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Yemen Arab Republic Urban Sector Report

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YEMEN ARAB REPUBLIC

URBAN SECTOR REPORT

CURRENCY EQUIVALENTS

US$1	=	YR1s 4.50
YR1 1	=	US$ 0.22

WEIGHTS AND MEASURES

1 Libna	=	44 Square Meters
1 Acre (ac)	=	0.405 Hectares
1 Mile (mi)	=	1.609 Kilometers
1 Pound (lb)	=	0.453 Kilograms
1 Short Ton (Short ton)	=	0.907 Metric Tons
1 Imperial Gallon (gal)	=	4.7 Liters

GLOSSARY OF ABBREVIATIONS

CYDA	-	Confederation of Yemeni Development Associations
CPO	-	Central Planning Organization
HCB	-	Housing Credit Bank
LDA	-	Local Development Association
MEWS	-	Ministry of Electricity, Water and Sewerage
MMH	-	Ministry of Municipalities and Housing
MPW	-	Ministry of Public Works
NWSA	-	National Water and Sewerage Authority
STCS	-	Swiss Technical Cooperation Service
YAR	-	Yemen Arab Republic
YBRD	-	Yemen Bank for Reconstruction and Development
YGEC	-	Yemen General Electric Corporation
YTC	-	Yemen Transport Company

GOVERNMENT OF YEMEN ARAB REPUBLIC
FISCAL YEAR

July 1-June 30 (Prior to 1980)
July 1-December 31 (1980)
January 1-December 31 (As of 1981)

YEMEN ARAB REPUBLIC

URBAN SECTOR REPORT

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This report is based on sector work which began in March 1979 when an Urban Sector/Project Identification Mission visited the Yemen Arab Republic (YAR) from March 5 to March 19, 1979. Mission members included Bernard Verdier (mission leader), Alain Bertaud, Abdallah Bouhabib, and Arnaud Guinard (IDA), and John Kirke, Donald Watson, and James O. Wright (Consultants). The report was updated and completed by Bernard Verdier (IDA) and Burkhard von Rabenau (Consultant) in December 1980 following several rounds of discussions with the government.

SUMMARY AND CONCLUSIONS

i. Rapid urbanization is a very recent phenomenon in the YAR. Until the Revolution of 1962, urban aras served as regional market and craft centers to their relatively isolated agricultural hinterlands. Although the political consolidation and economic prosperity of recent years have been marked with rapid population growth in a few principal large cities, the vast majority of the YAR's population still lives in a rural setting. According to the 1975 census, only about 7.5 percent of the country's resident population lived in the 6 large towns with over 10,000 inhabitants. A further 3.6 percent of the population lived in medium-sized towns of 2,000 to 10,000 inhabitants and 2.3 percent lived in small towns of 1,000 to 2,000 inhabitants.

ii. Urban growth in the Yemen Arab Republic has accelerated in the early seventies. Whereas the total resident population of the YAR, estimated at about 5.3 million in 1975, has grown at about 2 percent per year over the last decade, the total urban population estimated at about 350,000 in 1975, has grown at about 6 percent per year over the same period. The urban population is fairly evenly distributed. A widely dispersed rural population, rugged topography, traditions of regional autonomy, and a diversity of economic functions have combined to avoid the overwhelming primacy of any one city.

iii. Sana'a, the capital, is the government's administrative center and has a 1980 population of about 200,000, growing at about 7.6 percent per year. Hodeidah, the principal port and industrial city, has a 1980 population of about 110,000 and is growing at about 5.4 percent per year. Taiz which has a population of 100,000, and is growing at about 5.0 percent per year, has a rich agricultural hinterland and a long tradition of entrepreneurship. Together, these three cities account for more than 80 percent of the population in cities of more than 10,000. Ibb and Dhamar are the only other significant urban centers with populations of roughly 30,000 people each. The most striking demographic characteristic of the YAR, however, is the number of people abroad; in 1975 between 8 and 14 percent of the population lived abroad as short term migrants and at least 19 percent of the country's labor force of 1.4 million worked abroad

iv. Several factors have accounted for the growing urbanization. First, cash incomes from workers' remittances have been the largest source of funds for modern sector development. Although the remittance economy has stimulated most urban based modern sector activities, it has had its greatest impact on housing investment. This trend has been furthered by public investments which have mostly been concentrated in urban areas. Second, the level of temporary short term migration has levelled off since 1975 and third, the rural urban migration of single males who leave their families in the country and which accounts for most urban growth has been stimulated by the higher level of prosperity enjoyed by urban areas.

v. The rate of future urbanization in the Yemen Arab Republic is difficult to predict. Its major determinants are the natural rate of

population growth, the capacity of the agricultural sector to absorb future labor growth, industrial sector policies pursued by the national government, and the rate of short term migration of Yemeni labor. Higher population growth, lower emigration rates, and decreased labor absorption in agriculture are all distinct possibilities and point to increasing urban growth pressures. At present only about 8.5 percent of the population lives in urban areas (population greater than 10,000), but this percentage will have increased to between 19 and 21% in the year 2000 (not counting currently smaller urban areas that grow larger than 10,000). Given the intense regional tradition of the country, a significant part of total growth is likely to take place in secondary cities and towns. This implies that the system for urban administration must not only be prepared to face a serious quantitative problem, but it must also have the flexibility to respond to regional patterns. The Government is seriously concerned about the problems related to urban development and is determined to give them a high priority. At the same time, the government is also concerned about the need for improved regional development. Sixty percent of hospitals and 62 percent of the health centers are in the five main cities. Over 90 percent of university, technical and secondary educational facilities are in the main cities. Primary schools are distributed more evenly, but rural areas frequently lack qualified teachers and often have reduced curricula. Although there is no system for planning regional investment, there is now a deliberate policy of providing improved health centers, schools and water supplies (i.e., part of public administration expenditure) in smaller towns. There has also been a large investment during the past few years in rural feeder roads which link previously inaccessible villages to urban areas.

The Urban Administration

vi. The Yemen Arab Republic is divided into 11 governorates, each of which is administered by a governor who is a political appointee. The municipalities within governorates are headed by "Director Generals" who are also appointed by the central government. This highly centralized structure is reflected throughout the urban administration.

vii. The Central Planning Organization (CPO) has the responsibility for coordinating national urban development policies with broader national development strategies. The Ministry of Public Works (MPW) is responsible for surveying and mapping, land registration, construction of public building, rural water supply, and control of the Port and Highway Authorities. The Ministry of Municipalities and Housing (MMH) has the responsibility for the formulation of national urban and housing policies. There are ambiguities in the division between central and local administration, but local municipal offices are generally closely controlled by, and are financially dependent on the central level of the Ministry. Since June 1979 there also exists a municipal council in each governorate capital that represents the urban population of the governorate. Two-thirds of the council members are elected and one-third are appointed. The role of these councils is at present limited to that of advising the MMH. Local initiative is shared with the independent

Local Development Associations which organize local development projects largely with local funding. The provision of water and sewerage and of electricity is the function of semi-autonomous public utility companies.

viii. The functioning of this administrative structure is seriously constrained by the shortage of qualified personnel at all levels of government and especially in urban sector agencies. Before 1962, the system of government was largely feudal. The entire organization of the administration, including appointments, was handled by the Imam on a personal basis. Following the Revolution of 1962, successive governments tried to establish a modern administration, and since the end of the Civil War in 1970 there has been considerable progress. The number of government employees has increased from about 4,000 in 1962 to 31,300 in 1975. However, there is an extreme shortage of qualified personnel. In 1975, only 2 percent of government employees had university education. At least 8,000 public service positions still remain vacant; the largest number of vacancies is in the technical departments at both the central and local levels. There is a competition for qualified staff among departments. It is even more difficult to recruit qualified personnel for the governorate and local levels. Public sector salaries have not kept pace with inflation, especially with the cost of housing, which has made it difficult for government to compete with the private sector for qualified personnel.

ix. Centralized government administration has been a natural consequence of the government's need to consolidate control over the country after the Revolution and the shortage of skilled administrators. Over the longer term, however, a highly centralized administration seems to be incompatible with the regional development pattern of the country. A strategy is needed which will utilize existing local self-reliance. Although this may require a larger number of skilled administrators than a centralized administration, the absence of an adequate number of administrators in the short term should not deter the country from the most appropriate long-term development strategy. An effective decentralized administration should be developed to enable local authorities to address local urban problems directly. This will require increased financial autonomy for local administrations including a larger tax base and increased local discretionary power over spending. Improved local control over land use and taxation will be the most important steps towards this end. In the long-term the Central Government should play a more limited direct role in urban development. Although it should maintain an active role in policy planning and overall guidance of the urban sector, implementation should be left to local administrations. Urban development will also continue to depend heavily on private sector initiatives. The Central Government should guide private investments with appropriate incentive schemes. This will include the establishment of an adequate system for financing housing and urban infrastructure as well as other types of investments.

Urban Employment, Incomes and Productivity

x. Recent developments have considerably changed the level of incomes in the YAR. Since the quadrupling of international oil prices at the beginning of 1974, there has been an unprecedented increase in personal cash incomes

based mainly on remittances from Yemenis working in the oil-rich countries. Net remittances are estimated to have risen from US$40 million in 1969/70 to more than US$1 billion in 1977/78. This large influx of remittances combined with a vigorous expansion of public development expenditures resulted in an increase of real GDP of about 8.5 percent annually from 1969/70 to 1976/77 and an even higher increase in the growth rate of GNP. By 1977/78, GNP reached a level of about YRls 14 billion, 1/ equivalent to an average per capita GNP of US$410 or more than twice the average per capita GNP in 1969/70 in real terms.

xi. Throughout the country, but mainly in the urban centers, there has been a marked propensity to invest remittances in labor intensive housing construction. The major cities, especially Sana'a, are consequently experiencing a construction boom that has created an intense demand for already scarce labor, thus inflating wages at all levels.

xii. The high levels of prosperity and full employment even among unskilled workers 2/ have resulted in high levels of income. The national median urban household income in 1979 was about YRls 1,600 (US$355) per month. The percentage of the population below this income level is 35, 45, and 60 percent in Sana'a, Taiz, and Hodeidah, respectively. The relative urban poverty threshold as computed in accordance with Bank methodology was US$79 (YRls 355) per capita per year in 1975. It rose to about US$120 (YRLs 540) in 1976. The absolute urban poverty threshold has been estimated at about US$450 (YRls 2,025) per capita per year in 1977. It has been updated to US$690 (YRls 3,105) for the end of 1978. About 33 percent of the total urban population is below this threshold. The percentage of the population below this threshold in the three major cities is 20, 30, and 45 percent for Sana'a, Taiz and Hodeidah, respectively.

Infrastructure

xiii. Almost non-existent until the early 1970s, urban infrastructure is now receiving increasing attention. Water supply and sewerage systems are currently being implemented in Sana'a and Hodeidah with the assistance of three IDA credits. A similar program in Taiz is being assisted by USAID.

xiv. Daily water consumption in Sana'a was estimated at about 10 lpcd in 1977 and is expected to rise to about 140 lcpd by 1985. Construction of the first water supply project has been completed, and it is estimated that about 45 percent of the city's population is now being served by individual connections. The ongoing house connection program is providing about 60 connections per day. About 8 percent of the city's population in the lowest income areas purchases water from street vendors at a high cost. Households in low income areas pay over six times the per liter price of water from street vendors than connected households.

1/ US$1 = YR 4.50

2/ Open unemployment was measured at only 5 percent of the labor force in the 1975 census.

xv. Sana'a has no sewerage system; older dwellings use seepage pits while more recent ones usually have septic tanks. Very often and particularly in low-income areas, sewage is simply spread on the ground resulting in a serious pollution problem in the upper aquifer from which the drinking water is extracted. The first phase of a sewerage system financed under an IDA credit will become operative in 1981 and will serve about 50 percent of the population, mostly in the old city.

xvi. In Hodeidah, about 30 percent of the population had been connected to the public water supply system by 1975. Domestic water consumption ranged from about 15 lpcd for the unconnected population to about 70 lpcd for the connected population. Private connections are not metered. In 1975, the unit cost of the water supplied to connected population was YRls 1.92/m^3 while those who purchased their water from street vendors paid up to YRls 20/m^3. In some squatter settlements which will not be served even after the current expansion program is completed, residents are now paying up to YRls 2.0/liter for drinking water brought from special wells. Sewage is usually disposed in pit latrines, cesspools and soakage pits and, in certain cases, dumped into the streets.

xvii. The absence of adequate infrastructure and basic services, particularly in low-income areas of the YAR's major cities, extends beyond the lack of water supply and sewerage facilities. For instance, electricity is available in Sana'a but connections are too expensive for low-income groups. In Hodeidah, most squatters have no individual electricity connections. Another feature common to low-income areas in the major cities is the lack of adequate vehicular and pedestrian access. The situation was further compounded by the lack of coordination among central and local government authorities as well as autonomous government agencies such as the National Water and Sewerage Authority (NWSA) and the Yemen General Electric Corporation (YGEC), in planning urban development and providing infrastructure and urban services. The recent creation of the Ministry of Electricity, Water and Sewerage is expected to improve the coordination among the above entities.

xviii. Almost no traffic management measures have been undertaken in the three major cities. Parking is indiscriminate and little attempt has been made to control or discourage parking in the city centers. Traffic signals have been installed at a limited number of intersections but only work intermittently on fixed time settings. Circulation schemes, traffic signs and markings are almost non-existent. As a result, most of the city centers experience heavy and nearly chaotic traffic and congested roads.

xix. Health care and education services although better in urban areas than in rural areas, remain inadequate. Health facilities are ill equipped and the lack of administrative planning often leads to inefficient utilization of the already limited number of facilities. Lack of equipment and instruction materials in schools is frequently reported. However, the major obstacle for the development of modern health and education is the severe shortage of trained and qualified personnel and teachers. The lack of staff has considerably limited the possible increase in enrollments and has often resulted in overcrowded classrooms in the major cities. Some schools are operating two to

three shifts with classrooms up to 100 students. The lack of qualified Yemeni teachers is acute. Nearly 50 percent of all primary teachers hold only a primary school diploma or its equivalent. Over 95 percent of secondary teachers are expatriates and increasing numbers of expatriates are now being employed in primary schools.

Housing Conditions and Policies

xx. Housing conditions in the YAR are generally good in comparison with other developing countries. Traditional materials and workmanship are of good quality and space standards are high. Overcrowding is less of a problem than in other countries. Much of this can be explained by a traditional system for land allocation and housing construction which has worked relatively well until recently. There is an increasing number of signs, however, that the system is strained beyond capacity and will not be able to meet the increased demand for housing foreseen for the coming decades. This problem is most severe for the lowest income groups who have only limited access to land, urban services and housing finance.

xxi. The lack of a formal land registration system in the YAR affects especially the low-income groups who can afford only government or religious land allocated to them through an informal and unrecorded system. Based on this sytem, low-income people in Sana'a and Taiz have acquired titles from the municipal governments which can nonetheless still be contested since plot boundaries are not recorded. The lack of an adequate land registration system in these two cities has often led to disputes about tenure especially among low-income groups. It has also resulted in frequent delays in construction, and has consequently contributed to construction price increases.

xxii. The informal land distribution system in Hodeidah differs from that in Sana'a and Taiz. Low-income groups are given dwelling permits instead of titles, resulting in a form of squatting tolerated by municipal authorities and even considered by them a normal process for residential development. About 70 percent of the households in Hodeidah have benefitted from this system which although flexible in the sense of being able to supply government land to the various income groups and administratively easy to implement, generates no revenue for the government and does not provide beneficiaries with full security of tenure. Settlements are still occasionally removed to make room for infrastructure works thus making households understandably reluctant to invest in permanent houses.

xxiii. The housing situation varies from city to city reflecting different cultural traditions as well as climatic and economic conditions. In Sana'a, due to relatively high levels of income, people have generally been able to afford housing of fairly good quality. The average plot size in low-income areas is about 100 m^2, while the average house size is about 60 m^2. There are virtually no squatter settlements per se 1/ in the capital city and

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1/ If squatting is narrowly defined by the absence of land title (formal or otherwise) in the hands of the squatters. Provision of infrastructure, however, is seriously deficient in these settlements.

overcrowding has so far been minimized (1.4 persons per room). However, the low level of overcrowding is depending on the willingness of about 15,000 male migrant workers to continue to leave their families in rural areas and live in groups of five to ten in rented shops. In the Tihama region, housing is of lower quality, particularly in rapidly, expanding cities such as Hodeidah where forty percent of the housing stock is reed huts.

xxiv. Building materials used in housing construction also vary from city to city. In Sana'a a large number of traditional building materials are used along with non-traditional materials such as hollow and solid concrete blocks produced locally. In the Tihama region, traditional materials are no longer produced. Hollow cement blocks are widely used.

xxv. The cost of building materials has escalated sharply since 1975 and particularly between 1975 and 1978. More recently, prices seem to have stabilized however, and in some instances, have even decreased from their 1979 peak. Available data indicate that the rise in the cost of cut stone has been especially high, rising over three-fold from mid-1975 and continuing to rise at a low annual rate of 6 percent during 1980. The cost of gravel and cement rose respectively by 150 and 75 percent from mid-1975 to mid-1979; but since then, their cost has dropped back to 1978 levels for a total increase over the 5-year period of 100 and 50 percent respectively. Other construction costs, in particular wages, have followed a similar path, growing at an annual rate of 38 percent between 1975 and 1979 with a recent rise at a more moderate 10 to 15 percent. Finally, total construction-cost has peaked in 1978 or early 1979. Thus, the cost of a typical house of smoothly cut stone which had increased almost four-fold, from YR800/m^2 in 1975 to YR3000/m^2 by mid-1978, has declined to YR2500/m^2 by late 1980. It is clear that the decline in construction cost has been more substantial than that of either labor or materials cost suggesting a decline in the excessive profit margins commonly found in the years of the remittance boom.

xxvi. The Government is very interested in developing the local building materials industry to increase the supply and to lower the cost of traditional as well as newer types of building materials such as ceramic tiles, terrazo tiles, lime-silica bricks and hollow concrete blocks. The Government is encouraging the private sector to take a large role in the building materials industry, but it is prepared to participate in joint ventures or promote projects on its own where appropriate.

xxvii. The main source of housing finance for the private sector is the Housing Credit Bank which lends to individuals for periods of up to 15 years at rates averaging 9%. No loans have yet been made to low-income groups who have to finance their housing from personal savings and remittances from abroad when possible. The Housing Credit Bank could expand its operations to low-income groups if additional long-term funds were available.

xxviii. The Government is aware of the existing and potential urban problems and feels a great need to act on them before they worsen. The Government is contemplating stopping the informal land allocation system until a new system is implemented. It is hoped that a new system of land use control and inter-institutional coordination can replace the informal land development system. However, it is unlikely that such a system can be initiated soon enough to replace the supply of new land for low-income families. Faced with increasing costs for labor-intensive traditional Yemeni housing construction, the Government has turned to imported building materials and techniques. Given the high costs of labor in the YAR, some of these techniques may well be cheaper in the short-run. There are, however, many reasons for retaining the traditional Yemeni construction but modifying it to increase its efficiency and limit cost inflation.

A Strategy for Urban Development in the Yemen Arab Republic

xxix. The Yemen Arab Republic is not yet faced with urban problems of an overwhelming scale. Nevertheless, there are several specific problems related to urban expansion which can already be identified: (i) The supply of land for new urban development, especially land which can be conveyed with secure tenure to low-income groups has become more constrained. (ii) The provision of urban infrastructure is generally inadequate, especially to low-income groups. (iii) Housing construction and building materials costs have risen sharply in recent years which have placed an increased financial burden particularly on low-income groups who require adequate shelter. (iv) Institutional housing finance is very limited and is virtually, unavailable to low-income groups, and (v) Employment at all levels is characterized by low levels of productivity. Technical and managerial skills are particularly scarce.

xxx. The principal element of an urban development strategy for the YAR must be the creation of a viable administrative system. This will require a vast improvement in the technical capacities of all types of administrative staff. Training programs will have to be applied at all levels, and the salaries of public employees will have to be raised to be competitive with the private sector. Moreover, in the future, many of the responsibilities for urban development will have to be delegated by the Central Government to the municipalities. This is a logical long-term strategy because of the expected regional structure of urban development and because of the relative efficiency of providing many urban services at the local level.

xxxi. The above strategy is clearly a long-term and ambitious undertaking. A more immediate action plan is recommended which will focus on institutional development in the urban sector. The following types of institutional and managerial improvements are included in the recommended action plan:

(1) Land Development and Registration. An institutional capacity is required to undertake land acquisition and development, especially for new low-income settlements, and to carry out community improvement programs.

(2) Municipal Administration and Finance. An improved municipal administration system is required to ensure the regular provision and maintenance of urban services. The experience of the LDAs in managing certain services should be used and ways of associating the LDAs with the municipalities should be investigated.

(3) Building Materials. There is a need to review more closely the technical and economic characteristics of both traditional and imported building materials actually used or proposed to be used in the Yemen Arab Republic. This could also involve testing of materials and construction methods on an experimental basis in the context of carefully selected projects.

(4) Housing Finance. An improved institutional structure is required which is capable of providing housing finance to a wide range of income groups. This will require adequate interest rates and collection procedures to recover the capital invested in new housing, land and infrastructure. At the same time, eligibility criteria should be flexible enough to meet the needs of even the lowest income groups.

INTRODUCTION

1. During the last few years far reaching political developments and economic trends in the Yemen Arab Republic have combined to create a unique setting for urban development. Political consolidation of the country has come rapidly since the 1962 Revolution which ended the feudal rule of the Imam 1/ and opened the country to the outside world after a long civil war that lasted until mid-1970. The organizational framework of a modern government has been established and tribal divisions are gradually disappearing.

2. Economic changes have come just as rapidly with a profound impact on the well-being of most of the country's citizens. With political integration came the first efforts of central planning with the Three-Year Development Program (1973/74-1975/76) and new investments in physical infrastructure and telecommunications. In addition to investments in rural development and social services, the first major investments were made in urban water supply, sewerage and electrification. Industrialization was started, albeit on a small scale.

