALITY OF CONCRETE BLOCK PRODUCED BY SMALL ENTREPRENEURS

At the several sites visited where small entrepreneurs were making concrete blocks, it was noticed that the consolidation was quite good for a hand operation. The curing at almost all places was poor or nonexistent.

In order to speed up production and to improve the quality of the concrete blocks, a small vibrating table is ideal. Vibrating tables are manufactured with various capacities ranging from one to several blocks. For very small operations, tables can be purchased without filling devices so that the filling of the forms is done by hand labor. A concrete mixer is generally used to make the mix. An efficient operation can be set up using a concrete mixer as the only other piece of mechanized equipment needed to manufacture from two to four blocks at a time. This operation can be set up to use a maximum of hand labor and still greatly increase the productive capability. Production of up to 1,000 blocks per 8-hour shift should be possible with this method.

Proper curing of concrete is not limited to continuous wetting for 7 days as is commonly believed. There are several alternative methods for proper curing. In a very small operation hand sprinkling at about hourly intervals may be feasible. (It is common to find the blocks being sprinkled by hand one or two times per day, if at all. This results in a very poorly cured block with very low strength.)

The most practical curing method for the small- to medium-sized entrepreneur is the use of plastic sheeting to cover the blocks. If the blocks are thoroughly wet after the initial setting has taken place (one to two hours depending on the temperature) and then covered with a plastic sheet with the sides tucked in and weighted down, the combination of the moisture and the solar heat generated under the plastic should effect curing in from 24 hours to 2 days depending on the outside daytime temperatures. In larger operations, a movable plastic greenhouse such as used in the irrigated vegetable growing areas near Sousse can be used.

Curing, if the blocks are placed one layer deep, will require large amounts of space. Since the initial set will take place within a few hours after the forms have been removed, however, the afternocn run can be placed as a second layer over the morning run to conserve space. This will also reduce the size of area requiring a cover.

In sum, concrete blocks are cheap to manufacture, easy to lay up, and durable and strong if made properly and thoroughly cured. To overcome the bad image created by the poor quality blocks that are commonly available at construction sites in Tunisia and to reduce the waste of cement which results in its use for poor quality block, a simple and low-cost training program could be developed that would improve curing methods. A positive impact on the businesses of target population entrepreneurs would result.

APPENDIX 3

LIST OF PERSONS CONTACTED

Ministère du Plan

M. Zine El Abidine Mestiri	-	Directeur, Coopération Multilaterale
M. Abdelhamid Bouhaouela	-	Sous Directeur, " "
M. Mohamed Ghannouchi	-	
M. Hassen Quarfelli		

Ministère de l'Equipement

M. Lassaad Ben Osman	-	Ministre
Mme. Najet Khantouche	-	Directeur d'Etudes et de la Planification
M. Abdelaziz Sellami	-	Ingeniéur en Chef
M. Benir Tounakti	-	Directeur de l'Aménagement du Territoire
M. Noureddine Chiha	-	Direction " " " "

Ministère de l'Intérieur

M. Rachid Badri	-	Directeur des Collectivités Publiques Locales
M. Abdelmajid Sahnoun	-	Direction " " " "

Société Nationale Immobilière de Tunisie

M. Hassouna M'Nara	-	Président/Directeur Général
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M. Marakchi	-	Chef de la Région Centrale

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