3. More recently, especially since the quadrupling of international oil prices at the beginning of 1974, there has been an unprecedented increase in incomes based mainly on remittances from Yemeni workers in Saudi Arabia and the Gulf States. At least 421,000 of an estimated 5.7 million inhabitants of the YAR lived as short term migrants in the Gulf states alone (see para. 8). Remittances from migrant workers rose from about US$40 million in 1969/70 to about US$1 billion in 1977/78. As a consequence, per capita GNP has more than doubled since 1969/70 to a level of about US$410 2/ in 1977/78. 3/ Data on GNP are not available for the years since. However, remittances peaked in 1977/78 and have since declined. Hence, though GDP has continued to grow in real terms it is likely that per capita GNP has stagnated and possibly even declined in real terms. Finally, the considerable variations in remittances over the past 5 years do not indicate similar variations in the number of short term migrants abroad. To the doubling in remittances between 1975/76 and 1977/78 corresponds a similar increase in Saudi Arabian wages (see Annex 3) and to the subsequent remittance stagnation corresponds a wage rate stagnation in Saudi Arabia. Hence a plausible scenario is that the number of short term migrants has been constant between 1975 and the present, at between 400,000 and 500,000. 4/

1/ Traditional religious and political ruler.

2/ On the basis of recent revisions that applied special methodology for deflating the national account series and for treating worker remittances.

3/ Based on a total Yemeni population of 5.95 million including 421,000 short term migrants, see para. 21.

4/ For a more detailed discussion see IBRD, "Manpower Development in the YAR", 1980, and references in footnote 3, p. 3, ibid.

4. The evidence of recent changes is most visible in the urban areas. There has been an urban economic boom in construction, commerce, finance and banking, industry and government services, fueled by the cash remittances, which has caused urban populations to grow rapidly. The combined population of the seven largest cities increased by between 6 and 8 percent per year between 1975 and 1979. During this period, the population of cities with over 10,000 inhabitants increased from 7.0 to 8.5 percent of the total resident population. This growth has been beyond the capacities of existing urban infrastructure, housing and services. Although the new prosperity has virtually eliminated urban unemployment and inflated the wages of even unskilled workers, it has created new problems which require urgent attention.

5. The increases in income and money supply have not been accompanied by a comparable increase in local production. This has caused severe inflation, especially in the costs of housing and urban services. The problem of inflation and low productivity has been exacerbated by the severe shortage of manpower of virtually all types of skills. The problems related to urban growth could reach even more serious proportions in view of the expected high rate of urban growth in the foreseeable future and the very limited administrative capacity to deal with it.

6. The three cities of Sana'a, Hodeidah and Taiz account for almost 85 percent of the combined populations of towns and cities with over 10,000 inhabitants. Together they account for more than 90 percent of all economic establishments with 10 or more employees. Because of this concentration this report will focus on these three cities. For a longer term strategy, however, the possibility of growth in other cities must be taken into account.

7. This report examines urban growth trends in the YAR and the existing constraints in the present system for the administration and financing of urban development. Urban employment and incomes are then analyzed. The systems for delivering urban infrastructure and housing are described, and the potential of these systems for meeting urban growth trends is analyzed. Finally, a strategy is presented which would improve service delivery and begin to construct an urban administration system which would be responsive to the long-term needs of the country.

8. Much of the data used in this report is imprecise and tentative. This is also true of some of the demographic data. The YAR undertook its first population and housing census in February 1975. It found a de facto enumerated resident population of 4,540,230. Adjustments for the undercount of selected population group brings the total resident population to 5,258,530, according to government estimates (see Annex 1). Independent estimates by the Swiss Technical Cooperation Service (STCS) put the undercount much lower however, for a total resident population of 4,705,336. This report accepts the official government estimates of the total resident population. For urban and regional detail final census figures of the enumerated population are used, supplemented by STCS data where appropriate. Similar uncertainty exists with regard to the number of Yemenis abroad on census night, put at 1,234,000 by official government estimates. This number

includes both long term emigrants and short term migrants who account for most of the remittances. This report uses as an estimate of the short term migrants the 421,000 Yemenis that were registered in the Gulf states of Saudi Arabia, Kuwait, the United Arab Emirates, Bahrein and Qatar. There are no time series data to provide accurate indications of population growth, external and internal migration, and changes in the labor force. Estimates of urban growth and income distribution depend heavily on mission observation and analysis, including the interpretation of aerial photographs of the largest cities.

I. URBAN GROWTH IN THE YEMEN ARAB REPUBLIC

9. Rapid urbanization is a very recent phenomenon in the YAR. Until the Revolution of 1962, urban areas served as regional market and craft centers to their relatively isolated agricultural hinterlands. Although the political consolidation and economic prosperity of recent years have been marked with rapid population growth in a few principal large cities, the vast majority of the YAR's population still lives in a rural setting. According to the 1975 census, only about 7.5 percent of the country's resident population lived in the 6 large towns with over 10,000 inhabitants (see Map IBRD 14497). A further 3.6 percent of the population lived in medium-sized towns of 2,000 to 10,000 inhabitants and 2.3 percent lived in small towns of 1,000 to 2,000 inhabitants. Table 1 shows the urban population in the context of national demographic statistics. A breakdown of the 1975 populations of the six largest cities is shown in Table 2.

A. The Regional Pattern of Urban Growth

10. The principal urban centers of the YAR are located in the main agricultural areas of the country, which are in the Governorates of Sana'a, Ibb, Taiz and Hodeidah which account for about 80 percent of all agricultural land and over two-thirds of all residents. Within this area recent urban development has been fairly evenly distributed. A widely dispersed rural population, rugged topography and traditions of regional autonomy, have combined to prevent the overwhelming primacy of any one city. Primacy has also been avoided because of the diversity of economic functions among the major cities.

11. Sana'a has developed as the political and administrative center of the country. Although Taiz was the principal capital of the Imam until 1962, Sana'a became the center of the revolutionary conflict of the late 1960's and became the capital after the Revolution. Since 1970, Republican governments have successively consolidated their control from Sana'a over the rest of the country. Government administration remains the economic base of the city. Table 4, Annex 1, shows that 20,100 of the country's 31,300 civilian

Table 1: THE URBAN POPULATION, TOTAL AND AS A PERCENTAGE OF NATIONAL POPULATION (1975)

	Enumerated, 1975 Census[1]		Estimated by Swiss Team[2]	
Total resident population	4,540,278		4,705,336	
of which in 7 (6) cities with over 10,000 inhabitants[3]	347,728	(7.7%)	354,742	(7.5%)
of which in 46 (45) medium-sized towns of 2,000-10,000[3]	166,504	(3.5%)	169,665	(3.6%)
of which in (83) small towns of 1,000-2,000	n.a.		110,026	(2.3%)
of which in (600) villages of 500-1,000	n.a.		403,098	(8.6%)
remainder in rural settlements of less than 500	n.a.		3,680,508	(78.0%)

1/ Source: Statistical Offices of the CPO, unpublished 1975 Final Census Results.

2/ Source: Final Report on the Airphoto Interpretation Project of the Swiss Technical Co-Operation Service, Berne, 1978.

3/ The Swiss Team does not count certain settlements as urban that are considered urban by the Census. The number of towns in parenthesis represents the Swiss Team estimate, the other number represents a count based on CPO data.

Table 2: URBAN CENTERS WITH MORE THAN 10,000 INHABITANTS (1975)

	Enumerated, 1975 Census[1]		Swiss Team Estimate[2]		
	Population	Sex Ratio Male/Female	Population	Sex Ratio Male/Female	Emigration Rate[3]
Sana'a	135,625	1.33	138,625	1.32	2.2
Hodeidah	72,895	1.27	82,724	1.50	2.9
Taiz	79,720	1.37	81,001	1.32	2.8
Dhamar	19,540	.94	20,051	1.05	4.0
Ibb	17,496	1.10	19,638	1.16	3.2
Beit el Fagih	12,033	.97	12,703	1.02	4.1
Al Beida	10,419	.83	n.a.		
TOTAL	347,728		354,742		

Table 3: SETTLEMENTS WITH BETWEEN 3,500 AND 10,000 INHABITANTS WITH A SEX RATIO HIGHER THAN 1.05 (with the exception of garrison border towns Ratabah and Rida) (1975)

	Enumerated, 1975 Census[1]		Swiss Team Estimate[2]		
	Population	Sex Ratio Male/Female	Population	Sex Ratio Male/Female	Emigration Rate[3]
Hajjah	3,294	1.19	5,988	1.07	0.2
Al Qaidah	7,269	1.15	5,709	1.13	2.7
Amran	5,203	1.14	5,135	1.13	3.7
Saadah	3,806	1.11	4,380	1.11	2.3
Khamir	3,465	1.13	3,558	1.09	2.4
Al Makha	3,824	1.16	n.a.		
TOTAL	26,861		24,770		

1/ Source: Statistical Offices of the CPO. Unpublished 1975 Final Census Results.

2/ Source: Final Report on the Airphoto Interpretation Project of the Swiss Technical Co-Operation Service, Berne, 1978.

3/ The number of emigrants living abroad stated as a percentage of total resident and emigrant population.

government employees were in Sana'a Governorate in 1975. Growth of the government sector has especially stimulated construction activities. Forty-four percent of construction licenses issued in 1975 in the YAR were in Sana'a Governorate. Commerce and service sector activities are also important in Sana'a.

12. Hodeidah is the main port and the principal industrial city. The only other port of significance in the YAR is Mukha which has a more limited capacity and less adequate transportation links to the interior of the country. The development of Hodeidah has been stimulated by the opening of the paved road to Sana'a in the 1960's and, more recently, by the reopening of the Suez Canal. An IDA credit is now being used to expand port facilities in Hodeidah to meet the projected requirements up to 1985. The dominance of Hodeidah in the country's industrial sector is shown in Table 4, Annex 1. Almost 60 percent of economic establishments with 10 or more employees were in Hodeidah Governorate as were over 50 percent of the loans granted by the Yemen Bank for Reconstruction and Development (YBRD) in urban areas.

13. Taiz was the traditional capital of the Imam prior to the revolution of the 1960's. It also has a long tradition as a trading center due to its position on the major trade routes to Aden and Mukha. In recent years its development as a commercial and service center has been stimulated by a rich agricultural hinterland and a relatively abundant water supply. Many entrepreneurs from Aden have relocated in Taiz in recent years which has further vitalized its economy. In contrast to Sana'a and Hodeidah, however, its growth is constrained by a lack of adequate contiguous land suitable for urbanization.

14. The cities of Ibb and Dhamar have also developed as agricultural service centers to relatively fertile agricultural areas.

15. The pattern of government investment, particularly the development of the transport network which now links the main urban centers in a triangle, has tended to reinforce the traditional distribution of urban development. Only in recent years have essential government services and roads been extended to the northern and eastern Governorates of Hajjah, Saadah, Mahrib and Beida. The five cities with the most growth potential in addition to those in Table 2 are shown in Table 3. These are cities with sex ratios of over 1.05 and populations of over 3,500 in 1975. The high sex ratios indicate large numbers of migrants. Although these cities have growth potential, their absolute size remains small in comparison with the larger cities.

B. The Determinants of Present and Future Urban Growth

16. There are no reliable time series or other data from which to estimate present and future urban growth in the YAR. Nevertheless, there are several indications that the largest cities are expanding rapidly and that they can be expected to continue growing at a rapid pace for the foreseeable future. The principal determinants of this growth are discussed below:

Table 4: SOME INDICATORS OF REGIONAL DEVELOPMENT, 1975

	Governorates					
	Sana'a	Hodeidah	Taiz	Ibb	Other	Total
Enumerated resident population (000)	819	673	878	789	1,381	4,540
Enumerated urban population /1 (000)	136	73	80	17	20	325
Enumerated urban population /1 (%)	17	11	9	2	1	7
Economic establishments with 10 or more employees	84	270	81	14	18	467
Loans granted by the IBRD in urban areas (1976)	131	246	96	12	1	486
Civilian government employees (000)	20.1	3.0	3.6	1.5	3.1	31.3
Construction licenses (%)	44	19	19	5	13	100

/1 Towns and cities with 15,000 inhabitants or more, see Table 3 of Annex 1

Source: World Bank Country Economic Mission Report, 1978, and Tables 2 and 3 of Annex 1

(1) Investment and Economic Growth

17. Cash incomes from workers' remittances (US$1 billion in 1976/77, see Table 4, Annex 3) have been the largest source of funds for modern sector development. GDP in the non-agricultural sectors of construction, finance and banking, trade and industry has grown at an average rate of nearly 13 percent per annum. In contrast to these largely urban based sectors, agricultural GDP has experienced negligible growth for several years. The share of agriculture in total GDP fell from 53 percent in 1972/73 to about 37 percent in 1976/77, a level at which it has since stabilized (see Table 7, Annex 1).

18. Although the remittance economy has stimulated most urban based modern sector activities, it has had its greatest impact on housing investment and domestic commerce. Gross national savings reached 23 percent of GNP in 1976, but due to the absence of an effective tax system, the government has had limited success in capturing these largely private savings to finance essential public investments. Financial institutions have also failed to fully utilize the potential of private savings to increase long-term productive investment.

19. The current Five-Year Plan (1976/77-1980/81) has no clearly articulated urbanization and housing policies. There is no regional investment policy and practically no data base with which to plan regional investments. Due to the weakness of government institutions and the lack of a planning capacity, many investment projects are made in response to political pressures. The government is still endeavoring to consolidate its control throughout the country and it has few means to influence private investments. Hence, the actual investment distribution bears little resemblance with that planned. Table 5 shows that according to the Five-Year Plan a large percentage of public investment was to be concentrated in urban based sectors, and the housing sector was to obtain 13 percent of gross fixed capital formation (GFCF). However, as Table 6 suggests, urban areas may have received a larger share and the rural/agricultural sectors a smaller share than planned. The greatest deviations have occurred in the housing sector, whose share in GFCF moved from an extraordinary 37.0 percent in 1975/76 to an even higher 43.3 percent by 1977/78. This high a percentage reflects the importance Yemenis attach to housing, but it is also indicative of severe imbalances in the investment structure. With an extremely low industrial investment share of between 8 and 14 percent, Yemen relies for jobs on Gulf countries and their demand for Yemeni labor. This lack of industrial investment may be aggravated by the inability of financial institutions to capture private savings and remittances. Given their limited trust in these institutions most Yemenis see residential construction as the only viable investment alternative.

Table 5: SECTORAL ALLOCATION OF INVESTMENT IN THE FIVE YEAR PLAN (1975/76 to 1980/81)

	YR million	Percent
Total Fixed Capital Formation	15,971	100.0
a. Primarily urban based sectors	4,543	29.0
Manufacturing	(1,998)	(12.0)
Electric Power and Water	(1,373)	(9.0)
Construction	(451)	(3.0)
Trade and Banking	(721)	(5.0)
b. Mixed urban/rural sectors	8,978	56.0
Public Administration	(1,963)	(12.0)
Transport and Communications	(4,925)	(31.0)
Housing	(2,090)	(13.0)
c. Rural sectors	2,450	15.0
Agriculture	(2,274)	(14.0)
Mining	(174)	(1.0)

Source: C.P.O Five Year Investment Plan and Mission Estimates.

Table 6: GROSS FIXED CAPITAL FORMATION 1975/76 to 1977/78, in 1975/76 Prices

	Fiscal Year					
	1975/76		1976/77		1977/78	
	YR million	%	YR million	%	YR million	%
Private Sector	519	67.1	1,142	78.9	1,208	73.1
Public Sector	254	32.9	305	21.1	444	26.9
Total GFCF	773	100.0	1,447	100.9	1,652	100.0
Housing	286	37.0	590	40.8	716	43.3
Transport	232	30.0	471	32.6	492	29.8
Industry	61	7.9	209	14.4	189	11.4
Agriculture	106	13.7	76	5.3	157	9.5
Other	88	11.4	101	7.0	98	5.9

Source: World Bank Yemen Arab Republic Economic Memorandum, Report No. 2856-YAR, Oct. 23, 1980 (Table 3).

(2) National Population Growth and Emigration

20. There are no reliable records of births and deaths from which to project the growth of Yemen's population. Recent official estimates of crude birth and death rates of 45 and 20 per 1,000, respectively, indicate an approximate annual natural population growth rate of 2.5 percent. 1/ Most estimates of present and future natural population growth rates assume that both death and birth rates will remain high for several years and that the population will continue to grow at about 2.5 to 2.9 percent per annum.

21. The level of emigration for work abroad is one of the most striking characteristics of the country. Between 8 and 14 percent of the population lives outside the country as short term migrants, depending on the migration estimate used (see Table 1, Annex 1). Approximately 263,000 of the 421,000 1975-migrants to the Gulf states were employed, representing 19 percent of the YAR's total 1975 labor force of 1.4 million 2/. Because of the preponderance of males among migrants, the YAR has a very low ratio of males to females (0.91 in 1975) which is especially low in many rural areas. 3/ The level of temporary, short term migration has remained roughly constant since 1975, somewhere between 400,000 and 500,000. Extrapolation of these key population parameters allows one to bracket the development of the future resident and total population, as shown in Table 7. Thus based on government estimates of a 2.5 percent natural population growth rate in 1975 and assuming this rate

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1/ This compares with earlier, more detailed 1975 vital statistics from the Central Planning Office relevant to the 1970-75 period, which suggest a much lower natural population growth rate of 1.9 percent, arrived at as follows:

Crude birth rate	47.3 (per 1,000)
General fertility rate	217
Sex ratio at birth	104.3 (m/100 f)
Crude death rate	28.7
Life expectancy at birth:	
Males	35.7
Females	38.3
Infant mortality rate:	
Males	174
Females	142
Total	159
Net annual population increase	18.6 (per 1,000)

2/ The economic benefits of the high levels of remittances from these workers, as well as the disadvantages of having such a large percentage of the work force abroad, are discussed in Chapter III.

3/ World Bank Manpower Development in the Yemen Arab Republic, Report No. 3181-YAR, October 27, 1980, p. 19.

increases to 2.9 percent as the mortality rate drops, Yemen's total population will almost double by the year 2000. Given a stable level of 450,000 short term migrants after 1980, Yemen's resident population will be 10.6 million by the year 2000. An alternative low projection is based on earlier government estimates of a natural population growth rate around 2.0 percent (see para. 20). If such a rate prevails to the year 2000, Yemen's resident population would be about 8.9 million, assuming again unchanging levels of short term migration. Possible scenarios for emigration and urban development beyond 1985 are presented below (para. 28).

Table 7: ILLUSTRATIVE POPULATION PROJECTIONS (in 1,000)

	1975	1980	1985	1990	1995	2000
High Projection						
Total National Population 1/	5,680	6,448	7,338	8,376	9,606	11,088
Average Annual Growth Rate (%)		2.57	2.62	2.68	2.78	2.90
Total Resident Population 2/	5,259	5,998	6,888	7,926	9,156	10,638
Low Projection						
Total National Population 1/	5,680	6,271	6,923	7,644	8,440	9,318
Average Annual Growth Rate (%)		2.00	2.00	2.00	2.00	2.00
Total Resident Population 2/	5,259	5,821	6,473	7,194	7,990	8,868

1/ Does not include permanent migrants.
2/ Assumes 421,000 short term migrants in 1975 and 450,000 thereafter.

(3) Rural-Urban Migration

22. In spite of the low ratio of men to women nationally, there is a high ratio of men to women in the principal cities (see Table 8). This is a sign of current high rates of temporary rural-urban migration among male Yemeni. Assuming average sex ratios (108 males to 100 females) and accounting for some migration of city workers abroad, internal rural urban migration by 1975 accounted for 70,000 to 80,000 of all urban residents in cities larger than 15,000, or almost 25 percent of their residents.

Table 8: THE RATIO OF MALES TO FEMALES IN THE THREE PRINCIPAL CITIES (1975)

Sana'a	1.33
Hodeidah	1.27
Taiz	1.37

Source: Table 3, Annex 1.

23. Large numbers of male Yemeni typically live together in temporary residences in the cities while maintaining their families in rural villages. This type of living as opposed to emigration to Saudi Arabia, appears to be a way of improving family welfare rather than accumulating large amounts of savings. This is because the higher income earned in cities is partly eroded by the higher cost of subsistance but is still attractive enough to encourage rural-urban migration.

24. It is probable that some of the poorest workers would prefer to move their families to the cities, but cannot afford to do so. Because of the extended family structure and the cultural importance of family privacy, families do not tend to crowd together in low-income areas as they might in other countries (para 145). Many families also prefer to maintain close personal ties and continuing land tenure in rural areas. There are, thus, conflicting trends of large-scale movements to the cities. The possible influence of these trends on future urban development is illustrated below.

C. Possible Scenarios for Urban Growth

Short-and Medium-Term Urban Growth

25. Table 9 shows estimates of the urban and national population growth during the recent 1975-80 period, as well as projections into the medium (1985) and long term (year 2000) future. The projections are based on 1975 estimates of the urban (and national) resident population adjusted for under-enumeration. The 1980 population estimates for urban areas with a population above 10,000 are based on an examination of aerial photographs and an analysis of building permits.

26. As is seen from Table 9, recent growth has been most rapid in Sana'a, Hodeidah and Ibb. Sana'a is estimated to have grown to between 198,000 and 211,000, or at a rate between 7.6 and 8.8 percent. 1/ Hodeidah's growth

1/ Sana's construction permits imply a minimum annual growth rate of between 6.5 and 7.4% depending on assumed completion lags. The actual rate will be higher as some construction is done without permit.

has been somewhat slower, between 5.4 and 7.5 percent. 1/ Both cities play important but different roles in the country's development. The rapid growth of Sana'a is based on its role as the nation's capital, its developing importance as an administrative and service center, its superior air linkages to the rest of the world, and its better climate and amenity level. Instead, Hodeidah's relative strength are its port facilities, its developing industrial base and the great availability of cheap desert land for housing and industrial development. Ibb's recent growth has possibly exceeded that of Sana'a. The evidence here consists mainly of construction permit data 2/, and plausibility arguments. Ibb's growth in the past has been hindered by its closeness to Taiz which, as the nation's former capital, dominated the region. Ibb in 1975 was only one quarter the size of Taiz despite the fact that both towns are the center of an agricultural hinterland of similar population size. As Taiz' service functions are now diminished, Ibb for some time will grow more rapidly than Taiz. The relatively slow growth of Taiz (5.0 to 5.5 percent per year) is also partly due to the lack of land which can be easily developed, close to the city center. The average annual rate of growth of the entire urban population (in cities with a population of 10,000 or more) was between 6.1 and 7.7 percent. Table 9 also shows rough estimates of the current growth rates in secondary cities and rural areas. It is estimated that secondary cities are growing, on the average, about twice as fast as the population of rural areas. Growth is highest in the cities listed in Table 3 which are recipients of considerable rural urban migration. The estimated annual growth rate of the resident population (2.1 percent to 2.7 percent) is higher than the natural population growth rate (2.0 percent to 2.6 percent) because the level of migration between 1975 and 1980 is estimated to have remained nearly constant.

27. Although even these short-term urban growth projections must be interpreted with caution, they do indicate the probability that the largest cities will continue to grow at high rates during the next five years. The absolute urban population growth, about 6,500 households per year, will be high in relation to the past. As described in the following chapters, the capacity of the cities to deal with this growth is already extremely limited.

Long-Term Growth

28. The YAR is only in the very early stages of urbanization. In 1975, 78 percent of its workers were employed in agriculture, and only 11 percent in production-related occupations. Eighty-seven percent of the population is illiterate, a serious obstacle for urban job requirements. While it is safe to say that the YAR will become more urbanized, the rate of future urbanization

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1/ Hodeidah construction permits imply a minimum annual growth rate of between 2.1 and 2.5 percent. However, in the past up to 60 percent of all construction in Hodeidah was done informally and without permit. This and analysis of aerial photos suggest the higher rates.

2/ Ibb's construction permit data imply a minimum growth rate of between 7.9 and 9.2 percent.

is difficult to predict. Its major determinants are the natural rate of population growth, the capacity of the agricultural sector to absorb future labor growth, industrial sector policies pursued by the national government, and the rate of short term migration of Yemeni labor. Higher population growth, lower emigration rates, and decreased labor absorption in agriculture are all distinct possibilities and point to increasing urban growth pressures.

29. The demand of the Gulf states for Yemeni labor is largely beyond the control of the YAR. Since the mid-70s, the level of short term migration has remained roughly constant. The steep rise of remittances that fueled a residential construction boom through most of the 1975-78 period came to a halt in 1978 and remittances have since fallen in nominal terms. A substantial rise in future short term emigration is unlikely. The difference in urban wages between the YAR and Saudi Arabia has narrowed in recent years. From 1975 to 1978 wages of unskilled laborers rose three-fold in Saudi Arabia and four-fold in urban Yemen (see Annex 3). Large numbers of Pakistani, Koreans and other nationalities are being used in unskilled jobs which has reduced the demand for Yemeni workers. Many foreign contracts are now being required by the government of Saudi Arabia to supply labor from their country of origin which will eliminate the need for direct hiring in Saudi Arabia. Yemeni used to be allowed relatively free entry and exit in Saudi Arabia, but they have been required since 1978 to have entry visas and work permits. Under the new regulations, employers are liable for the correct documentation of their workers. Moreover, the YAR since 1979 requires from all male emigrants evidence of having completed military service prior to issuing a passport. Finally, Yemeni labor is mostly low skilled and there is some evidence that labor importing Gulf states are shifting their demand towards higher skill levels. 1/ All of this indicates that short term migration is not likely to increase substantially, and cannot be counted on to alleviate urban growth pressures.

30. Despite the slowdown in emigration considerable labor shortages remain in urban as well as rural areas. It has been estimated that in early 1980 more than 17,000 foreigners worked in the YAR of which some 6,000 were employed by the public sector. This also includes semiskilled labor, particularly in the construction and service sectors. There is also strong evidence that agricultural production has slowed because of labor shortages. Following the rapid growth in wages, marginal land has remained uncultivated and traditional crops have been dropped in favor of higher value crops that require less labor inputs, and necessary maintenance work is neglected. Despite this evidence of a continued labor shortages, the long run concern must be with a possible labor surplus. The future ability of the YAR to absorb its labor growth cannot be taken for granted. There is a real danger that the present labor shortage will seriously impair the capability, particularly of the agricultural sector, to absorb labor in the future.

1/ I. Serageldin and J. Socknat "Migration and Manpower Needs in the Middle East and North Africa, 1975-85", Finance and Development, December 1980.

31. The two scenarios sketched in Table 9 illustrate the likely low and high growth limits for the long term development of the urban areas and the nation. Emigration levels in both cases are assumed constant after 1980, so that the national resident population grows at 2.1 percent in the "low" case and at rates above 2.7 percent in the "high" case (see para. 21 and Table 7). As for the urban areas, both scenarios outlined in Table 9 assume high growth rates for Sana'a, Hodeidah, Taiz and Ibb. Sana'a and Hodeidah in particular continue to enjoy the advantages they held in the 1970s, though indications are that Sana'a may eventually face serious water supply limitations, slowing its relative growth under the high growth scenario. Smaller urban areas generally grow at lower rates. This is so because even the largest cities in Yemem will remain too small to provide adequate support services for most industries. There will therefore be a tendency to build up the larger, more productive cities first. On the other hand the growth rates of the smaller and secondary cities are likely to eventually rise, as increased government services make these cities more desirable and as rural trade and service needs increase. Also, particularly under the high growth scenario, some of the pressure of urban growth may eventually fall on the secondary cities. A pattern of less concentrated urban growth is more likely in the YAR than in other developing countries because of several peculiar geographic and social characteristics. The country has a rugged, mountainous terrain which divides it into many historically independent regions. This regionalism is accentuated by the diversity of tribes and clans in the country and the importance of local family ties. The major source of employment will still be in agriculture for some time and much of the secondary and tertiary employment will be closely related to it.

32. In summary, high demographic pressures for urbanization are likely to develop over the medium and long term. At present only about 8.5 percent of the population lives in urban areas (population greater than 10,000), but this percentage will have increased to between 19 and 21% of the year 2000 (not counting currently smaller urban areas that grow larger than 10,000). Given the intense regional tradition of the country, a significant part of total growth is likely to take place in secondary cities and towns. This implies that the system for urban administration must not only be prepared to face a serious quantitative problem, but it must also have the flexibility to respond to regional patterns. The government is seriously concerned about the problems related to urban development and is determined to give them a high priority. At the same time, the government is also concerned about the need for improved regional development. Sixty percent of hospitals and 62 percent of the health centers are in the five main cities. Over 90 percent of university, technical and secondary educational facilities are in the main cities. Primary schools are distributed more evenly, but rural areas frequently lack qualified teachers and often have reduced curricula. Although there is no system for planning regional investment (see para 19), there is now a deliberate policy of providing improved health centers, schools and water supplies (i.e., part of public administration expenditure) in smaller towns. There has also been a large investment during the past few years in rural feeder roads which link previously inaccessible villages to urban areas.

Table 9: Illustrative Projections of the Urban Resident Population, 1975-2000

		Low Estimates/Projections						High Estimates/Projections					
	1975 Adjusted Resident Population	1975-80 Annual Growth Rate (%)	1980 Absolute	1980-85 Annual Growth Rate (%)	1985 Absolute	1985-2000 Annual Growth Rate (%)	2000 Absolute	1975-80 Annual Growth Rate (%)	1980 Absolute	1980-85 Annual Growth Rate (%)	1985 Absolute	1985-2000 Annual Growth Rate (%)	2000 Absolute
Sana'a	138,625	7.6	198,000	6.5	271,300	6.0	650,200	8.8	211,000	8.0	310,000	6.0	742,900
Hodeidah	82,724	5.4	107,600	8.0	158,100	8.0	501,500	9.0	118,800	9.5	187,000	9.5	729,500
Taiz	81,001	5.0	103,400	5.0	132,000	5.0	274,400	6.6	111,500	6.0	149,200	6.5	383,700
Dhamar	20,051	5.0	25,600	5.0	32,700	5.0	68,000	5.5	26,200	5.5	34,200	7.0	94,400
Ibb	19,638	8.0	28,900	7.0	40,500	7.0	111,700	10.2	31,900	9.0	49,100	9.0	178,800
Beit al Fageeh	12,703	3.5	15,100	3.5	17,900	6.0	42,900	4.5	15,800	5.0	20,200	6.5	52,000
Al Beida	11,088	3.5	13,200	3.5	15,700	3.5	26,300	6.5	15,200	4.5	18,900	4.5	36,600
Total Urban Population (over 10,000 residents in 1975)	365,830	6.1	491,800	6.3	668,200	6.3	1,675,000	7.7	530,400	7.7	768,600	7.3	2,217,900
Population in 9 Towns of 5,000-10,000 in 1975	61,144	3.5	72,600	3.5	86,200	5.0	179,200	5.5	79,900	6.0	106,900	7.5	316,300
Population in 38 Towns of 2,000-5,000 in 1975	113,888	3.0	132,000	3.0	153,000	4.0	275,500	3.6	135,900	4.0	165,300	5.5	369,000
Population in Rural Settlements of Less than 2,000 in 1975	4,717,716	1.7	5,124,600	1.7	5,565,600	1.3	6,738,300	2.2	5,251,800	2.2	5,847,200	1.9	7,734,800
YAR Resident Population	5,258,578	2.1	5,821,000	2.1	6,473,000	2.1	8,868,000	2.7	5,998,000	2.8	6,888,000	2.9	10,638,000

II. URBAN ADMINISTRATION AND FINANCE

A. The Urban Administrative Setting

33. The Yemen Arab Republic is divided into eleven governorates, each of which is administered by a governor who is a political appointee. The municipalities within governorates are headed by "Director Generals" who are also appointed by the central government. This highly centralized structure is reflected throughout the urban administration.

34. The Central Planning Organization (CPO) has the responsibility for coordinating national urban development policies with broader national development strategies. The Ministry of Municipalities and Housing (MMH) has the responsibility for the formulation of national urban and housing policies. There are ambiguities in the division between central and local administration, but local municipal offices are generally closely controlled by, and are financially dependent on the central level of the Ministry. Since June 1979 there also exists a municipal council in each governorate capital that represents the urban population of the governorate. Two-thirds of the council members are elected and one-third are appointed. The role of these councils is at present limited to that of advising the MMH (see also para. 52). Local initiative is shared with the independent Local Development Associations which organize local development projects largely with local funding. The provision of water and sewerage and of electricity is the function of semi-autonomous public utility companies (see Chapter IV).

35. The functioning of this administrative structure is seriously constrained by the shortage of qualified personnel at all levels of government and especially in urban sector agencies. Before 1962, the system of government was largely feudal. The entire organization of the administration, including appointments, was handled by the Imam on a personal basis. Following the Revolution of 1962, successive governments tried to establish a modern administration, and since the end of the Civil War in 1970 there has been considerable progress. The number of government employees has increased from about 4,000 in 1962 to 31,300 in 1975. However, there is an extreme shortage of qualified personnel. In 1975, only 2 percent of government employees had university education. At least 8,000 public service positions still remain vacant; the largest number of vacancies is in the technical departments at both the central and local levels. There is a competition for qualified staff among departments. It is even more difficult to recruit qualified personnel for the governorate and local levels. Public sector salaries have not kept pace with inflation, especially with the cost of housing, which has made it difficult for government to compete with the private sector for qualified personnel.

B. The Central Planning Organization (CPO)

36. The Central Planning Organization, a high level planning agency headed by a Chairman with Cabinet rank, was set up in 1972 to assist in

formulating social and economic policies, compile statistical data and coordinate foreign assistance. It is gradually building up a technical staff trained in planning techniques.

37. The CPO is responsible for the coordination of national development programs with the various technical ministries, and, as such, it is responsible for coordinating urban development policy with the principal entities involved. These include primarily the MMH and the semi-autonomous public utility companies charged with the provision of urban infrastructure.

38. The current Five-Year Plan (1976/77-1980/81) calls for large investments in urban infrastructure and housing. In principle, the CPO coordinates the implementation of the Plan with the technical ministries and other agencies involved, and it has the power to approve capital expenditures in the annual budget. In the urban development sector, however, it faces the same constraints as in other sectors. Foremost among these is the administrative capacity within the CPO itself. There is no staff specialized in urban development and no specific unit or department charged with coordinating urban development.

C. The Ministry of Public Works (MPW)

39. The Ministry of Public Works is responsible for surveying and mapping, construction of public buildings, rural water supply, and control of the Port and Highway Authorities. Before March 1979, this ministry was also responsible for municipalities and therefore for urban affairs. Now the principal urban responsibilities of the Ministry of Public Works are those of controlling land registration through its Land Registration Office and of providing maps through its Surveying and Mapping Department.

40. The Land Registration Office is organized to maintain ownership records for urban land held by private land or property owners. It does not however maintain ownership records of all land owned by the government (an inventory of such land is with the Department of Public Land at the Ministry of Finance) or of land owned by the Waqf (an inventory of such land is with the Ministry of the Waqf which does not publish it). 1/ The Land Registration Office at MPW has a staff of about 20 persons. The existing land records are not based on adequate mapping and surveying. People file their claims to land with the Land Department, but there is no system for identifying precise boundaries or overlapping claims. The system is not adequate for settling disputes or establishing a property taxation system. The Government

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1/ Land leased privately from Waqf (such land can never be sold) or from the government must register with the Land Registration Office. The purpose of such registration is to protect the rights of the lessee and not to accumulate an inventory of government or Waqf land. Lease rights may also be sold from one private owner to another. In this case the new owner must also register with the Land Registration Office (and with Waqf if the land itself is owned by Waqf).

recognizes the limitations of the existing land registration system and is working to establish a better one. British and Swiss bilateral assistance is helping the Surveying and Mapping Department to prepare improved base maps of Sana'a. These will ultimately be used to reconstruct a land registration system to replace the old one.

D. The Ministry of Municipalities and Housing (MMH)

41. The Ministry of Municipalities was created in March 1979 by separating Municipalities from the former Ministry of Public Works and Municipalities. The Ministry was renamed Ministry of Municipalities and Housing in 1980. It is responsible for urban affairs, particularly for planning and administration. At the central level it is divided into four departments: Administration and Finance, Physical Planning, Environmental Health, and Housing. The first two departments are each headed by a Deputy Minister. They consist of several divisions and contain the bulk of the Ministry's labor force. The other two departments are still small. A fifth 'Utilities' Department for sanitation, street lighting and drainage is being considered.

42. The MMH is directly responsible for the local municipal offices in each of the governorates. Each governorate level municipal office is headed by a "Director General" who is appointed from the central level and is responsible for municipal services in the governorate capital and in the smaller cities of each governorate (served through 160-170 district offices). Municipal services are, therefore, channelled directly from the central government to the local level. Below follows a more detailed description of the individual departments. It must be noted however that such a description gives only a snapshot of the current situation. In actuality departmental divisions are less rigid and formal and task assignments within departments may vary greatly over time.

(1) Central Level Technical Departments under the Minister of Municipalities

(a) Department of Physical Planning. The Department of Physical Planning has three divisions: Regional Planning, Town Planning and Implementation. The Regional Planning Division is not yet operational. The Department Director, and a staff of about ten surveyors and draftsmen dedicate themselves mainly to the town planning and implementation functions. Until recently the department was working with the Berger/Kampsax consultants and the United Nations in the preparation of detailed master plans for the five largest cities, which were published in January 1978. It is now focusing its efforts on implementing these master plans. The plans define rough densities and primary street patterns for the major cities. To implement the plans, the department is now designing detailed layouts for secondary and tertiary streets for specific areas, primarily in Sana'a.

Surveyors are sent to stake out new street layouts, and the Municipality of Sana'a coordinates the issuance of building permits with the Town Planning Division. The effectiveness of implementation is limited, however, because there are no funds or legal basis for acquiring the planned rights-of-way, many of which are on private land. Some public resistance is developing to the arbitrary road alignments, which cut into established property lines, but make no provision for compensation. There is also very little coordination in implementing the Plans implementation with the agencies in charge of infrastructure provision. A more serious problem presented by the Master Plans is that they suggest road and land use standards which are not related to costs or affordability and could create uneconomical town layouts if fully implemented. In addition, the proposed standards tend to be uniform within cities and between cities which leaves little flexibility to adapt appropriate standards to high-and low-income areas and to areas with different topography.

(b) Department of Environmental Health. This department is responsible for backstopping local efforts in solid waste collection, pest control and food hygiene. At the local level, officials are seconded to the municipal offices from the Ministry of Health.

(c) Department of Administration and Finance. This department is responsible for the management of personnel and budgets at the central level as well as the approval of local budgets and staffing patterns.

(d) Department of Housing. This department has been created to implement the proposed housing project for street sweepers to be financed by the United Nations Capital Development Fund (para 162). To date, the department consists of only five persons.

(e) Department for "Utilities" (Planned). The creation of this department is being considered to be in charge of backstopping local efforts in sanitation, mainly cesspool draining, as well as street lighting, drainage and road maintenance.

(2) Local Municipal Offices

43. The local municipal offices are responsible for providing a range of services including solid waste collection, construction and maintenance

of streets and drainage, sidewalk and street cleaning, public lighting, and environmental health. This latter includes food inspection, cesspool draining and pest control. The local municipal offices maintain staff for most of these functions, but they have insufficient funding and staff to provide all the required services. They depend on the Department of Highways, a semi-autonomous agency under Public Works, for road construction and some maintenance, and on the Yemen General Electric Corporation (YGEC) to install street lighting. Traffic control is the responsibility of the police within the Ministry of the Interior. The efficiency with which these services are provided varies widely from city to city depending on the strength of the local administration.

44. The local municipal offices are also responsible for issuing building permits. In Sana'a, this is done in coordination with the Land Registration Office of the Ministry of Public Works, which records proof of ownership, and with the Department of Physical Planning, which certifies that the building will not impair planned street alignments. The municipality surveys the land and collects a licensing fee. The licensing system is less organized in the other two principal cities, especially in Hodeidah.

45. The budgets for recurrent expenditures for each local municipal office are prepared locally and proposed to the central level officials who must approve them. Capital projects under the Five-Year Plans are centrally planned and approved.

46. Most ministries have technical staff in the Governorates which receive budget support and technical backstopping from the central ministries. In theory, the Governors coordinate Governorate level activities of all the ministries, but the relationships between the Governors and central divisions are ambiguous. In the case of the MMH, most of the officials responsible for technical backstopping in such fields as physical planning and environmental sanitation are stationed at the central level and provide periodic support to the local municipalities. Technical personnel who are stationed locally are usually appointed from the central level. The personnel stationed locally frequently lack the necessary training. Backstopping and coordination from the central level is also generally inadequate as competent staff is stretched too thin. The weakness of the municipalities has led in part to the creation of the semi-autonomous public utilities agencies which have independent budgets, are not tied to government pay scales and thus can hire more qualified personnel. At the same time, however, the channelling of nearly all important investments and technical assistance through the semi-autonomous agencies has further weakened the capacity of the municipalities to provide and maintain urban services.

47. The municipal administration system appears to work best in Taiz where the Director General of the Municipality has taken unusual initiative to recruit qualified personnel and give them additional work incentives.

E. Municipal Finance and Urban Taxation (see Annex 2)

48. As mentioned above, the budgets of the municipalities are approved and paid from the central level. The municipalities are authorized to collect a number of fees and fines, but these are remitted directly to the national treasury. Fees are collected for commercial licenses, for building permits, and for using public space to store construction materials. Fines are levied when the required permits and license fees are not paid and when health and sanitation regulations are disregarded. Because these revenues are not spent locally, there is little incentive for the municipalities to collect them efficiently. The total collected from these sources in Sana'a in FY77/78 was about YR 3.5 million.

49. In Taiz, contributions are solicited by the Local Development Association (see para. 53) to finance local development projects. Informal betterment taxes have also been levied to finance some street improvements. About one-third of the YR 3 million in municipal projects was financed from local contributions in FY77/78.

50. Two other types of urban taxes are collected directly by the Ministry of Finance. There is a real estate sales tax of 10 percent of property value levied at the time of sale on non-agricultural land within a specified radius of the city center (20 miles for Hodeidah, 10 miles for Sana'a, 2 miles for Dhamar). Agricultural land is exempt from this tax as is vacant land up to YR 100,000 and improved land up to YR 200,000. Until recently this tax was widely ignored. Thus proceeds from this tax were YR 3.4 million in FY 76/77 accounting for only 0.3 percent of government tax revenues. However the Ministries of Justice and Public Works now require evidence of tax payment before authenticating and registering transfer deeds. This should help collection efforts. There is also an annual rent tax, mainly on houses rented to second parties and on imputed rents to commercial property. Evasion of this tax is high and in FY 76/77 only YR 2.3 million or 0.2 percent of government tax revenues was collected this way.

51. There is no annual real estate tax based on land valuation. This would be difficult to administer due to the lack of a reliable land registration system, and points further to the need for cadastral survey and local registration improvements.

F. Reorganization of Municipalities and Financing

52. A law was passed in December 1978 authorizing the formation of 11 Municipal Councils, one for each governorate, to represent the capital and smaller urban areas of each governorate. Two-thirds of the Council Members are elected and one-third are appointed, and members elect a Council President from their peers. A first council election was held in May 1979 and experience with Municipal Councils is still limited. It was first anticipated that municipalities, through their Councils, would be authorized to raise additional local taxes and to use them for local purposes. Such a step towards decentralization could have improved the efficiency of municipal

services and might have raised the responsiveness of tax collection efforts to local needs. However the current practice maintains the centralized administrative structure. Municipal Councils have advisory functions to the central offices of the MMH but they communicate little with local MMH branches and do not act as local legislative and taxing bodies.

G. Local Development Associations (LDAs)

53. Yemen is uniquely organized at the local level for self-help. About 191 Local Development Associations have been formed, most at the village level. LDAs are organized on a Nahiya (District) basis and relate to the Central Government through the Governorate Coordinating Council and the Confederation of Yemeni Development Associations (CYDA). The LDAs are based on a long tradition of individual initiative and self-reliance. They have evolved from centuries of local autonomy and isolation from the central government.

54. Most of the LDAs activities are in the rural areas where they have been responsible for large numbers of feeder road, water, school and health projects. By FY 1976, they had completed 5567 km of access roads, 881 water projects, 580 schools and 46 health projects. Projects are largely financed with local resources, but there are limited contributions from the central government.

55. LDA representatives are elected by the local populations. The Sana'a LDA has 233 elected representatives who, in turn, elect an eleven-member board. The LDA representatives and board members receive no salaries unless they are employed full time by the LDAs.

56. Urban LDAs undertake a number of community projects such as the construction of parks, day care centers, health facilities and homes for the indigent. In Sana'a, the LDA is also running a public education campaign to improve the solid waste problem. It has helped to drill wells and to distribute water to areas of the city which are not covered by the water system. In Taiz, the LDA has a close working relationship with the municipality. It has contributed to the municipality to finance several local development projects.

57. The LDAs contribute grass roots pressure to improve the responsiveness of government agencies to public needs. For example, the LDA in Sana'a works with local populations to pressure utility companies to expand their service.

58. The Sana'a LDA has spent about YR 5 million in each of the last three years. About 75 percent of its income comes from the religious tax (Zakat). There is a small tax on airline tickets. They also receive donations from merchants, parents' associations and other local groups.

H. Long-Term Administrative Development

59. Two opposing tendencies can be identified in the development of public administration in the YAR. The long history of isolation and local

autonomy and the more recent successes of the LDAs demonstrates the appropriateness of independent, decentralized administration in the YAR. On the other hand, the development of the central government since 1962 has been highly centralized, especially in the administration of modern urban sector activities.

60. Centralized government administration has been a natural consequence of the government's need to consolidate control over the country after the Revolution and the shortage of skilled administrators. Over the longer term, however, a highly centralized administration seems to be incompatible with the regional development pattern of the country. Yemen is different from many other developing countries of comparable size which have single primate cities, centralized trade patterns and transport networks, and fewer regional differences. A strategy is needed which will utilize existing local self-reliance. Although this may require a larger number of skilled administrators than a centralized administration, the absence of an adequate number of administrators in the short term should not deter the country from the most appropriate long-term development strategy.

61. An effective decentralized administration should be developed to enable local authorities to address local urban problems directly. This will require increased financial autonomy for local administrations including a larger tax base and increased local discretionary power over spending. Improved local control over land use and taxation will be the most important step towards this end.

62. In the long-term the Central Government should play a more limited direct role in urban development. Although it should maintain an active role in policy planning and overall guidance of the urban sector, implementation should be left to local administrations. Urban development will also continue to depend heavily on private sector initiatives. The Central Government should guide private investments with appropriate incentive schemes. This will include the establishment of an adequate system for financing housing and urban infrastructure as well as other types of investments.

III. URBAN EMPLOYMENT AND INCOMES

63. Since the quadrupling of international oil prices at the beginning of 1974 there has been an unprecedented increase in personal cash incomes based mainly on remittances from Yemenis working in Saudi Arabia and the Gulf States. Net remittances from Yemenis in neighboring countries are estimated to have risen from some US$40 million in 1969/70 to more than US$1 billion in 1976/77. On a per capita basis, they thus reached some US$170 in the latter year.1/ This large influx of foreign remittances has coincided with a

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1/ Based on an estimated population of 5.975 million in 1976/77 including short-term migrants.

vigorous expansion of public development expenditures, many of which are financed by foreign borrowing. Together they have contributed to an 8.5 percent annual increase in real GDP from 1969/70 to 1976/77 and, due to the remittances, an even faster increase in GNP (see Table 8, Annex 1). By 1977/78 GNP reached a level of about YR 14 billion which was equivalent to an average per capita GNP of US$410. 1/ This was more than twice the level of average per capita GNP in 1969/70 in real terms.

64. Because of strong traditional family ties, most of the remittances from abroad have gone directly to the rural areas which have provided most of the migrant laborers. The cities have benefited to a lesser extent from direct remittances, but they have benefited indirectly from the rapid expansion of national income. The largely urban based sectors of commerce, industry, finance and government services have grown especially rapidly. Throughout the country there has been a high propensity to invest the new wealth in labor-intensive housing construction. The major cities, expecially Sana'a, are participating in the construction boom. This, together with the large number of public development projects, has created an intense demand for labor which was already in very short supply because almost twenty percent of the male labor force is outside of the country. This, in turn, has inflated wages at all levels, even for unskilled labor, but the percentage increase of wages for unskilled labor has been less than for skilled workers.

A. Employment

65. A 1975 survey 2/ conducted in the five major cities (Sana'a, Hodeidah, Taiz, Ibb and Dhamar) covered the entire public sector, all private establishments with 5 or more workers and a sampling of smaller establishments (see Table 10). Of the total of about 84,000 modern sector workers, over 31,000 were employed by government. Of these, roughly one-third were employed by the Ministry of Interior.

66. Small establishments dominate the modern private sector (see Table 11). Almost 70 percent of private modern sector establishments had four or less workers. Two out of every three modern private sector employees are employed in services. Wholesale and retail trade accounts for about 50 percent of private employment. Manufacturing and construction are the next most important subsectors.

67. The tightly constrained labor market has created the unusual situation of virtually no urban unemployment in the YAR. Unskilled employment in

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1/ Based on an estimated population of 6.129 million in 1977/78 including short-term migrants.

2/ C.A. Sinclair and J. Socknat, "Assessment of Manpower Development and Policy and Program Suggestions for YAR" ILO/UNDP/GOYAR-January 1976.

Sana'a is available to anyone for YR 70 per day. Open national unemployment was measured at only 5 percent of the labor force in the 1975 census. As a final point, the 1975 Manpower Survey classified 88 percent of all urban employment (in Sana'a, Hodeidah, Taiz, Ibb and Dhamar) as belonging to the modern sector. This suggests a liberal definition of that sector, 1/ and should not be used in international comparisons or as an indicator of an advanced employment and industry structure.

Table 10: MODERN SECTOR NON-FARM EMPLOYMENT, 1975

Economic Sector	Number of Jobs
Agriculture	200
Mining and quarrying	51
Manufacturing	8,473
Electricity, gas and water	870
Construction	7,950
Wholesale and retail trade	27,570
Transport, storage and communications	1,047
Finance, insurance and real estate	1,126
Community and personal services	5,422
Total Private Sector	52,709 1/
Total Government Sector	31,315
GRAND TOTAL	84,024

1/ In the cities of Sana'a, Taiz, Hodeidah, Ibb and Dhamar.

Source: CPO, 1975 Manpower Survey (May 1976).

1/ The "modern sector" is here defined as consisting of all fixed location establishments.

Table 11: THE SIZE DISTRIBUTION OF MODERN SECTOR EMPLOYMENT (1975)

Size of Establishment by Number of Workers	Number of Establishments	Percentage
4 Workers or less	1,582	68%
5- 9 Workers	518	22%
10-24 Workers	149	6%
25-49 Workers	32	2%
50-99 Workers	19	1%
100+ Workers	18	1%
Total	2,318	100%

Source: CPO, 1975 Manpower Survey (May 1976).

B. Incomes

68. The high levels of prosperity and full employment among even unskilled workers have resulted in high levels of income and in an urban income distribution, which is less skewed than in most developing countries. Although there are presently no exhaustive and reliable data on income distribution in the YAR, sketchy information derived from two recent surveys 1/ and on wages in the private sector at various skill levels in the three main cities indicate that in 1979 the Household Income Distribution in the three major cities is roughly as follows:

1/ 1978 Survey on Municipal Street Cleaners in Sana'a, and 1978 Survey on Civil Employees.

Table 12: HOUSEHOLD INCOME DISTRIBUTION IN SANA'A, HODEIDAH AND TAIZ IN 1979 1/

Income Range YR/mth	SANA'A Percent Household	SANA'A Cumul. %	HODEIDAH Percent Household	HODEIDAH Cumul. %	TAIZ Percent Household	TAIZ Cumul. %	Percentage of Total	Cumulative Percentage of Total
0 - 749	1	1	4	4	2	2	2	2
750 - 999	4	5	16	20	7	9	8	10
1000 - 1249	12	17	23	43	14	23	15	25
1250 - 1499	17	34	13	54	17	40	16	41
1500 - 1749	16	50	9	65	12	52	13	54
1750 - 1999	10	60	9	74	11	63	10	64
2000 - 2499	10	70	6	80	10	73	9	73
2500 - 2999	8	78	4	84	6	79	7	80
2000 - 3499	5	83	4	88	5	84	5	85
3500 and over	17	100	12	100	16	100	15	100
TOTAL	100		100		100		100	

1/ Mission Estimates.

69. The national median urban monthly income in 1979 is about YR 1,600 (US$355). The proportion of the population below this level of income is 35 percent, 45 percent and 60 percent in Sana'a, Taiz and Hodeidah, respectively. This reflects the differences in wages for unskilled labor between the three cities and the fact that there is a greater proportion of unskilled labor in Hodeidah than in Sana'a.

70. Since there is virtually no unemployment, there are only a few people who, for one reason or other, have failed to participate in the recent economic boom. The newly developed public administration is perhaps the only large sector where wages have not kept pace with the general wage inflation (See Annex 3). Despite some recent very substantial increases (up to 75 percent), the wages of civil employees still lag behind those in the private sector. In March 1979, the minimum monthly wage in the public sector was about YR 750 (US$167) while an unskilled laborer earned a minimum of about YR 1,100 (US$245) per month. It is estimated that about 75 percent of the people below the 30th percentile of the national urban income distribution are civil employees.

71. The absolute urban poverty threshold, as computed in accordance with Bank methodology, has been estimated at about US$450 per capita per year in 1977. It has been updated to US$690 for end-1978 (see Annex 3). Consequently, about 33 percent of the urban population is below this threshold. The proportion of the population below the threshold in the three major cities is 20 percent, 30 percent and 45 percent for Sana'a, Taiz and Hodeidah, respectively.

72. It would be desirable to distribute households by both income and household size. This permits the derivation of a per capita income distribution and it has the potential of improving the targeting of housing and infrastructure investments. Unfortunately, such detailed information is difficult to derive on the basis of information available in Yemen. Indeed, a household size distribution is not available from any source. However, Table 13 shows the 1975 distribution of residential buildings by number of residents which may serve as a close substitute 1/. Only 4.5 percent of all buildings have one resident, 50 percent have 5 or fewer residents and 21 percent have 8 or more residents.

C. Productivity

73. It should be emphasized that the low unemployment and high levels of income in the YAR do not reflect increased levels of productivity. On the contrary, domestic production has been very slow to increase in response to the increase in incomes and domestic money supply. Increased demand for consumer goods has been met by increased imports. There is a severe shortage of labor in the country, and deficits in certain types of skills are especially serious. There has even been a recent trend to import foreign semi-skilled labor which is more productive and less expensive than local construction labor. Some 1,000-1,500 foreign construction workers are estimated to be in the YAR.

74. Skill levels are very low throughout the YAR. In 1975 about three-fourths of the resident full time labor force possessed only traditional skills in agriculture. About four out of five workers were illiterate. Only about 8 percent of civil servants had preparatory or secondary education and only 3 percent had post-secondary training. About 84 percent of public sector employees were either illiterate or had less than primary education.

75. The work force in the private modern sector is also relatively unskilled. There is an extreme shortage of mid-level technicians. About one-third of the employees in the private sector do not possess adequate qualification for the positions they hold.

76. The labor and skill shortage has contributed to serious inflation; the costs of housing and urban services especially have been severely affected by inflation due to their relative supply inelasticity. While the general price index for Sana'a (the only available price index) rose from 100 in 1972/73 to 348 in 1977/1978, and to 470 in 1979/80, the rent and water component rose to 513 and 791 for the respective years and the fuel and lighting component rose to 791 and 1036 for these years (see Table 9, Annex 1.) The price increases for foodstuffs and other consumer goods which can be imported have been much less. There is some indication however that the relative cost

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1/ Often referred to as a housing unit. The term residential building is more appropriate as one unit may serve several households. The average number of households per building is 1.1 (see also para. 145).

Table 13: DISTRIBUTION OF RESIDENTIAL BUILDINGS BY GOVERNORATE AND NUMBER OF RESIDENTS PER BUILDING, 1975 (PERCENT)

Governorate	Number of Residents										No answer	Total	
	1	2	3	4	5	6	7	8	9	10+		Percent	Absolute
Sana 'a	3.8	6.9	8.9	10.9	11.7	10.5	8.4	6.4	4.3	1.4	14.6	100	156,279
Taiz	5.4	8.9	10.5	12.3	13.0	12.2	10.4	7.7	5.2	9.9	4.6	100	177,246
Hodeidah	5.6	11.8	13.6	14.9	14.3	11.9	8.8	5.7	3.4	6.4	3.4	100	138,454
Ibb	4.1	7.9	10.4	13.2	14.1	12.7	10.1	7.0	4.4	9.5	6.8	100	159,862
Dhamar	3.8	8.0	10.7	13.0	13.7	12.3	9.4	6.4	4.2	9.6	8.9	100	90,316
Hajjah	3.8	9.3	12.4	14.1	13.5	11.4	8.5	5.8	3.7	9.5	8.1	100	78,033
Beida	4.3	7.7	9.0	11.5	13.1	12.9	10.7	8.0	5.3	12.7	4.8	100	30,507
Saadah	3.8	7.4	10.2	12.1	12.7	11.2	8.7	6.0	3.9	11.9	12.1	100	31,365
Mahweet	3.4	7.4	10.0	12.5	13.3	11.3	8.8	6.1	4.1	11.8	11.4	100	34,495
Mahrib	5.5	11.1	12.8	13.7	13.6	12.3	9.4	6.7	4.7	8.1	2.1	100	7,592
TOTAL	4.5	8.6	10.8	12.8	13.3	11.8	9.4	6.6	4.3	10.1	7.8	100	904,149

Source: CPO, unpublished results from the 1975 Census.

of housing will stabilize or even decline in the future. The major reason is the substantial decrease in nominal construction cost experienced since 1979 (see para. 128.)

77. Although the low productivity and skill shortage is a serious problem for national development, individuals lack the incentive for skills acquisition. The wages for unskilled labor are so high that individuals frequently do not want to forego current incomes in order to attain higher skills. The problem tends to be self perpetuating because the absence of skilled manpower is one of the greatest constraints to national development. In spite of the difficulties, vocational education programs should be pursued. On-the-job training will probably yield better results than more structured education in this situation.

78. The problems related to low productivity would become extremely serious if emigration and remittances from abroad were to decline. This underlines the need to develop more productive enterprises in the YAR prudently balancing the use of capital and labor intensive technology. For example, in the construction industry, there is an incentive in the short-term to import capital-intensive technologies, but there is a clear risk that traditional labor-intensive Yemeni technology would become obsolete and could not be resurrected if necessary (see Chapter V).

IV. URBAN INFRASTRUCTURE AND RELATED POLICIES

79. The provision and maintenance of urban infrastructure in Sana'a, Hodeidah and, to a lesser extent, Taiz, is extremely poor. Conditions in other cities are even worse. Water supply, sanitation, solid waste collection, power supply and street cleaning are far below the standards necessary to preserve a reasonable level of public health and safety. These deficits have an especially severe impact on lower income neighborhoods.

80. Water and sewerage, electricity and street repairs are provided by the National Water and Sewerage Authority (NWSA), the Yemen General Electric Corporation (YGEC) and the Highway Authority, respectively. All three are semi-autonomous public agencies. They are all relatively new and suffer from severe shortages of skilled manpower.

81. There has been a large amount of international assistance in the provision of infrastructure in the main cities of the YAR. Many of the projects now under construction or at the tender stage have IDA financing (see Table 14). Most of these projects are being implemented by semi-autonomous agencies which are receiving financial and technical assistance under the various loan programs.

Table 14: MAJOR INFRASTRUCTURE PROJECTS IN THE URBAN SECTOR (1979)

First Sana'a Water Supply	-	IDA/Complete
Second Sana'a Water Supply and Sewerage	-	IDA/Saudi Fund/Arab Fund/tenders received
Hodeidah Water Supply and Sewerage	-	IDA/Arab Fund/Contract let
Taiz Water Supply and Sewerage	-	USAID/Tenders received
Ibb and Dhamar Water and Sewerage	-	IDA/Start imminent
Taiz Solid Waste	-	Dutch Aid/Under negotitation
Sana'a Solid Waste	-	Local funding/Under negotiation
Hodeidah Solid Waste	-	Local funding/Consultants selected
Sana'a, Hodeidah and Taiz Power Distribution	-	IDA/Netherlands/Under construction
Third Highway project (intercity roads)	-	IDA/Start imminent

A. Urban Roads

82. The most striking characteristic of the urban infrastructure in Sana'a, Hodeidah and Taiz is the absence of an adequate surfaced road system. Only the principal streets are surfaced; the rest are not even compacted or graded. Short but heavy rainfalls combined with heavy traffic have caused serious damage which is rarely repaired.

83. Road and footway provision and maintenance are legally the responsibility of the municipalities. However, due to the severe shortage of staff and funds (para. 46), the municipalities depend on the Highway Authority, a semi autonomous public agency under the Ministry of Public Works, for this function. The Highway Authority's principal activity is to build and maintain inter-city roads. It has very limited additional capacity for urban roads.

84. The problem of road maintenance is compounded, especially in Sana'a, by the lack of central coordination of projects which involve underground works in the city center. There are currently six such projects involving the installation of water supply, sewerage, electricity and telephones. Newly reinstated trenches are frequently reopened and streets are often not properly repaired afterwards. To limit these problems, public utilities projects should be more closely coordinated with the municipalities which are in charge of road maintenance.

85. Much of the physical planning activity within the Ministry of Municipalities and Housing has concentrated on the design of road systems for the three major cities. However, the road standards which have been designed are not related to costs or affordability. The standards are also uniform within cities and between cities which leaves little room to adapt standards to meet the needs of different income groups. The street layouts of the master plans are often arbitrary and do not take existing property lines and

buildings sufficiently into account. Planned road alignments in existing neighborhoods should be revised to require a minimum of property disruption and demolition. In the future, roads with appropriate standards should be planned and provided in advance of new development.

B. Water and Sewerage

86. Water systems reach only about 50 percent of the combined population of Sana'a, Hodeidah and Taiz. Hodeidah has the least adequate water supply system. Water is especially lacking in the newly urbanizing low-income areas of that city. The water system in Taiz serves about 90 percent of the city's households but only on an intermittent basis.

87. In all three cities, especially in newly urbanizing areas, many low-income households continue to rely on surface wells and water vendors and risk serious illness because of the polluted ground water. 1/ Low-income groups not only consume poorer quality water, but they pay more per liter. In Sana'a and Taiz, households without connections pay over six times the per liter price of water than connected households. The average consumption of water was estimated at 89 liters per capita per day for 1977 in Sana'a. Table 15 shows estimates of monthly expenditures for water for connected and unconnected households based on daily consumption rates in Hodeidah. Low-income households pay more for less water. Although this situation will be partly rectified as water is metered and rates are raised, this demonstrates that low-income households do have the capacity to pay for improved services.

88. There are no operating sewerage systems in the YAR, but limited systems are under construction or planned in all three cities. Most urban areas are still dependent on septic tanks, cesspools and soakage pits. Groundwater is polluted by sewage in all three cities, which is a particular problem in Hodeidah and Sana'a where large proportions of the population still rely on private wells for drinking water. Open pools of sewerage are especially common in the low-income areas of Hodeidah. There is a high level of fecal contamination in most surface wells and diseases such as typhoid, bacillary dysentery, cholera and infectious hepatitis are extremely widespread in low-income areas. Under the existing IDA loans (para 91), the National Water and Sewerage Authority (NWSA) is entrusted with improving this situation.

1/ In 1976, the prevalance of intestinal parasites and dysentery was estimated at 850 per 1,000 in the YAR. (See: Basic Health Services/Primary Health Care Project, WHO, Sana'a, 1978.)

Table 15: MONTHLY HOUSEHOLD EXPENDITURE FOR WATER CONSUMPTION IN HODEIDAH

	Liters per capita per day[1]	Liters per household per day	Price per liter (YR)	Daily cost of water per household (YR)	Monthly cost of water per household (YR)	Approximate percent of income required for water from households at 20th percentile
Connected households	70	385.0	0.003	1.16	34.65	3.5%
Unconnected households	15	82.5	0.02	1.65	49.50	5.0%

[1] These are 1975 estimates of consumption.

89. Planning, execution and operation of the water supply and sewerage facilities in the major urban centers is the responsibility of the National Water and Sewerage Authority (NWSA) which was established in 1973 with IDA assistance. It is a semi-autonomous government entity under the Ministry of Electricity, Water and Sewerage (MEWS) managed by a General Manager and supervised by a Board of seven members. NWSA now has responsibility for water and sewerage facilities in Sana'a, Hodeidah and Taiz and it will soon assume management of existing facilities in Ibb and Dhamar. A transfer of the Department of Rural Water Supply within the Ministry of Public Works to MEWS and NWSA is under discussion.

90. There is a severe shortage of skilled engineers and technicians to prepare projects and to operate existing facilities. There is also a shortage of skilled laborers to maintain existing systems. Through lending and technical assistance programs, IDA, the Arab Fund, the UNDP and USAID have provided training programs for NWSA technicians which are helping to alleviate the shortage of skills. Furthermore, bilateral assistance has combined with an IDA credit to finance a vocational training center to provide skilled technicians to NWSA and refresher courses for NWSA's existing personnel.

91. NWSA has already received three IDA credits (464-YAR, 559-YAR, and 670-YAR) to improve water supply and sewerage services in Sana'a and Hodeidah. USAID has provided financial assistance to improve water and sewerage services in Taiz, and a fourth IDA credit was approved for improvements in water supply and sewerage in Ibb and Dhamar. Table 16 shows the previous investment expenditures of NWSA and the planned investment for 1978/79. The low investment amounts from previous years reflect the relative newness of the institution and the fact that several projects have been delayed.

Table 16: NWSA INVESTMENT EXPENDITURES IN PREVIOUS YEARS AND PLANNED INVESTMENT FOR 1978/79 (YR Millions)

	Previous Years' Expenditure	Planned for 1978/79
Sana'a		
Water, first phase	58	18
Water, second phase		99
Sewerage	2.5	79
Hodeidah		
Water and sewerage	30	104
Taiz		
Water and sewerage	6.5	94
Ibb and Dhamar		
Water and sewerage	1.5	0.9
Total	98.5	394.9

Source: NWSA.

Table 17: NWSA INVESTMENT PROGRAM THROUGH 1983

	YRls (millions)	US$
Sana'a Water Supply	308.9	68.6
Sana'a Sewerage	217.1	48.2
Hodeidah Water Supply	89.4	19.9
Hodeidah Sewerage	243.2	54.0
Taiz Water Supply	186.3	41.4
Taiz Sewerage	218.7	48.6
Dhamar Water Supply	108.3	24.1
Dhamar Sewerage	112.7	25.1
Ibb Water Supply	82.9	18.4
Ibb Sewerage	109.9	24.4

Source: NWSA.

92. NWSA is planning major investments in water borne sewerage systems in the main cities. Piped sewerage systems are being implemented because of the volume of wastewater generated by the water systems, the problems of narrow streets in old town areas and unfavorable soil conditions. However, where conditions permit, less expensive sanitation facilities such as septic tanks and composting latrines should be considered as sanitation systems are extended to less dense low-income areas.

93. NWSA was operating at a loss until recently. To improve this situation and to meet NWSA's financial targets, a series of tariff adjustments was initiated in October 1978. Water rates were raised to YR 4 per m^3 in Taiz and by 50 percent in Sana'a and Hodeidah where there are no meters and flat fees are charged. They are planned to reach YR 5 per m^3, which is quite expensive by international standards and reflects the high cost of water production and distribution in the YAR.

C. Electricity

94. In spite of recent additions to the electricity generating capacity in the three major cities, the demand for electricity exceeds supply. Coverage is best in Sana'a where at least 77 percent of all household were legal electricity subscribers in 1977 (see Table 18), although the system is inefficient. An estimated fifteen percent of all connections are illegal, and many houses have poor internal wiring. The provision of electricity is much less adequate in Hodeidah where the existing system does not reach most low-income areas. There is a black market in the provision of house connections. In some areas of Sana'a, payments of over YR 4,000 (US$890) are common although the standard charge remains YR 670 (US$150). The poor are unable to pay these amounts. Where installation is too expensive or electricity is not available, the poor have to rely on kerosene, particularly in Hodeidah. Households using kerosene pay about 70 percent more for light than the cost of an average monthly charge for electricity which indicates that the poor can afford improved lighting if excessive installation charges are not required.

Table 18: ELECTRICITY SUBSCRIBERS IN THE MAIN CITIES OF THE YAR, 1977

City	Subscribers	Percent of households served by electricity /1
Sana'a	23,973	77.2
Taiz	9,587	56.4
Hodeidah	7,871	41.5
Ibb	2,168	54.0

Source: Statistics Department, Central Planning Organization, YAR, Statistical Yearbook 1977-1978; own estimates.

/1 Estimate, based on the assumption that all Modern Sector establishments are non-residential subscribers, assuming household growth as estimated in Table 9, adjusting the numer of households for underenumeration, and disregarding illegal connections.

95. Electricity supply and distribution in the three main cities and in a few smaller towns is the responsibility of the Yemen General Electric Corporation (YGEC). The YGEC was established officially in 1975 when the existing power companies were nationalized. It is a semi-autonomous public utility with a Board of not more than nine appointed by the Government and a Chairman who reports to the Minister of Economy. YGEC employs a large number of expatriates in its senior management. There is only a limited number of qualified Yemeni engineers and technicians, but the YGEC is building its own training facility.

96. An IDA urban power distribution project (Appraisal Report No. 2006a-YAR) will provide 32,000 new connections and 8,000 rehabilitated connections in the three cities at a cost of US$59 million (US$700 per connection). The estimated completion date is 1981. This project will greatly reduce present problems, although severe staff shortages may render implementation and maintenance extremely difficult. Efforts should be made to coordinate the execution of the project in each city with other `in-ground' projects to avoid unnecessary reinstatement and disruption to the city streets (para 84).

97. During the current Five-Year Plan, the YGEC has planned total construction programs of US$227.8 million. In addition to the IDA-financed distribution system project of US$59.6 million, this program includes the present diesel construction program estimated to cost US$19 million, a steam generating plant and transmission lines estimated to cost US$56.4 million, an interim generating construction program costing US$38.6 million and the further expansion of distribution facilities for 1982 and 1983. Large amounts of this program are being financed by the Saudi Fund (17.5 million Saudi

Rials) and the Arab Fund (US$25 million). The Government is providing roughly 25 percent of the program funding as an equity contribution. Additional borrowing will be made from international and local commercial banks.

98. Estimates for FY79/80 show a 3.8 percent return on net fixed assets of YGEC which is below the 8 percent target considered necessary to generate sufficient internal funds for the investment program. A flat rate of YR 0.70 per kWh is now being charged, but this may have to be revised upward to increase the long-term returns to the corporation.

D. Urban Drainage

99. There is virtually no storm-drainage system in the three major cities. Drainage problems are most acute in Sana'a and Taiz. The problem is exacerbated by the lack of reasonable road or footway surfaces especially in low-income neighborhoods.

100. It is unclear at the present time which of the various agencies is responsible for drainage within the cities. None of the existing agencies has technical staff with the responsibility for drainage. The responsibility for drainage would most logically rest with the municipalities, but they have no funds budgeted for either capital works or for routine maintenance.

101. The provision of improved road and footway surfaces would dramatically reduce the problems of drainage, and should receive a higher priority than more costly storm-drainage systems. In Sana'a, where drainage problems are most severe, improved road surfacing will not increase present runoff and erosion significantly because the soil is already very impermeable.

E. Solid Waste and Street Cleaning

102. Road conditions, particularly in Sana'a, make the task of street cleaning and refuse collection especially difficult. Many areas of new, lower income development are severely littered, with resultant public health risks. The three municipalities, especially Taiz, assisted by the Local Development Associations, are making determined efforts to improve present conditions.

103. More modern collection and disposal methods are currently introduced in several cities. Financed by MMH, 50% of Sana'a is served by disposal bins, 5 transfer stations and a sanitary landfill site have been developed, and a repair and maintenance facility is currently built. In Taiz a disposal system is currently implemented with Dutch Aid. Equipment has already been ordered and actual work is to start in January 1981. For Hodeidah a disposal study has been completed and financing is sought, while for Ibb German Technical Assistance has agreed to a disposal study. Training and the improvement of local management will be essential for the implementation of all disposal systems. Even more important will be to obtain public acceptance of the disposal systems. Existing programs should be closely monitored to improve performance in this regard.

F. Urban Traffic

104. Serious traffic delays occur in all three cities. The growing problems of urban traffic are complicated by the overlapping responsibilities in the traffic sector.

105. Vehicle ownership is still low, but there has been a rapid increase in licensed vehicles in the YAR in recent years, most of which are concentrated in the main urban areas. Nineteen seventy-eight was the first year in which a central register of vehicle licenses was maintained, although recorded vehicles probably represent less than 60 percent of the actual number of vehicles in the country. The records show a total of 29,388 vehicles (excluding military vehicles) registered in the country in 1978. If these represented 60 percent of all vehicles, then the actual figure would be closer to 49,000 or 10 vehicles per 1,000 inhabitants, with private car ownership at around 1.7 per 1,000 inhabitants.

106. Although the municipalities are charged with the general responsibility for urban street maintenance and are frequently the "paymasters" for road and traffic improvement (road widenings, provision of roundabouts, etc.), they have no expertise in traffic management. Primary responsibility for traffic control rests with the General Traffic Department of the Ministry of the Interior. This central Government unit, based in Sana'a is responsible, through its local Traffic Departments in the major cities, for the recording of vehicle registrations, driver licensing, accidents, contraventions, and frauds. It is also responsible for accident investigations, parking and traffic control measures, the provision of traffic signs and road markings, and the design and implementation of traffic management measures. However, neither the General Traffic Department nor the Local Traffic Departments have the required technical expertise. They are inadequately staffed and have insufficient vehicles and equipment to fulfill their designated functions.

107. A more clearly defined institutional structure is required to coordinate the planning of low-cost physical improvements with traffic management and policing measures. It is especially important to consider a range of measures such as intersection improvements and circulation schemes to minimize costly capital investments in new road construction.

G. Public Transport

108. Most urban public transport needs are met by privately organized jitney/taxi services and by independent taxis. The informal jitney services are arranged with groups of around 200-250 small buses (16 seats), mini-buses (10 seats) and taxis (5 seats) operating from a central pick-up point. Drivers obtain licenses from the Traffic Police to operate between a central point and any of six destinations in Sana'a. Charges are modest, YR 1 per person for all in-city destinations (YR 0.5 per person in the 16-seat buses).

109. The only formal public transport facility is provided by the Yemen Transport Company (YTC) which began operations in 1977, and is 51 percent

owned by the Government through the Ministry of Economy, 15 percent owned by Saviem, the French Company which supplied the company's buses, and 34 percent unsubscribed. The YTC has six 16-seat buses for local use, two in Hodeidah and four in Taiz. Its remaining seventeen 45-seat buses based in Sana'a are used solely for long distance intercity routes.

110. Efforts should be increased to improve public transport services, including both private jitney and public buses. The improved planning and regulation of public transport routes will limit future dependence on private automobiles and taxis which is already growing at an alarming rate. It will also encourage more economical patterns of urban development. Public transport would also benefit from improved traffic management.

H. Emergency Services

111. The provision of emergency services is far below acceptable standards in all three cities. There are no fire hydrants in any of the three cities. Only Sana'a has a reasonably staffed and equipped fire station. Its 12 fire engines (3 years old), 2 ambulances (3 years old), and 1 bowzer (7 years old) are, nevertheless, inadequate to deal with major fires, particularly in the congested city center. The service is run by soldiers from the Ministry of Interior who have no formal training in fire fighting or first aid.

112. The situation is even worse in Hodeidah, where fire services consist of two fire engines (no ladder) and no ambulances. The danger of fire in Hodeidah is much greater because of the predominance of thatched squatter housing. Taiz is equipped with only one fire engine, but wider streets and more modern buildings make the situation slightly better than in Hodeidah.

I. Social Infrastructure

113. Despite considerable achievements in the provision of social infrastructure since the end of the civil war, health conditions in the YAR are still very poor and the Government's education program is still in the initial stage. According to official estimates, the present death rate averages about 20 per thousand inhabitants (though this may be on the low side) and life expectancy at birth averages 37 years. Infant mortality is officially put at around 138 deaths per thousand live births though some commentators suggest mortality rates between 150 and 210 per thousand. The illiteracy rate is extremely high--close to 90 percent for the adult population. Only 25 percent of the children in the age group 6-11 was enrolled in primary schools in 1975/76. 1/

114. One of the most striking features in the area of social infrastructure is the uneven spatial distribution of health and education facilities

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1/ Only 11 percent of total student enrollments were girls.

and related staff. About 60 percent of the hospitals and health centers, and around 90 percent of the university, technical and secondary education facilities are concentrated in the five major cities of the country. Primary schools are somewhat more evenly distributed geographically because of LDA construction. In order to redress these imbalances, the Government is launching several programs directed to rural areas, particularly in the area of health with a WHO project which would provide basic medical services to 20-25 percent of the rural population by 1980/81.

115. Although health care and education services are far better in urban areas than in rural areas, they remain inadequate. Health facilities are ill equipped and the lack of administrative planning often leads to inefficient utilization of the already limited number of facilities. Lack of equipment and instruction materials in schools is frequently reported. However, the major obstacle for the development of modern health and education is the severe shortage of trained and qualified personnel and teachers. The lack of staff has considerably limited the possible increase in enrollments and has often resulted in overcrowded classrooms in the major cities. Some schools are operating two to three shifts with classrooms up to 100 students. The lack of qualified Yemeni teachers is acute. Nearly 50 percent of all primary teachers hold only a primary school diploma or its equivalent. Over 95 percent of secondary teachers are expatriates and increasing numbers of expatriates are now being employed in primary schools.

116. In order to tackle these various issues, the Government is now receiving funds provided by foreign donors, especially Arab countries, and international organizations (WHO, UNDP, UNICEF, IDA, Germany). However, it appears inevitable that the shortage of qualified staff will continue for the foreseeable future.

V. HOUSING CONDITIONS AND POLICIES

117. Housing conditions in the YAR are generally good in comparison with other developing countries. Traditional materials and workmanship are of good quality and space standards are high. Overcrowding is less of a problem than in other countries. Much of this can be explained by a traditional system for land allocation and housing construction which has worked relatively well until recently. There is an increasing number of signs, however, that the system is straining beyond capacity and will not be able to meet the increased demand for housing foreseen for the coming decades. This problem is most severe for the lowest income groups who have only limited access to land, urban services and housing finance.

118. The Government is aware of the existing and potential problems in the housing sector. However, policies contemplated so far might result in curtailing the traditional housing delivery system and replacing it with one which is less flexible and in many ways less appropriate (paras. 152 and 163).

A. The Housing Delivery System

119. The relatively high standards of urban housing in the YAR and low levels of overcrowding are largely explained by a system for housing delivery which has worked reasonably well in the past.

(1) Land

120. Sana'a. In the past, there has been an adequate supply of land affordable even by the lowest income groups. The main source of land for new low-income development has been the Government land in the hills to the east of the city, which has been informally subdivided and sold. About 35 percent of the total housing stock and 60 percent of housing built since 1962 is on former Government land. Land in the fringe areas of Nugum and Museik has been selling for about YR 100 per square meter. 1/ The cost of an average 100 m^2 plot in these areas, about YR 10,000, is 55 percent of the yearly income of households at the 30th percentile of the Sana'a income distribution, which has proved to be affordable by low-income groups.

121. The higher income groups have not been competing for Government-owned land for a number of reasons:

(a) the land is generally located outside the formal water distribution system and ground water for wells is less available;

(b) the rugged topography and rocky soil make the construction of access roads difficult;

(c) the plots are small; and

(d) tenure is uncertain. Plots are frequently sold more than once to different buyers.

Upper income groups have settled in the northern and western fringes of the city where land is now selling for YR 200 to YR 500 per square meter. This has left low-income groups with the eastern land which, in spite of its shortcomings, has provided a necessary outlet for the low-income market.

122. The Government still has large land reserves in the northeastern hills, but it is not content with the informal low-cost land development system because it appears chaotic. Until now, people have obtained written permission from the municipality for settling on a plot, but only the approximate location and the size of the plot were referred to on the permission. Therefore, plots and circulation space have not been laid out clearly, and no clear records of land sales have been kept. As a result tenure is insecure and there are frequent ownership disputes and construction delays. Infrastructure has not been planned or provided in advance of new developments.

1/ This is the current free market price. The Government land was originally sold at a cost of between YR 10 and YR 15 per square meter.

123. Hodeidah. In Hodeidah, formal access to land tenure is even more difficult, especially for low-income groups. Although most land around the city belongs to the Government, there has been no way to purchase it or acquire secure tenure. About 50 percent of all households in Hodeidah were squatting on Government land in 1977. Many households obtain a certificate acknowledging their squatting, but they can still be displaced for new road construction without compensation. This insecure tenure is a serious disincentive to investment in permanent construction.

124. In addition to the problem of insecure tenure, the present land development system in Hodeidah is wasteful. Urban growth is not ccordinated with the development of infrastructure. Poor planning increases the cost of future infrastructure provision. The distribution of Government land produces no revenue to pay for urban services. However, the system does provide land to low-income families.

125. Other Cities. In Taiz and other cities, the informal land allocation process is not documented. However, Taiz is surrounded by mountains and ravines and faces severe topographical constraints in its future expansion.

(2) Building Materials

126. In Sana'a a large number of traditional building materials are used, ranging from sun dried mud blocks to burned bricks and from rough irregular stones to smoothly cut stones produced with labor intensive methods. Also, independent of the material used for the walls, the roof and intermediate floors of traditional houses are built of mud supported by sticks resting on wooden beams. If properly maintained, roofs constructed in this way are extremely durable and have an almost unrestricted life. Recently, the use of mud in wall and roof construction has almost ceased, even for low income housing. Aesthetic reasons, perceived high maintenance requirements, the scarcity of local wood and high cost of imported wood needed for mud roofs have all contributed to the discontinuation of this traditional material. Stones however continue to be in use. They are obtained from many informal quarries along the main roads on the outskirts of the city. The better grades of stones come from quarries some distance from Sana'a, and are transported by truck which accounts for a large part of their cost.

127. Of the non-traditional materials, hollow and solid concrete blocks are produced locally and are used for bearing walls and for partitions, interior walls, or as fill-in to the increasingly common concrete skeletons. Concrete elements are usually grossly overdesigned as a safety measure to allow for the bad quality of the aggregate, the predictable misplacement of reinforcement bars and the imperfect curing common to the very dry climate of Sana'a.

128. The cost of building materials has escalated sharply since 1975 and particularly between 1975 and 1978. More recently prices seem to have stabilized however and in some instances have even decreased from their 1979 peak (see Table 1 through 3 of Annex 5). Available data indicate that the

rise in the cost of cut stone has been especially high, rising over three-fold from mid-1975 to mid-1979 and continuing to rise at a low annual rate of 6 percent during 1980. The cost of gravel and cement rose respectively by 150 and 75 percent from mid-1975 to mid-1979 but since then their cost has dropped back to 1978 levels for a total increase over the 5-year period of 100 and 50 percent respectively. Other construction costs, in particular wages, have followed a similar path, growing at an annual rate of 38 percent between 1975 and 1979 with a recent rise at a more moderate 10 to 15 percent. Finally, total construction cost has peaked in 1978 or early 1979. Thus, the cost of a typical house of smoothly cut stone which had increased almost four-fold, from YR 800/m^2 in 1975 to YR 3000/m^2 by mid-1978, has declined to YR 2500/m^2 by late 1980. 1/ It is clear that the decline in construction cost has been more substantial than that of either labor or materials cost suggesting a decline in the excessive profit margins commonly found in the years of the remittance boom.

1.29 The change in construction costs over time has been closely tied to variations in the level of remittances which have been a major source of finance for housing construction. Thus the initial jump in construction cost was largely the result of the remittance boom between 1974 and 1977. It increased construction demand much more rapidly than construction capacity could be expanded, resulting in the cost increases described above. Still, residential construction permits increased from a low of 1,653 in 1974 to 4,147 in 1977 for the cities of Sana'a, Taiz, Hodeidah and Ibb. Gross fixed capital formation in YAR housing rose from YR 286 million in 1975/76 to YR 716 million in 1977/78 2/, (see Tables 6 and 19). This capacity increase was accomplished through adoption of non-traditional construction methods, increased import of building materials, expansion in the productive capacity of the domestic construction materials and construction industries, and through labor imports by foreign construction firms. The drop in construction prices after 1978/79 is therefore the result both of the gradual capacity rise prior to 1978 and the decline in demand signaled by the remittance decrease since 1978.

1.30 Prior to 1975 no foreign construction firms operated in Yemen. Since then about 10 foreign firms have established themselves in the YAR and

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1/ The Ministry of Public Works cites even more drastic evidence of a decrease in unit construction cost by as much as 30 percent in the two-year period between March 1978 and March 1980. Bids for five identical Health Centers in Sanham, Arhab, Shibam, Makhab and an unidentified fifth town, all similarly distant from Sana'a, were received in four to five months intervals between March 1978 and March 1980. The lowest bids for each project in chronological order were (million rials) YR 3.700, YR 3.300, YR 3.116, YR 2.860, and YR 2.500.

2/ This figure is in 1975/76 prices using a GDP deflator. The real growth would be slower if a correct but unavailable construction deflator were used.

Table 19: NUMBER OF RESIDENTIAL CONSTRUCTION LICENSES ISSUED AND LAND AREA COVERED BY LICENSE

Year	Sana'a		Hodeidah		Taiz		Ibb		Total	
	Licenses	m^2 area in 1000	Licenses	m^2 area in 1000	Licenses	m^2 area in 1000	Licenses	m^2 area in 1000	Licenses	m^2 area in 1000
1973	987	251	580	258	398	63	236	36	2,201	608
1974	818	272	258	98	411	78	166	27	1,653	475
1975	890	279	305	112	536	118	232	28	1,963	536
1976	1,598	552	661	325	944	242	541	52	3,744	1,170
1977	2,423	785	400	125	1,118	298	216	40	4,147	1,248
FY 1978/79	2,733	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	5,244	n.a.

Source: CPO

have been successful bidders on some of the very largest contracts, particularly those making use of non-traditional construction methods such as pre-stressed or pre-cast concrete. Frequently, these firms operate entirely with foreign labor. While this has eased local labor supply constraints, it has given rise to a growing concern regarding the ability of domestic firms to adopt new technologies and to remain competitive with foreign firms. Still, the number of domestic firms registered with the Ministry of Public Works for public contracts has nearly doubled in recent years and stands now at about 70 (see Table 20). Of these, seven firms are certified to be capable of handling individual contracts in excess of 25 million rials and another 20 can handle contracts of at least 10-15 million rials. These firms should be acceptable candidates for the joint ventures now required by the Ministry of Economy in all public contracts involving foreign construction firms.

Table 20: DOMESTIC CONSTRUCTION FIRMS REGISTERED WITH THE MINISTRY OF PUBLIC WORKS, DECEMBER 1980

Type	Experience	Individual contract capability	Number of firms
I	4-7 years minimum	25 million rials and more	7
II	3-4 years minimum	10-15 million rials and more	20
III	3 years minimum	2-10 million rials and more	10
IV	2 years minimum	5-2 million rials and more	33

Source: Ministry of Public Works.

131. Because of high prices, traditional building materials are being replaced in Government programs with imported materials and construction technologies. However, traditional mud, brick or stone construction provides the massive walls and roofs that are essential in the highlands of Yemen to create human comfort in the interior of buildings that are exposed on the outside to wide temperature fluctuations. The new building materials being introduced, aluminum and glass and other lightweight frame structures and components, will provide less protection from temperature fluctuations and will be less durable in Yemen's severe climate. In Hodeidah, different building

materials are required. The climate of the Tihama plain should permit the use of lightweight industrially produced materials, such as hollow bricks and fiberboards.

132. There is some scope for improving the system for producing and distributing building materials and reducing some of the inflationary pressure in construction. In the highlands some of the traditional building materials could be produced with less labor-intensive technology. New materials could also be produced which could be adapted to the existing building technology. For instance, solid cement blocks could be produced as an intermediate product between mud blocks and baked bricks. These would have a higher performance but would be more expensive than the cement blocks now being produced. They would be more socially acceptable than mud blocks which are not used anymore.

133. In the Tihama region traditional building materials are no longer produced (with the exception of thatch and woven reeds). The low productivity of traditional kilns has probably been responsible for the disappearance of locally produced bricks which have been replaced by hollow cement blocks. The construction of a new brick factory in the Tihama region has recently been completed and supplements production from an existing second factory. However, the capacity of these plants is very low and does not significantly contribute to the supply of building materials in Hodeidah.

134. The Government is very interested in developing the local building materials industry to increase the supply and to lower the cost of traditional as well as newer types of building materials such as ceramic tiles, terrazo tiles, lime-silica bricks and hollow concrete blocks. The Government is encouraging the private sector to take a large role in the building materials industry, but it is prepared to participate in joint ventures or promote projects on its own where appropriate. It has created the National Company for Industrial and Construction Materials to assist the materials industry and promote specific projects. A cement plant with a capacity of 500,000 tons/year, financed jointly by the government and the private sector, is now under construction at Amram, 40 km from Sana'a. An existing current plant at Bajil is expanded to 250,000 tons/year. A World Bank/UNIDO Cooperative Program has also prepared several specific building materials projects, among them a quarry and stone cutting project and a plant for the manufacture of precast cement pipes.

(3) Housing Construction

135. Until very recently, the Yemeni building tradition has provided an economical and owner-initiated means of maintaining a high standard of housing, sound in construction, exceedingly comfortable in a demanding climate, and rich in individualized building craft, design and ornamentation. Most houses are built by small craftsmen without contractors and often with active owner involvement. The enlargement, improvement and maintenance of houses is a continuous process which can be observed in all urban areas regardless of income levels. Incremental housing growth is a widely accepted system provided there is a large enough starting "cell" to accommodate the traditional way of life.

136. The construction cost for a finished house built by local contractors varies from a low of YR 1200/m^2 for buildings of roughly cut stone, to YR 1400-1700/m^2 for brick structures and from YR 2000/m^2 for a structure of concrete blocks with a roof of concrete slabs, to YR 2600-3000/m^2 for a luxury structure of smoothly cut stone. These costs include a minimum 25 percent contractors profit. Of the remainder roughly 40 percent are for labor and 60 percent for material and machinery. Costs below YR 1200/m^2 can be obtained only if the owner acts as his own contractor, builds with self-help or uses mud blocks. Mud block construction however has been virtually eliminated, even in rural areas. Most of the low income housing is built of roughly cut stone with some owner contracting at an average price of YR 1000/m^2. The cost of three room house is about YR 50,000, normally built over a period of 3-5 years.

137. Housing construction is somewhat less expensive in Hodeidah, but standards are also lower. A room of 12 square meters built of hollow concrete blocks with an asbestos roof costs about YR 5,000. However, thatch huts which account for about 4 percent of the housing stock, cost only about YR 1,000 and have the advantage of being more portable in case of eviction.

138. The cost of traditional construction has risen sharply in recent years (see Table 21). Wages for skilled and unskilled labor have been the most rapidly inflating component of construction. Wages for stone masons and carpenters are about 6 times higher than in 1975, and the cost of unskilled labor has risen about three times. The cost of rental housing and water has risen four-fold since 1975, considerably faster than the consumer price index that only doubled. Of course, income also increased and may have more than compensated households for the rapid growth in housing cost. While no time series exist on income, per capita GNP has nominally risen by 140% between 1974/75 and 1977/78 (40 percent in real terms). At the same time construction cost rose by 262 percent similar to the rent plus water increase, allowing for lags in the latter. Assuming unit income and price elasticities for housing, which roughly seem to hold in many countries, households in the market for new housing could afford one-third less housing in 1977/78 than in 1974/75. Clearly, it has become more difficult for many households to afford housing, a situation only slightly improving with the present construction cost stagnation.

139. On the construction site itself, the lack of productivity is not due to the lack of skills of masons and other craftsmen but to the erratic supply of building materials and to contracting practices which do not provide sufficient work incentive. The tradition of scheduling construction in small stages also contributes to low productivity of the building site. This could be improved if housing finance were available.

Table 21: ECONOMIC INDICATORS, 1972/73 TO 1980/81

	1972/73	1973/74	1974/75	1975/76	1976/77	1977/78	1978/79	1979/80	1980/81
1. Resident Population (in 000's)	4,994	5,082	5,178	5,282	5,395	5,518	5,648	5,785	5,921
2. GDP, at current market prices (YR million)	2,514	3,260	4,474	5,181	7,564	9,080	11,695	n.a.	n.a.
3. GNP, at current market prices (YR million)	3,019	3,788	5,387	7,338	11,579	14,300	n.a.	n.a.	n.a.
4. Net remittances (YR million)	505	504	859	2,057	3,791	4,905	4,041	n.a.	n.a.
5. Consumers price index (Sana'a)	100	154	203	237	293	348	425	470	n.a.
6. Rent plus water index (Sana'a)	100	138	203	286	373	513	713	811	n.a.
7. Urban wage rate (unskilled labor; Jan. 1; in YR)	n.a.	n.a.	15	20	38	50	60	67	70
8. Construction cost/m^2 (high quality structure; Jan. 1; YR)	n.a.	700	800	1,700	2,600	2,900	3,000	2,700	2,600

Source:

Item (1) U.N. estimates

Items (2) to (6): CPO

Items (7) and (8) Education Project Implementation Unit

(4) Housing Finance

140. Housing has traditionally been financed from households' savings. Until recently there was no institution providing long-term housing finance. The traditional system of self-help and staged construction has provided needed flexibility for low-income families with sporadic incomes. Families generally consider two rooms, a covered kitchen and a bathroom as a minimum standard for occupancy. After reaching this minimum, construction can continue for 3 to 6 years or longer. Houses are expanded horizontally first until they fill lots, then they are expanded vertically. It is common to build walls and leave them unused for years before completion. This is considered a secure form of savings, especially given the recent high rates of inflation. Because of the high costs of construction, families are also becoming increasingly dependent on remittances from workers abroad to finance housing. There is little alternative means of obtaining capital for housing for people who do not wish to emigrate and whose skills are required within the YAR.

(5) Housing Occupancy by Type

141. A simple housing typology has been developed for Sana'a which is outlined in Table 22 and presented more fully in Annex 4. Types A, B, and C comprise about 38 percent of the housing stock which is in the old part of the city built before the Revolution of 1962. Residential densities are low in this area although most buildings are multi-storied. The quality of materials and workmanship is high. Most of these houses are built out of cut stone and brick.

Table 22: HOUSING TYPOLOGY IN SANA'A /1

	Density When Fully Developed (Persons per ha.)	Ave. No. Rooms /2 Per House	% of Housing Stock
Type A = Multi-story one-family house in the old city. Stone and bricks, mostly built before the revolution	350	8	26.0
Type B = 2 to 3 story traditional house with garden. Stone and brick (bir el Azeb)	90	8	7.0
Type C = 2 to 3 story townhouse. Mud-built before the revolution. (gha el doufi)	380	3	5.0
Type D = Villas with garden. Stone-built after the revolution. (Safia)	125	6	20.0
Type E = One story house of sun-dried mud, stone or concrete blocks without a garden (Mouzaik).	340	3	40.0
Type F = Walk-up apartments	n.a.	4	1.0
Type G = One room dwelling with courtyard. Built out of scrap material.	n.a.	1	1.0

/1 This is based on acount of housing structures in Sana'a. Most of them are occupied by single families.

/2 Including kitchen.

Source: World Bank Mission Estimates.

142. Most of the new migrant families in Sana's are settling in the outlying neighborhoods which are represented by types D, E, and F. Type E contains most of the new low-income migrants. It consists of stone and concrete brick and mud-block houses, most of which have been built since the Revolution. This group generally has more limited access to basic urban services. The low income fringe areas of the city have vacant plots amounting to a total of about 300 hectares, enough land to accommodate three times the population of these areas. Some of these vacant plots are partially built; many others are involved in ownership disputes; others are owned by households

who have not mobilized enough savings to start building or are holding the land as a form of savings. The densification of these areas would be accelerated if the owners were provided with improved infrastructure, more secure tenure and housing finance.

143. Only garbage sweepers from the Tihama live in extremely low quality housing (Type G), but this is due to cultural factors rather than large differences in income. They are segregated from the rest of the population and lack of tradition of building with the materials available in Sana's. 1/

144. Densities in Sana'a are remarkably low, especially considering that most of the old city has multi-story construction. The most densely settled area in the city has 380 persons per hectare. Most households place a high priority on having adequate living space. Table 23 shows a breakdown of housing space standards in Sana's.

Table 23: HOUSING SPACE STANDARDS IN SANA'A 1/

Percentage of Houses	Type and Size
1%	Only one room and a yard.
45%	Average of two rooms and kitchen.
45%	Five to seven rooms in multi-story single family houses.
8%	Seven rooms or more
1%	Walk-up apartments with an average of three rooms.

1/ Based on a count of housing structures in Sana'a. Most of them are occupied by single families.

Source: Mission Estimates.

Even the lowest income families have an average floor area of 67 m^2. Most families consider three rooms a minimum necessity for traditional living, but an increasing number of families cannot afford to maintain this standard.

145. Another factor explaining low residential densities is that households do not tend to crowd together. Most households own their home. Apartment buildings and rental housing units are rare and mostly used by expatriates. According to the 1975 Census there were 22,547 enumerated residential buildings in Sana'a and 25,031 enumerated households or an average

1/ These people are called "Akhdams", which means servant in Arabic. Akhdams come from the Tihama coastal region. They are found in limited numbers in Sana's and Taiz where they are employed exclusively as street cleaners and live in shanty settlements isolated from the rest of the society.

of 1.1 household per building. 1/ Many single males leave their families in rural areas where housing is more affordable rather than crowd them into units which they would consider sub-standard. An estimated 30,000 single males live in Sana'a, Hodeidah and Taiz, many of whom are heads of households in rural areas.

146. It is possible to roughly correlate the housing typology of Table 22 with the income of the housing occupants. High income households live mostly in types D and F, low income households live in types C, E, and G, and a mix of income groups live in A and B (see also Annex 4).

147. Housing standards in Hodeidah are much lower than in Sana'a. Most low-income households live in thatch huts (about 42 percent of the housing stock). Low-income households do not have direct access to more durable materials as in Sana'a. Materials are expensive and can be obtained only through retailers. Densities are higher in Hodeidah than in Sana'a (an average of 80 inhabitants per hectare in Sana'a compared with 165 inhabitants per hectare in Hodeidah). This is explained in part by the unavailability of water in most parts of the city and the need for households to be close to the limited existing sources of fresh water (see Annex 4).

B. The Effective Demand for Housing

148. Any strategy for coping with the increasing needs for urban housing and the growing constraints in the housing delivery system, must begin with an assessment of the incomes of households requiring housing and of their ability to pay for new housing and urban services. Table 24 shows rough estimates of the new urban housing units required per year by income group in Sana'a, Hodeidah and Taiz during the 1980-85 period. It uses the broad assumption that housing needs from urban population growth and depreciation of the existing housing stock will be distributed proportionately among income groups. Over 4,000 units per year will be required by families with incomes under YR 2,000 per month. This does not take into account the existing backlog of housing needs which is difficult to assess, but is almost certainly concentrated among the lowest income groups.

149. During recent decades, most urban households with incomes of less than YR 2,000 per month have settled in the low-income neighborhoods outside of Sana'a (Type E) and in the squatter settlements of Hodeidah. There are no estimates of the numbers of units currently being produced for these groups. However, there are serious constraints in the traditional housing delivery

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1/ The Census defines a residential building or house as "an occupied or empty dwelling ... which has its own entry on the ground floor." Buildings with separate housing units but a single ground entrance were thus counted as one unit. (See also Final Report on the Air Photo Interpretation Project of the Swiss Technical Cooperation Service, Bern 1978.) The term dwelling unit or housing unit should therefore not be applied to these buildings.

Table 24: DEMAND FOR HOUSING BY INCOME GROUP IN SANA'A, HODEIDAH AND TAIZ (1979)

Monthly Income (YR per household)	Income Distribution: Percentages of Households	Income Distribution: Cumulative Percentage	Estimated Annual Housing Need (1 of units) (1980-1985)	Percent of Income for Housing	Potential Monthly Payment	Potential Downpayment (%)	Capital Cost Affordable (YR) /2
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
0- 999							
0- 999	10	10	650	15	115	5	11,495
1000-1249	15	25	975	20	225	10	23,736
1250-1499	16	41	1040	25	345	10	30,396
1500-1999	23	64	1495	25	435	10	45,890
2000-2499	9	73	585	25	560	15	62,553
2500-2999	7	80	455	25	685	15	76,515
3000-3499	5	85	325	25	815	15	91,037
3500 and over	15	100	975	20	900	20	106,814
	100		6500				

/1 Based on the low population estimates/projections of Table 9 that imply 5,700 new households per year and depreciation of 1% per year (800 units) of the existing housing stock.

/2 Assumes financing available at 12% for 25 years.

system which will make it difficult to produce adequate supplies of housing and urban services for these groups which account for the majority of housing demand.

150. It is presently difficult for low-income families to afford housing. Column 8 of Table 24 shows the capital cost for housing which would be affordable if financing were available, at 12 percent for 25 years, given assumptions for the amount of income available to amortize loans and potential downpayments. Figure 1 illustrates the alternatives for providing housing for urban households in the 15th percentile (10th percentile in Sana'a). Given the high costs of construction, it is very difficult for this group to afford 2 libnas of land (88 m^2), which is the minimum considered acceptable, and a core house. For example, if 2 libnas of land and a core house of 20 m^2 are desired, a land price of only YR 65 per square meter can be afforded. Such land is available only on the urban fringes.

151. The above figures illustrate the difficulty of providing adequate housing even if financing were available. This shows the importance of improving the efficiency of the housing delivery system.

C. Current Housing Policies and Programs

1. Land Allocation

152. Because the informal system for land allocation in Sana'a has been chaotic and has not been carried out in conjunction with infrastructure works, the Government is contemplating stopping it until a new system is implemented. About 35 percent of the population of Sana'a, mostly the lower income households, have benefited in the past from this sytem. If land is not made available to low-income households, the pressure on land prices in existing developments will increase, which will place the cost of land and shelter even further beyond the reach of low-income households.

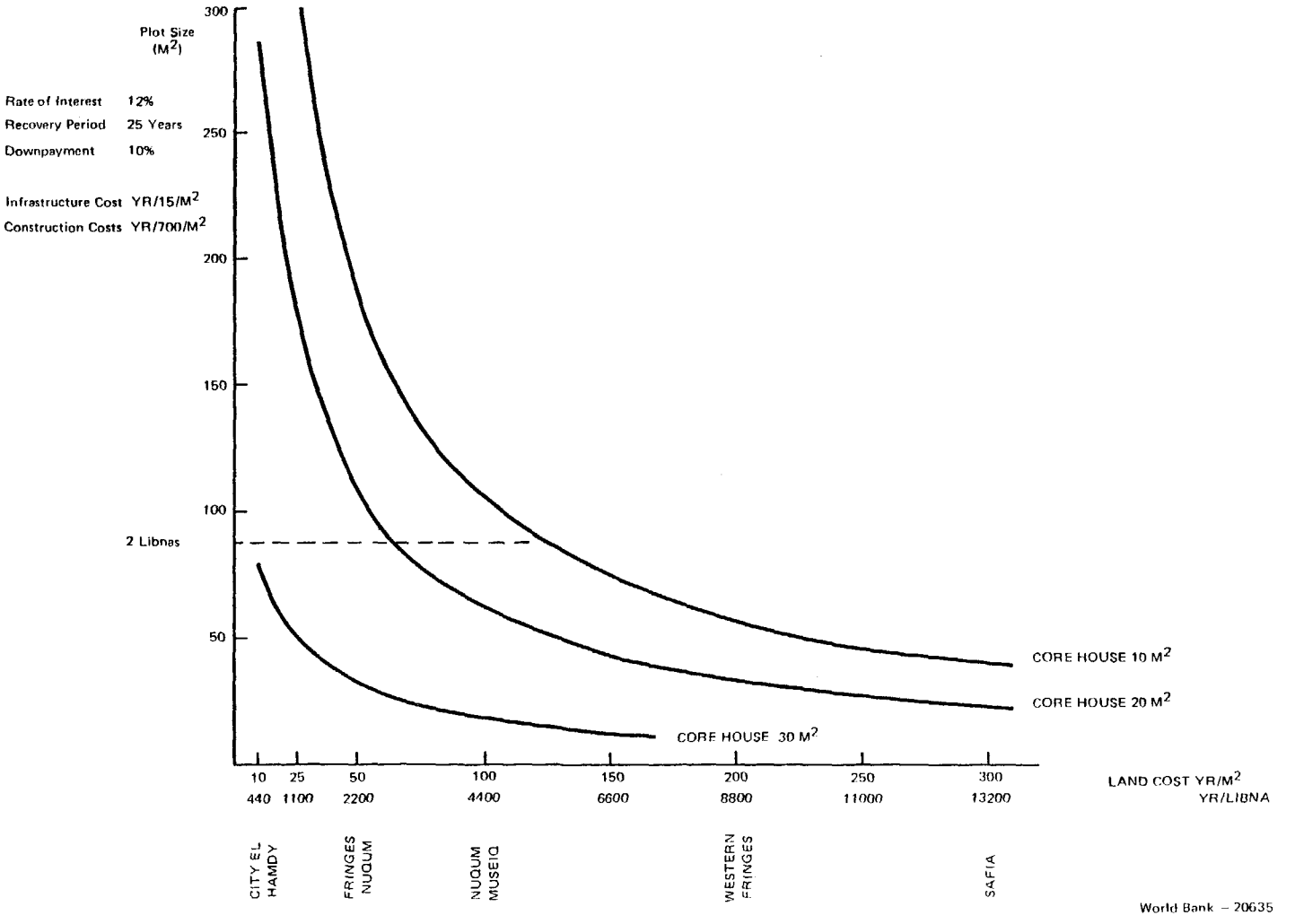
153. Squatting on Government land in Hodeidah has not yet been stopped. Such a decision would have an especially severe impact since 70 percent of households in Hodeidah have obtained land through squatting in the past.

154. The system for land registration is inadequate and it will be some time before a more efficient system can be developed to replace it. This problem is even more acute in Hodeidah.

155. The Government also wants to implement Master Plans by providing adequate rights of way and infrastructure in new areas (para. 42). It is hoped that a new system of improved land use controls and inter-institutional coordination can replace the informal land development system. However, it is unlikely that such a system can be initiated soon enough to replace the supply of new land for low-income families.

Figure 1:

ALTERNATIVE PLOT AND CORE HOUSE SIZE
AFFORDABLE FOR HOUSEHOLD AT THE 10th PERCENTILE SANA'A
(Monthly Payment YR 225)



World Bank – 20635

2. Housing Finance (see Annex 6)

156. The rapid growth in money income has led to a spectacular increase in overall savings. In 1976/77 gross national savings reached the equivalent of 25 percent of GNP, a very high level for a country of low per capita income. Most of this savings comes from worker remittances and is held in cash as indicated by the very low percentage of quasi money in the money stock (12 percent in 1977/78).

157. Existing financial institutions have failed to capture this savings, partly due to their limited outreach, the traditional behavior of the population regarding savings and the negative real interest rate on time deposits. Therefore, the accumulation of savings by financial intermediaries has been limited and has largely benefited the industrial and trade sectors.

158. A Housing Credit Bank (HCB) was created in August 1978 with an equity of YR 100 million. Until mid-1980 it has granted about 600 loans, of which 66 percent were for home improvements. The average loan amount was YR 90,000 with a maximum of YR 150,000. Financial terms to individual borrowers average about 9 percent for 15 years (since November 1980, the maximum rate is 11 percent). The average loan was made to households with minimum monthly incomes of YR 2,500 (70th percentile); more than 70 percent of the beneficiaries were civil servants.

159. Although the Housing Credit Bank can grant loans of amounts as low as YR 7,000, the conditions for borrowing (steady income, 30 percent equity, and legal title to the land) and the previous operations of the HCB suggest that the lowest income groups will be largely excluded.

160. Overall financial constraints limit the HCB from expanding its programs to a large scale and to lower income groups. Its interest spread (it lends at two to three points above the cost of funds) is too small for it to operate at a profit, mostly because of its low lending volume, inexperience and because most loans are small and made to individuals which increases operating costs. The ability of HCB to increase its capital base through an increase in interest rates paid on deposits is limited because these rates are regulated by the Central Bank. In any case, it is highly unlikely that higher rates on deposits alone would have a significant impact on savings. The capital base must therefore be raised through a variety of savings promotion schemes and/or by increasing the equity base of the bank.

3. Government Housing Programs

161. Faced with increasing costs for labor-intensive traditional Yemeni housing construction, the Government has turned to imported building materials and techniques. Given the high costs of labor in the YAR, some of these techniques may well be cheaper in the short-run. There are, however, many reasons for retaining the traditional Yemeni construction but modifying it to increase its efficiency and limit cost inflation.

162. The Government has undertaken one housing project in Hodeidah for port workers which was never properly finished and was invaded by squatters. Table 25 outlines the Government housing projects which are now being designed or constructed in Sana'a. With the exception of the UN-sponsored low-cost housing scheme for sweepers for which the plans have not yet been finalized, the projects will be built by foreign contractors using foreign labor and multi-story construction. As outlined below, many of the details of the projects have not yet been finalized:

(i) Target groups are identified though usually not in economic terms. The capacity to pay and the cultural acceptability of the design and standards have also not been analyzed.

(ii) Infrastructure cost (on-site and off-site) has not been evaluated or even designed into some of the projects.

(iii) Financial terms to the beneficiaries have not been finalized.

(iv) The demand for the types and numbers of units being produced has not been evaluated, but in general a "trickle down" phenomenon is expected so that low-income groups will benefit indirectly from the decreased pressure in the housing market. A total of about 5,300 units are planned or near completion, which is equivalent to 15 percent of the present housing stock in Sana'a and is three times the annual new household formation. This will have a sizeable impact, but production is delayed in several projects and the availability of new units will be phased over a period of years.

163. Imported materials and technologies may be competitive with traditional building materials on a cost basis, although this is yet to be fully proved. 1/ It should be noted, however, that new technologies limit the opportunity for households to use traditional self-help and staged construction methods which are especially important for low-income families with small savings, sporadic incomes and limited access to credit. Efforts to improve Yemen's housing construction should be designed to strengthen and complement rather than completely replace existing small contractor and self-help building practices. Attention should, in this context, also be given to the need to adapt new and imported materials and technologies to local requirements and to the need to train local labor in their use.

1/ Some contractors appear to have underbid on the new projects to gain access to the Yemeni market.

Table 25: GOVERNMENT HOUSING PROJECT CHARACTERISTICS IN SANA'A, AS OF DECEMBER 1980

	Al Hamdi Housing Project	Labor Housing, Sana'a	Military Housing Project	First Cooperative Housing Society	University Housing	Street Sweepers Housing Project
Developing Agency:	Yemen Bank for Reconstruction and Development	Ministry of Labor	YAR Military	First Cooperative Housing Society	Sana'a University	Ministry of Municipalities and Housing, with UNCDF and WFP
Schedule:	YR 160 million has been spent, 20% of the project but none of the housing units are completed. Work has stopped for 18 months but will resume after financing by the HCB can be arranged	Construction start several times postponed. Planned completion 30 months after ground-breaking. To be built with the technical assistance provided by North Korea, which will supply cement and steel	Under construction, to be completed by January 1981	4 months lead time, 71 week construction period. Lead time starts January 1981	Completed October 1980, except for a guest house under construction	Indefinitely delayed, all information as of 1979
Number of Units:	2,000	2,000 (1,250 west, 750 east of Ring Road)	200	400	144, plus 16 room guest house	600
Projected Area (ha):	42	27	5	17.6	on campus	8.8
Gross Density:	Assuming 5.3 persons per housing unit, 252 persons/ha	Assuming 5.3 persons per housing unit, 393 persons/ha	Assuming 5.3 persons per housing unit, 212 persons/ha	Assuming 5.3 persons per housing unit, 120 persons/ha	Undetermined (total number of residents 552, without guest house)	
Housing Type:	4-story walk-up apartments, 16 flats per building, 8 per staircase. Construction in precast concrete. Each unit 3 bedrooms, 1½ baths	2-story attached townhouse units with yard. Construction completely in reinforced concrete. Each unit kitchen, bath living, storage, 2 bedrooms	2-story apartment buildings, 4 units per building. Each unit with living, complete kitchen except appliances, 2 bedrooms, 1½ baths	1-story concrete block, concrete slab roof, 5 rooms plus kitchen, 2 baths, plot walled	Walk-up apartments, 32 with 1 bedroom, 1 bath; 32 with 2 bedrooms, 1 bath; 80 with 3 bedrooms, 2 baths	n.a.
Plot Size:	N/A [1/]	84.85 m^2	N/A	352 m^2	N/A	100 m^2
Floor Area (m^2/unit):	122, including allocation of common areas	58.6	107	125	110 average	n.a.
Construction Cost per m^2:	YR 1,475 (includes allocation of common areas)	YR 1,190 (estimate on low side!)	YR 1,775 (includes allocation of common areas)	YR 1,904 (excluding wall, incl. water, electricity, septic tank)	YR 1,409 (without guest house, including land, excluding infrastructure)	n.a.
Cost per Unit (Superstructure only):	YR 180,000	YR 69,750	YR 190,000	YR 238,000 plus wall YR 27,000	YR 155,000 (comment as per cost/m^2)	
Land Cost per m^2:	YR 250	N/A - Government owned	N/A - Government owned	YR 56.8 (includes allocation of common areas)	N/A	n.a.
Land Cost per Unit:	YR 52,500	N/A - Government owned	N/A - Government owned	YR 25,000 (includes allocation of common areas)	N/A	YR 90
Infrastructure Cost:	YR 90,000,000 (YR 45,000/unit)	YR 36,000,000 (YR 18,000/unit)	n.a.	Water, sewer, electricity included in superstructure cost	YR 2,700,000	n.a.
Type of Infrastructure:	Private sewer collection plus treatment. Public water, electricity. Roads, parking, parks, 3 mosques, 2 primary schools, police station, telephone exchange	Water, sewer in 2nd phase; electricity, road, primary school, police station, mosque	Private sewer system, municipal water, electricity hook-up	Unpaved road, storm drainage, mosque, school, clinic, store	Municipal water, private sewer, road, community room, tennis court, volley ball court	n.a.
Own/Rent:	Mixed	Open	Rental	Own	Occupancy without charge	n.a.
Source of Financing:	Initially - Yemen Bank Now - HCB, to be arranged	Not determined	Government	Owner equity YR 35,000. For the remainder mortgage by HCB at terms of up to 15 years, 5-7% interest, 1½-2% fee	Kuwait	n.a.
Target Group:	Middle/upper income	Textile workers preference, income YR 1,000-1,700/month	Families of the martyrs of the Civil War, income not available	Stated average monthly income of owners YR 2,000 after taxes, but actual income probably closer to YR 4,000 net	University professional	Street sweepers

1/ Not applicable.
Source: Ministry of Public Works.

VI. A STRATEGY FOR URBAN DEVELOPMENT IN THE YEMEN ARAB REPUBLIC

A. Existing and Potential Urban Problems

164. From the preceding chapters, it is evident that the Yemen Arab Republic is not yet faced with urban problems of an overwhelming scale. Urban population growth is not yet excessive, and it is relatively well balanced regionally. Urban unemployment is not a particular problem. Nevertheless, there are several specific problems related to urban expansion which can already be identified:

(1) The supply of land for new urban development, especially land which can be conveyed with secure tenure to low-income groups, has become more constrained.

(2) The provision of urban infrastructure is generally inadequate, especially to low-income groups. Additional facilities with affordable levels of services are required in many existing urban neighborhoods. The provision of infrastructure is not coordinated with new urban development. The maintenance and operation of existing urban infrastructure is also inadequate due to the limited capacity of the urban administration system and the lack of financing (Chapter II).

(3) Housing construction and building materials costs have risen sharply in recent years which have placed an increased financial burden particulary on low-income groups who require adequate shelter.

(4) Institutional housing finance is very limited and is virtually, unavailable to low-income groups.

(5) Employment at all levels is characterized by low levels of productivity. Technical and managerial skills are particularly scarce.

165. Urban growth can be expected to continue for some time. The urban population of the YAR may rise from less than 10 percent of the resident population to more than 20 percent by the year 2000. The absorptive capacity of the agricultural sector is limited. The country's level of short term migration has levelled off and cannot be expected to grow significantly, particularly since Yemeni labor is not of the high skill variety most likely to be in growing demand in the future in labor importing Gulf states.1/ Hence the country must increase urban employment opportunities by a factor of four by the year 2000.

1/ See I. Serageldin and J. Socknat "Migration and Manpower Needs in the Middle East and North Africa, 1975-85", Finance and Development, December 1980.

166. There is a possibility that much of the expected urban growth in the YAR will be distributed more evenly throughout the country than in other countries. Although this may somewhat mitigate the severity of the urban problems, it will contribute to administrative difficulties.

167. The existing administrative system for urban development is inadequate. It has not been able to respond to the existing problems noted above. In recent years the administrative system has developed as a highly centralized bureaucracy. This is understandable due to the need to use the limited technical personnel efficiently. However, given the existing tendencies for more dispersed urban growth, it may prove inefficient in the long-term.

B. Long-Term Urban Development Strategy

168. The principal element of an urban development strategy for the YAR must be the creation of a viable administrative system. This will require a vast improvement in the technical capacities of all types of administrative staff. Training programs will have to be applied at all levels, and the salaries of public employees will have to be raised to be competitive with the private sector. Moreover, in the future many of the responsibilities for urban development will have to be delegated by the Central Government to the municipalities. This is a logical long-term strategy because of the expected regional structure of urban development and because of the relative efficiency of providing many urban services at the local level.

1. Improvement of National Level Urban Administration

169. The Central Government should strive to decentralize, as much as possible, responsibilities for urban project implementation. It should only retain responsibility for establishing general policy guidelines for planning, land use, infrastructure development and housing construction. The decentralization of responsibilities should be combined with an effort to maximize private initiative. The following specific actions are required as part of this effort:

- Legislation is required to enable improved control over urban land use and development.

- The Government should establish the legal basis for more autonomous local development. Legislation will be required (i) to define the types of capital investments and services which municipalities will be responsible for and (ii) to enable local revenue collection to finance and maintain new services and investments.

- The Government should assure that an adequate system of financial intermediation be established so that available savings can be channeled into urban and small industrial investments.

- Too many minor decisions require consideration and approval at the Ministerial level of government. Efficient government requires the delegation of decisions to their appropriate level of authority. To avoid bottlenecks and unnecessary delays, day-to-day land use and urban development or management decisions should be delegated to the deputy minister and/or to department chiefs.

2. Improvement of Municipal Level Administration

170. The municipalities should become increasingly responsible for local urban development. Although the Central Administration could retain responsibilities for implementation of critical infrastructure works, all other works should be the responsibility of the municipalities. Municipalities should also be responsible for ensuring the provision and maintenance of urban services such as street maintenance, solid waste removal and emergency services. This range of services could be provided through a wider and more efficient municipal tax system.

171. The municipalities should have more control over land use and land registration. This will be required to undertake land acquisition and development, especially for new low income settlements and to administer community improvement programs. Related to this, a local capacity is also needed for the registration of urban land and the conveyance of secure tenure. This is essential both to implement new urban development projects and to establish any local urban land taxation system.

C. Short-Term Urban Development Strategy

172. The above-outlined strategy is clearly a long-term and ambitious undertaking. A more immediate action plan to deal with urban development problems should be formulated. In formulating the action plan, three basic objectives are recommended:

(1) The supply of land which can be conveyed with secure tenure, urban infrastructure, housing and housing finance must be increased to deal with current and future urban growth.

(2) While increasing the supply of land, attention must also be taken to direct it more equitably toward lower income groups.

(3) Alternative sources of funds should be explored to finance housing and infrastructure both at the central and local levels.

173. Given the existing administrative constraints in the YAR, a strategy to achieve these objectives must be designed with the following two policy principles in mind:

(1) The strategy should be easy to implement. It should not call for broad changes in traditional housing delivery which would be difficult or inefficient to implement. The Government should not undertake activities which can be more efficiently carried out by the private formal and informal sectors. This implies, for example, that the existing traditional building system should be modified to meet the objectives of increased supply and more equitable distribution and major changes in factor costs, including labor rather than replaced indiscriminately by new imported technologies which ignore local architecture and needs. The strategy should use existing institutions where possible. It should work towards improved coordination among the institutions in the sector and the elimination of overlapping responsibilities. The limited capacities of the urban administration should be focused on improving the living conditions of the lowest income groups.

(2) Where institutional changes are called for, the strategy must focus on increasing the ability of the Government to manage the urban sector. The lack of managerial and administrative capacity at all levels is the most serious constraint to providing an increase in land, housing and urban services, and to maintaining order in urban growth. This problem must be addressed directly if a strategy is to be successful.

D. The Recommended Action Plan

174. An action plan is recommended which will focus on institutional development in the urban sector. The following types of institutional and managerial improvements are included in the recommended action plan:

(1) Land Development and Registration. An institutional capacity is required to undertake land acquisition and development, especially for new low-income settlements, and to carry out community improvement programs. Related to this, an institutional capacity is also needed for the registration of urban land and the conveyance of secure tenure. At the same time, the relationships between land use planning and the provision of infrastructure on a sectoral basis should be more clearly defined for the urban areas. To improve the provision of infrastructure at affordable standards to new and existing low-income urban areas, land use planning should be more closely coordinated with the agencies charged with the provision of streets, drainage, water, sanitation and electricity. This will require a clearer understanding and definition of the responsibilities for planning and implementation.

(2) Municipal Administration and Finance. An improved municipal administration system is required to ensure the regular provision and maintenance of urban services. The experience of the LDAs in managing certain services should be used and ways of associating the LDAs with the municipalities should be investigated. The levy of taxes to maintain urban services should be started on an experimental basis for specific projects catering to well-defined populations.

(3) Building Materials. There is a need to review more closely the technical and economic characteristics of both traditional and imported building materials actually used or proposed to use in the Yemen Arab Republic. This could also involve testing of materials and construction methods on an experimental basis in the context of carefully selected projects. The purpose would be to develop and put into practice simple guidelines and criteria for the choice of building materials and construction methods. Building advisory services should eventually be provided to architects, engineers and contractors. Institutional reponsibilities for the proposed activities should be explored at an early stage. Consideration should be given to the need to integrate such proposed activities with actual housing construction responsibilities. In this respect, it should be noted that two studies now under way should provide useful insights: (a) promotion of selected building materials through the Bank/UNIDO Program and (b) a study on the construction industry financed under Sana'a Second Water Supply and Sewerage Project, Credit 670-YAR.

(4) Housing Finance. An improved institutional structure is required which is capable of providing housing finance to a wide range of income groups. This will require adequate interest rates and collection procedures to recover the capital invested in new housing, land and infrastructure. At the same time, eligibility criteria should be flexible enough to meet the needs of even the lowest income groups. The existing Housing Credit Bank may be an appropriate vehicle for providing housing finance to a wider base of the population. It will, however, require further institutional development and additional financial resources.

175. The above action plan should be immediately begun. However, during implementation many details should be further elaborated, especially in the following areas:

(a) The structure of public management and administration should be more thoroughly defined, particularly the long-term role of local administrations.

(b) The traditional land tenure system should be more thoroughly documented and its role in future development, if any, should be defined.

(c) Appropriate construction techniques should be explored which reflect changing factor costs, architectural tradition, needs and long term employment requirements.

(d) Means to mobilize additional financial resources should be investigated.

(e) Appropriate means to finance municipal services should be further investigated.

(f) Means should be sought for improving labor skills and productivity.

Annex 1

GENERAL STATISTICS

Tables

Table 1: RESULTS OF THE POPULATION CENSUS, FEBRUARY 1975

	Official	Swiss Team	World Bank
Resident Population	5,258,578	4,726,042	5,258,578
Enumerated	4,540,278		
Underenumeration of households	423,800	137,141	
Excluded females	163,800	-	
Technical exclusions	260,000	137,141	
Uncovered areas	294,500	48,602	
Population Outside Country	1,234,000		
Short term migrants	740,000		
Enumerated, Gulf States			421,000
Long term emigrants	493,600		
Total Population			
Resident plus all migrants	6,492,530		
Resident plus short term migrants			5,679,578

Sources: IBRD, "Manpower Development in the YAR", 1980.
Central Planning Organization, Final Results from the 1975 Population Census.
Final Report on the Airphoto Interpretation Project of the Swiss Technical Cooperation Service, Berne, 1978.

Table 2: ENUMERATED AND ADJUSTED POPULATION, SHORT TERM MIGRANTS AND SEX RATIO BY GOVERNORATES

(Final Results of the February 1975 Census and Subsequent CPO Adjustments)

Governorate	Enumerated Population			Population Adjustments		Total Adjusted Resident Population				Total Population /1		
	Absolute Number	Sex Ratio	Percent of Total Pop.	Uncovered Areas	Unenumerated females, other reasons	Absolute Number	Sex Ratio	Percent of Total Pop.	Short Term Migrants	Absolute Number	Sex Ratio	Percent of Total Pop.
Sana 'a	819,010	95.5	18.0	60,079	69,121	948,210	89.5	19.1	93,039	1,041,249	99.6	17.4
Taiz	877,777	84.3	19.3	-	75,943	953,720	79.3	19.2	168,081	1,121,801	96.7	18.7
Hodeidah	673,113	101.7	14.8	-	56,209	729,322	94.9	14.7	78,253	807,575	105.9	13.5
Ibb	789,494	88.4	17.4	-	67,669	857,163	104.5	17.3	163,831	1,020,994	101.9	17.0
Dhamar	453,888	86.8	10.0	-	39,037	492,925	81.7	9.9	75,261	568,186	96.8	9.5
Hajjah	394,827	95.6	8.7	-	49,618	444,445	104.7	9.0	41,375	490,820	100.2	8.2
Beida	159,129	81.8	3.5	-	20,447	179,576	77.5	3.6	50,077	229,653	103.9	3.8
Saadah	158,410	90.4	3.5	58,135	21,729	180,139	86.5	3.6	30,567	268,841	96.9	4.5
Mahweet	175,509	87.1	3.9	-	18,766	194,275	82.0	3.9	29,779	224,054	99.5	3.7
Mahrib & Jawf	39,121	99.5	.9	176,286	5,261	44,382	91.4	.9	5,137	225,805	93.9	3.7
TOTAL	4,540,278	91.0	100.0	294,500	423,800	4,964,078	85.6	100.0	740,400	5,998,978	99.9	100.0

/1 Consists of the adjusted resident population plus short term migrants, but excludes long term emigrants.

Source: Final Results of the Population Census, Statistical Office of the CPO, December 1980.

Table 3: RESIDENTIAL BUILDINGS, HOUSEHOLDS AND THE ENUMERATED POPULATION IN URBAN AREAS (GOVERNORATE CAPITALS AND SETTLEMENTS OF 2,000 INHABITANTS OR MORE) IN THE YAR, 1975 CENSUS

District	Uzlah	Town	Residential Buildings	House-holds	Enumerated Population			Sex Ratio	Households per Building	Average Household Size
					Male	Female	Total			
Sana'a Governorate			26,540	29,332	88,453	69,273	157,726	1.28	1.11	5.4
Thula'a	Thula'a	Thula'a	386	484	1,018	1,120	2,138	.91	1.25	4.4
Manakhah	Manakhah	Manakhah	612	571	1,366	1,496	2,862	.91	.93	5.0
Khamir	Niai	Khamir	566	662	1,838	1,627	3,465	1.13	1.17	5.2
Thula'a	Hababah	Hababah	354	542	1,100	1,256	2,356	.88	1.53	4.3
Sana'a	Sana'a	Sana'a	22,547	25,031	77,295	58,330	135,625	1.33	1.11	5.4
Amran	Amran	Amran	910	1,005	2,773	2,430	5,203	1.14	1.10	5.2
Bani Lharith	Sods Arrawdah	Arrawdah	831	710	2,023	2,000	4,023	1.01	.85	5.7
Bani Lharith	Sods El Qarya	Qaryit Elqabe	334	327	1,040	1,014	2,054	1.03	.98	6.3
Taiz Governorate			14,536	15,504	50,555	37,674	88,229	1.34	1.07	5.7
Askshamatein	Zabhan	Attorbah	487	560	1,388	1,137	2,525	1.22	1.15	4.5
Mawzi'i	Mawzi'i	Mawzi'i	436	436	1,029	1,131	2,160	.91	1.00	5.0
Makha	Azzahari	Makha	768	757	2,060	1,764	3,824	1.16	.99	5.1
Attaiziyah	Taiz	Taiz	12,845	13,751	46,078	33,642	79,720	1.37	1.07	5.8
Hodeidah Governorate			37,587	37,752	85,713	80,303	166,016	1.07	1.00	4.4
Hodeidah	Hodeidah	Hodeidah	15,787	14,539	40,743	32,152	72,895	1.27	.92	5.0
Marawa'ah	Marawa'ah	Marawa'ah	1,372	1,262	3,172	3,078	6,250	1.03	.92	5.0
Marawa'ah	Marawa'ah	Qote'ia	949	1,019	2,143	2,347	4,490	.91	1.07	4.4
Azzaydiyah	Azzaydiyah	Azzaydiyah	1,087	1,025	2,573	2,570	5,143	1.00	.94	5.0
Azzaydiyah	Al Garayeh	Addahi	758	684	1,632	1,799	3,431	.91	.90	5.0
Azzaydiyah	Al Garayeh	Kadan	438	439	1,050	1,027	2,077	1.02	1.00	4.7
Mishlaaf	Bani Albirrah	Mighlaaf	575	716	1,664	1,870	3,534	.89	1.25	4.9
Maqbarah	Robiilqamah	Aleef	354	751	874	1,625	2,499	.54	2.12	3.3
Maqbarah	Maqbarah	Maqbarah	741	741	1,082	1,456	2,538	.74	1.00	3.4
Azzarrah	Alwadi	Azzahrah	607	613	1,541	1,731	3,272	.89	1.01	5.3

District	Uzlah	Town	Residential Buildings	House-holds	Enumerated Population			Sex Ratio	Households per Building	Average Household Size
					Male	Female	Total			
Hodeidah Governorate (cont'd.)										
Allohayyah	Al Bahimah	Al Khoobah	522	525	1,285	1,252	2,537	1.03	1.01	4.8
Allohayyah	Bani Gami'i	Allohayyah	666	532	1,147	1,313	2,460	.87	.80	4.6
Bajil	Hamadi	Bajil	1,375	1,284	3,197	3,135	6,332	1.02	.93	4.9
Addirhmy	Gaabah	Addirihmy	1,037	924	1,839	1,734	3,573	1.06	.89	3.9
Mansourah	Mansourah	Mansourah	1,048	1,005	2,076	2,315	4,391	.90	.96	4.4
Beit El Faqeeh	Attarafash	Beit el Faqeeh	2,891	2,524	5,937	6,096	12,033	.97	.87	4.8
Al Khokhah	Alameess	Al Khokhah	2,197	1,013	1,966	2,478	4,444	.79	.46	4.4
Heiss	Heiss	Heiss	909	841	2,049	2,316	4,365	.88	.93	5.2
Zabeed	Attiheitah	Attiheitah	809	1,010	2,148	2,065	4,213	1.04	1.25	4.2
Zabeed	Attireibah	Attireibah	633	556	1,116	1,238	2,354	.90	.88	4.2
Zabeed	Al Mafaslah	Shohbeid	492	552	1,132	1,189	2,321	.95	1.12	4.2
Zabeed	Al Mafaslah	Zabeed	1,872	1,729	4,289	4,521	8,810	.95	.92	5.1
Zabeed	Al Badwah	Assouq	468	468	1,058	996	2,054	1.06	1.00	4.4
Al Beida Governorate			3,969	3,588	9,016	10,660	19,676	.85	.90	5.5
Al Beida	Al Beida	Al Beida	2,145	1,947	4,740	5,679	10,419	.83	.90	5.4
Radaa	Radaa	Radaa	1,410	1,318	3,202	3,693	6,895	.87	.93	5.2
Gobon	Gobon	Gobon	414	323	1,074	1,288	2,362	.83	.78	7.3
Saddah Governorate			830	815	2,004	1,802	3,806	1.11	.98	4.7
Saddan	Saddah	Saddah	830	815	2,004	1,802	3,806	1.11	.98	4.7
Dhamar Governorate			3,802	3,151	9,444	10,096	19,540	.94	.82	6.2
Dhamar	Dhamar	Dhamar	3,802	3,151	9,444	10,096	19,540	.94	.82	6.2
Mahrib Governorate			465	375	1,336	1,158	2,494	1.15	.81	6.7
Mahrib	Mahrib	Mahrib	48	48	270	22	292	12.27	1.00	6.1
Hareeb	Hareeb	Hareeb	417	327	1,066	1,136	2,202	.99	.78	6.7

District	Uzlah	Town	Residential Buildings	House-holds	Enumerated Population			Sex Ratio	Households per Building	Average Household Size
					Male	Female	Total			
Hajjah Governorate			1,810	1,662	4,231	3,965	8,196	1.07	.92	4.9
Hajjah	Hajjah	Hajjah	646	634	1,790	1,504	3,294	1.19	.98	5.2
Midi	Midi	Midi	543	432	1,040	1,015	2,055	1.02	.80	4.8
Abis	Bani Awwab	Arranaq	621	596	1,401	1,446	2,847	.97	.96	4.8
Mahweet Governorate			874	887	2,178	2,194	4,372	.99	1.01	4.9
Mahweet	Mahweet	Mahweet	421	446	1,197	1,095	2,292	1.09	1.06	5.1
Shibam	Shibam	Shibam	453	441	981	1,099	2,080	.89	.97	4.7
Ibb Governorate			8,272	8,813	22,852	21,617	44,469	1.06	1.07	5.0
Ibb	Ibb	Ibb	2,914	3,273	9,146	8,350	17,496	1.10	1.12	5.3
Jiblah	Jiblah	Jiblah	761	982	2,419	2,586	5,005	.94	1.29	5.1
Qootobah	Qootobah	Qootobah	440	452	1,752	1,421	3,173	1.23	1.03	7.0
Annadirah	Hazeeb	Annadirah	394	404	997	1,061	2,058	.94	1.03	5.1
Zissifaal	Khenwah	Al Qaidah	1,828	1,737	3,885	3,384	7,269	1.15	.95	4.2
Zissifaal	Wadidibaa	Zissifaal	349	437	995	1,031	2,026	.97	1.25	4.6
Yareem	Yareem	Yareem	1,586	1,528	3,658	3,784	7,442	.97	.96	4.9

Source: CPO and Mission estimates.

Table 4: GOVERNMENT EMPLOYEES BY MINISTRIES, GOVERNORATES AND SEX

(1975)

	Sana'a	Taiz	Hodeidah	Ibb	Dhamar	Hajja	Saada	Beida	Mahweet	Mareb	Total M	Total F	Total T
Offices of the President & Prime Minister	700	-	-	-	-	-	-	-	-	-	682	18	780
Interior	11,615	-	-	-	-	-	-	-	-	-	11,615	-	11,615
Justice	364	128	83	112	61	126	62	22	28	-	986	-	986
Education	1,452	934	639	373	221	521	76	81	86	55	4,147	291	4,438
Health	907	581	381	144	79	70	17	20	-	-	1,783	416	2,199
Agriculture	189	68	158	13	-	-	-	1	-	-	420	9	429
Public Work	592	413	292	19	4	15	-	-	-	-	1,321	14	1,335
Municipalities	826	319	608	146	56	64	13	47	18	5	1,833	269	2,102
Communications	816	264	181	124	47	45	29	7	-	-	1,484	29	1,513
Local Administrations	187	178	78	190	67	102	96	34	34	18	976	2	978
Information	291	75	11	6	3	2	1	3	-	-	385	7	392
Foreign Affairs	187	-	-	-	-	-	-	-	-	-	176	11	187
Economy	123	14	13	3	-	-	-	-	-	-	150	3	153
Finance	1,186	500	426	275	148	305	159	75	56	24	3,141	13	3,154
Supply	87	39	42	10	11	15	3	3	9	-	217	2	219
Social Affairs	100	15	8	6	-	-	-	-	-	-	129	-	129
Waqf	75	46	30	74	13	9	11	-	-	-	258	-	258
Central Planning Organization	140	-	-	-	-	-	-	-	-	-	128	12	140
Central Bank of Yemen	240	54	53	15	10	5	7	4	-	-	328	60	388
TOTAL	20,077	3,628	3,003	1,510	714	1,279	474	297	231	102	30,159	1,156	31,315

1/ No regional distribution of employment available.

Source: CPO, 1975 Manpower Survey (May 1976)

Table 5: EDUCATIONAL STANDARDS OF GOVERNMENT EMPLOYEES (1975)

	Government Employees		
	Total	Males	Females
Illiterate	5,160	4,518	642
Informal Education (read and write)	21,178	21,106	72
Primary Education	1,584	1,425	159
Preparatory Education	1,162	1,062	100
Secondary Education	1,284	1,115	169
Post Secondary Educ'n	256	251	5
College or University Degree	691	682	9
TOTAL	31,315	30,159	1,156

Source: Central Planning Organization, 1975 Manpower Survey, (May 1976).

Annex 1

Table 6: MODERN SECTOR NON-FARM EMPLOYMENT, 1975

Economic Sector	
Agriculture	200
Mining and Quarrying	51
Manufacturing	8,473
Electricity, Gas & Water	870
Construction	7,950
Wholesale and Retail trade	27,570
Transport, Storage & Communications	1,047
Finance, Insurance and Real Estate	1,126
Community and Personal Services	5,422
Total Private Sector	52,709 1/
Total Government Sector	31,315
GRAND TOTAL	84,024

1/ In the cities of Sana'a, Taiz, Hodeidah, Ibb and Dhamar.

Source: CPO, 1975 Manpower Survey (May 1976)

Table 7: GROSS DOMESTIC PRODUCT AT CONSTANT PRICES[1/]
(YR Million)

	1969/70	1970/71	1971/72	1972/73	1973/74	1974/75	1975/76	1975/76	1976/77	1977/78 Preliminary	1978/79
	1971/72 Prices							1975/76 Prices			
Commodity Sectors	1,004	1,283	1,324	1,449	1,376	1,667	1,604	2,834	2,891	3,238	3,469
Agriculture, Fishing & Forestry	832	1,091	1,113	1,208	1,091	1,401	1,305	2,305	2,157	2,369	2,513
Industry, Mining & Electricity	87	98	109	126	148	153	165	302	368	431	473
Construction	85	94	102	115	137	113	134	227	366	438	483
Distribution Sectors	388	416	453	491	513	557	677	1,512	1,930	2,113	2,367
Trade	322	337	360	386	394	411	511	1,220	1,568	1,721	1,952
Finance & Banking	21	26	25	32	41	59	75	141	190	195	206
Transport & Communication	45	53	68	73	78	87	91	151	172	197	209
Services Sectors	264	295	314	337	354	397	426	835	945	1,088	1,168
Government	146	169	185	201	212	247	271	509	597	672	712
Housing	78	81	83	86	89	92	94	199	210	266	292
Other Services	40	45	46	50	53	58	61	127	138	150	164
GDP at Market Prices	1,656	1,994	2,091	2,277	2,243	2,621	2,707	5,181	5,766	6,439	7,004
GDP Deflator	85	88	100	110	145	171	191	100	131		

Source: Central Planning Organization.

1/ The time series is broken in 1975/76. A uniform series in 1971/72 prices cannot yet be produced because of inconsistencies in the overlapping 1975/76 data.

Table 8: EXPENDITURES ON GROSS NATIONAL PRODUCT AT CURRENT PRICES
(YR Million)

	1969/70	1970/71	1971/72	1972/73	1973/74	1974/75	1975/76	1976/77
Consumption	1,639	1,839	2,160	2,607	3,380	4,422	5,581	8,169
Private	1,523	1,678	1,926	2,290	3,015	3,904	4,900	7,234
Government	116	161	234	317	365	518	681	935
Gross Investment	78	259	329	499	630	1,077	1,170	2,622
Gross Fixed Capital Formation	162	235	324	342	472	586	773	2,016
Change in Stocks	-84	24	5	157	158	491	397	606
Net Exports of Goods and N.F.S.	-318	-352	-398	-592	-750	-1,025	-1,570	-3,246
Exports of Goods and N.F.S.	30	40	87	94	175	221	293	255
Imports of Goods and N.F.S.	-348	-392	-485	-686	-925	-1,246	-1,863	-3,501
GDP at Market Prices	1,399	1,746	2,091	2,514	3,260	4,474	5,181	7,545
Net Factor Income	220	230	293	505	528	914	2,157	4,034
GNP at Market Prices	1,619	1,976	2,384	3,019	3,788	5,388	7,338	11,579
Memorandum Item								
Gross Domestic Savings	-240	-93	-69	-93	-120	52	-400	-624
Gross National Savings	-20	137	224	412	408	966	1,757	3,410

Source: CPO and ECWA, National Accounts of YAR, 1969/70-1976/77 and balance of payments data.

Table 9: CONSUMER PRICE INDEX FOR SANA'A

(1972/73 = 100)

Fiscal Years Ended June 30	Weights	1973/74	1974/75	1975/76	1976/77	1977/78	1978/79	1979/80 1/
General Index	10,000	154	203	237	293	348	425	470
Foodstuffs	6,500	165	187	210	256	301	352	379
1. Cereals	1,735	156	185	169	164	160	174	203
2. Dry vegetables	130	142	209	280	326	378	420	n.a. 2/
3. Meat, fish and eggs	1,205	155	199	264	365	467	551	n.a. 2/
4. Vegetables	447	142	173	215	323	406	443	536
5. Dairy products	301	140	164	177	266	347	413	n.a. 2/
6. Edible oils and fats	295	206	257	343	372	397	461	504
7. Fruits	513	123	169	221	270	264	283	290
8. Sugar and sweets	382	151	272	226	204	198	200	255
9. Soft drinks	148	140	179	202	250	302	305	350
10. Tobacco, etc.	967	134	141	158	282	309	404	439
11. Other	377	139	204	240	273	294	359	n.a. 2/
Clothes	581	155	229	263	313	351	442	
Dwelling	1,946	186	259	337	435	539	647	
1. Furniture	206	131	167	196	233	263	324	326
2. Durable goods	407	143	286	219	242	270	321	332
3. Rent and water	609	138	203	286	373	513	713	811
4. Fuel and lighting	724	266	374	487	643	791	870	1,036
Miscellaneous	973	152	180	206	245	280	347	
1. Transportation	326	147	193	238	299	344	498	568
2. Education	87	143	170	205	224	251	368	454
3. Medical costs	268	166	181	188	226	267	307	347
4. Household cleaning items	166	153	172	191	208	221	234	270
5. Personal cleaning items	126	139	160	187	204	238	283	307

Source: Central Planning Organization.

1/ Since FY 1979/80 only the index numbers of a revised consumer price index with base year 1977/78 are available. The index is based on a new classification system of consumer goods and new weights which are not yet available.

2/ Category does not exist in new index, see Table 10, Annex 1.

Table 10: CONSUMERS PRICE INDEX FOR SANA'A, HODEIDAH, TAIZ, DHAMAR AND IBB, FIRST HALF 1980

(1977/78 = 100)

Items	Sana'a	Hodeidah	Taiz	Dhamar	Ibb
General Index no	139	137	140	138	137
A. Foodstuffs:	130	129	131	134	130
1. Cereals and Related Prod.	129	133	130	139	130
2. Meat	111	112	114	113	109
3. Fish	120	114	113		
4. Milk Eggs and Cheese	152	143	148	153	159
5. Edible oils and fats	130	128	129	129	127
6. Legumes	142	134	134	136	132
7. Vegetables	114	108	115	114	112
8. Fruits	106	112	110	119	111
9. Beverages	118	121	124	131	130
10. Sugar	158	156	154	165	161
11. Canned, dry Foods	136	135	138	137	140
12. Soft drinks	116	108	116	121	117
13. Tobacco	152	148	155	158	151
B. Dwellings:	152	147	152	144	148
1. Rent and Water	158	150	155	147	147
2. Fuel and Lighting	145	150	153	145	152
3. Durable goods	125	124	125	124	135
4. Furniture and house Utensils	132	129	130	133	124
C. Clothes:	147	144	148	150	151
1. Clothes	145	143	147	147	149
2. Shoes	155	152	155	161	158
D. Miscellaneous:	150	147	151	152	148
1. Education and Culture	184	182	182	178	179
2. Transportation	174	167	173	176	174
3. Personal items	132	125	130	136	137
4. Medical expends.	132	133	129	136	140
5. Household Cleaning items	126	130	124	126	130

Source: Statistical Office of the Central Planning Organization

Annex 2

THE MUNICIPAL FINANCE SYSTEM

The budgets of the municipalities are approved and paid from the national level. The municipalities are authorized to collect a number of fees and fines, but these are remitted directly to the national treasury. Local officials described the following types of fees and fines:

(1) Fees

(a) Commercial Permits. Commercial establishments are charged an annual fee by the municipalities. In Sana'a, they are divided into four categories according to their estimated gross income and charged accordingly. In Hodeidah, they are charged YR 5 per m^2 per year.

(b) Building Permits. YR 1 per m^2 is charged in Hodeidah. In Sana'a, a lump sum payment of YR 25 is charged plus YR 0.55 per m^2.

(c) Permits to use public space temporarily for construction materials.

(2) Fines. The amounts of fines are established by central Government decree. Fines are levied by the municipalities for building without a permit, using public space for storage of building materials without a permit, disregarding health regulations (e.g., restaurants, slaughter-houses), and illegal disposal of garbage.

(3) Informal Taxation. In Taiz, which has strong municipal leadership, several informal voluntary collections are made to finance municipal works. These include personal solicitations from business leaders, contributions from the Local Development Association (see below) and the religious tax (Zakat) to the Municipality, and an informal betterment tax collected from shopowners along improved rights-of-way. In Taiz, about one-third of the YR 3 million in municipal projects was financed in FY77/78 from local contribution. Other than informal taxation for local works, all tax fees and fines have to be sent to the national treasury. Officials in Sana'a are eligible to receive a monthly bonus of up to YR 50,000 at the discretion of the Minister of Public Works if local taxes are efficiently collected, but there is otherwise little incentive for local officials to fully collect the taxes. Local tax evasion is said to be extensive, but

no estimates have been made of the amount of potential tax proceeds and fines which are not collected. About YR 3.5 million were collected in Sana'a in FY 78 by a central staff of seven persons and a license control officer in each of the six zones of the city.

(4) Other Urban Taxes. Some other types of urban taxes are collected directly by the Ministry of Finance. These include an annual rent tax of 8.3 percent of gross rentals when houses are rented to second parties and of 4.2 percent on imputed rent of owner-occupied houses. There is a YR 2,000 personal exemption on the imputed rent tax. In practice, taxes are only collected on imputed rent when buildings are used for commercial purposes. This tax is assessed only in the five cities with more than 10,000 inhabitants. Evasion is reported to be high. A new law (1977) established a 10 percent tax on the sale of real estate within a specified radius of city centers. The Ministries of Public Works and Justice require evidence of tax payment before authenticating transfer deeds and issuing building permits. The first YR 100,000 from the sale of land and YR 200,000 from the sale of buildings are exempted. The original purpose of the tax was to control land speculation. However, because the exemptions are well above the average cost of lots and houses in even expensive areas of Sana'a, the tax has had little impact. Proceeds from the rental and property transfer taxes were YR 2.3 million and YR 3.4 million in FY 76/77, respectively, which together accounted for only 0.5 percent of Government tax revenue. This was projected to rise to only 0.9 percent in FY 78/79. There is no annual real estate tax based on land valuation. This would be difficult to administer due to the lack of a reliable land registration system.

Annex 3

EMPLOYMENT AND INCOME DISTRIBUTION

Tables

Table 1: MANPOWER DEMAND AND SUPPLY DURING THE PLAN PERIOD (1976/77 - 1980/81)

	Demand	Domestic Supply	Balance
I. High-Level Cadres			
Engineers	884	345	539
Agricultural Sciences	360	146	214
Veterinary Sciences	56	6	50
Medicine & Pharmacy 1/	253	253	-
Natural Sciences 1/	507	291	216
Economics & Commerce 1/	1,461	1,126	335
Social Sciences 1/	2,008	1,434	574
Other Sciences	339	7	332
Total High-Level Cadres	5,868	3,608	2,260
II. Medium-Level Cadres			
(i) Technical Assistants:			
Mechanical	343	2	341
Chemical	184	2	182
Electrical	388	57	331
Civil Engineering	422	13	409
Agricultural & Veterinary	294	2	292
Health	1,249	773	467
Others 2/	6,639	2,985	3,654
Total	9,519	3,834	5,685
(ii) Technical & General Secondary Schools Graduates:			
Industrial	2,542	481	2,061
Agricultural	919	69	850
Commercial	871	325	546
General	3,257	3,257	-
Total	7,589	4,132	3,457
Total Medium-Level Cadres	17,108	7,966	9,142
III. Basic-Level Cadres	Demand	Domestic Supply	Balance
(i) Skilled Labor:			
Production	22,474	17,247	5,227
Mechanical	1,953	951	1,002
Electrical	1,094	1,094	
Construction	13,535	480	13,055
Drivers 3/	5,976	-	5,976
Health Care	1,474	1,164	310
Public Administration	4,821	4,765	**56**
Services	2,667	1,910	757
Total	53,994	27,611	26,383
(ii) Unskilled Labor	24,340	24,083	257
Total Basic-Level Cadres	78,334	51,694	26,640
Total, All Cadres	101,310	63,268	38,042

1/ The balance for each profession does not indicate the exact high-level cadres needed because the numbers are aggregates and, therefore, do not show shortages in some specialties and excess in others.

2/ Mainly includes primary and secondary schools teachers.

3/ Includes drivers of all kinds of automotive engines such as trucks, buses, cisterns, tractors, cement mixer, etc. It is unlikely that no drivers can be supplied domestically, in spite of emigration.

Source: CPO, First Five-Year Plan, 1976/77-1980/81

Table 2: WAGE RATES BY CATEGORY AND OCCUPATION IN 1977, 1978 AND 1979.

(In Yemeni Rials)

Category and Occupation	1977	1978	1979
Unskilled laborers	45/daily	50-60/daily	50-60/daily
Skilled Operator (heavy equipment)	1,320-1,660/monthly	1,520-1,820/monthly	1,660-2,000/monthly
Drivers	1,000/monthly	1,250/monthly	1,500/monthly
Mechanics	1,000-1,800/monthly	1,200-2,000/monthly	1,500-2,500/monthly
Welders	1,000/monthly	1,250/monthly	1,500/monthly
Blacksmith	700/monthly	900/monthly	1,100/monthly
Machinist	800/monthly	1,000/monthly	1,230/monthly
Carpenters	140/daily	200/daily	240/daily
Masons	120/daily	180/daily	220/daily

Source: Ministry of Public Works, 1979.

Table 3: AVERAGE DAILY WAGES FOR UNSKILLED WORKERS IN SAUDI ARABIA, URBAN AND RURAL YEMEN.

(In Yemeni Rials)

Year	SAUDI ARABIA[1/]		URBAN YEMEN[2/]		RURAL YEMEN[3/]	
	Current Prices	Constant 1972 Prices	Current Prices	Constant 1972 Prices	Current Prices	Constant 1972 Prices
1975	40	36	18	16	10	9
1977	85	40	45	21	37	17
1979	120	44	65	25	50	19
1980			70		70	

Sources: 1/ American-Saudi Arabian Joint Economic Commission, 1979.
2/ Ministry of Public Works, 1979.
3/ FAO Agricultural Assessment of Yemen, Appendix III, El-Omeri (Draft Report), 1979.

Note: Daily wages for 1975, 1977 and 1979 are deflated by the construction GDP index as follows: 1972: 102; 1975: 111; 1977: 213; and 1979: 270.

Table 4: PRIVATE MONEY TRANSFERS.

(In millions of YRls.)

Private Transfers	1971/72	1972/73	1973/74	1974/75	1975/76	1976/77	1977/78	1978/1979 1st Quarter	1978/1979 2nd Quarter
Receipts	292.9	563.6	594.6	1,013.0	2,463.3	4,561.2	6,029.7	1,472	1,490
Payments	35.0	58.7	90.8	154.4	306.0	770.4	1,446,3	n.a.	n.a.
Net	257.9	504.9	503.8	858.6	2,157.3	3,790.8	4,583.4	n.a.	n.a.
US$ Equivalent 1/	51.6	101.0	112.0	190.8	479.4	842.4	1,018.5	n.a.	n.a.

1/ US$1 = YRls. 5.00 in 1971/72 and 1972/73; thereafter US$1 = YRls. 4.50.

Source: Central Bank of Yemen, 1979.

Annex 3

Table 5: HOUSEHOLD INCOME DISTRIBUTION IN THE THREE MAJOR CITIES IN 1979 (CUMULATIVE DISTRIBUTION)

Population

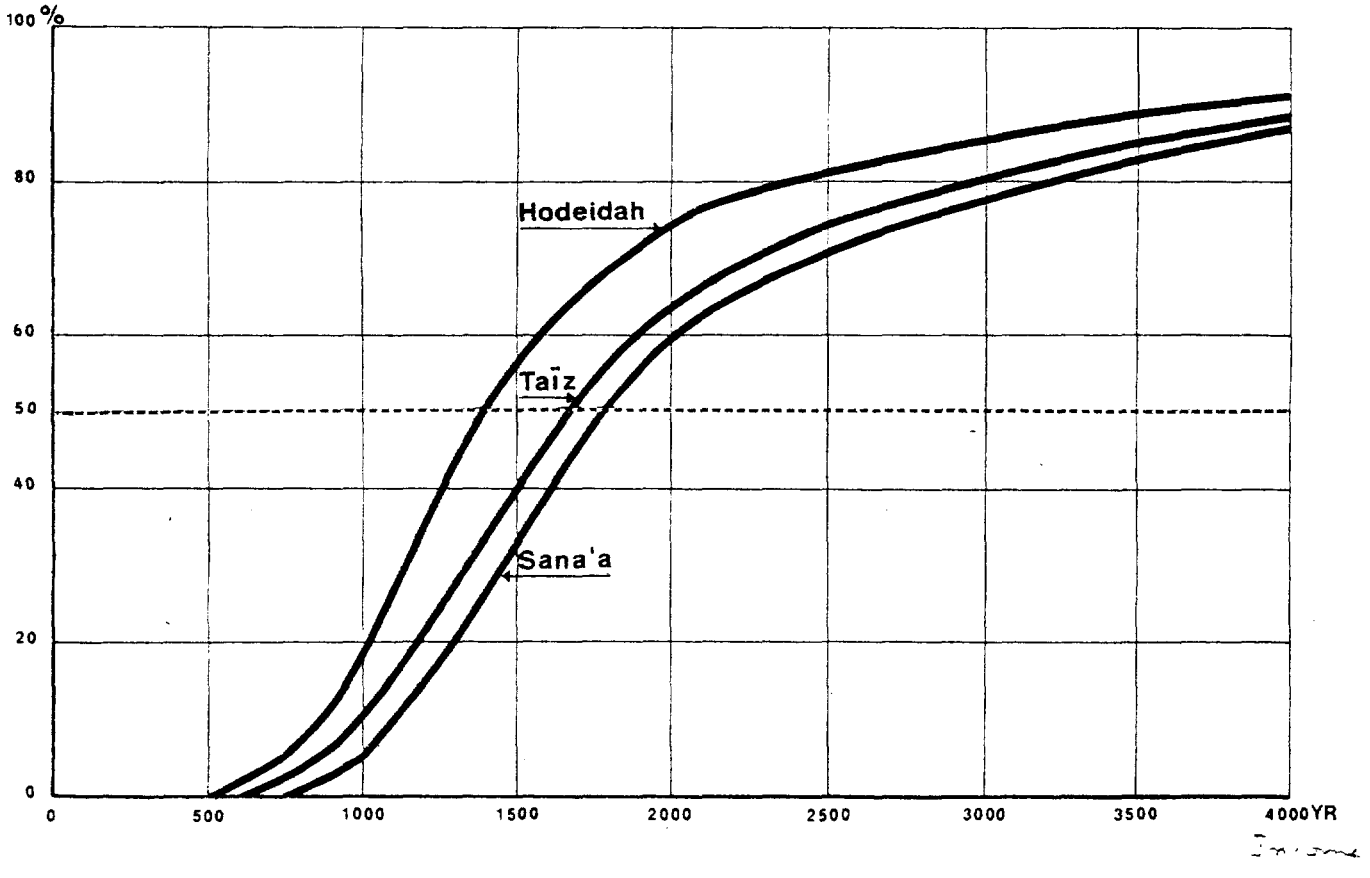
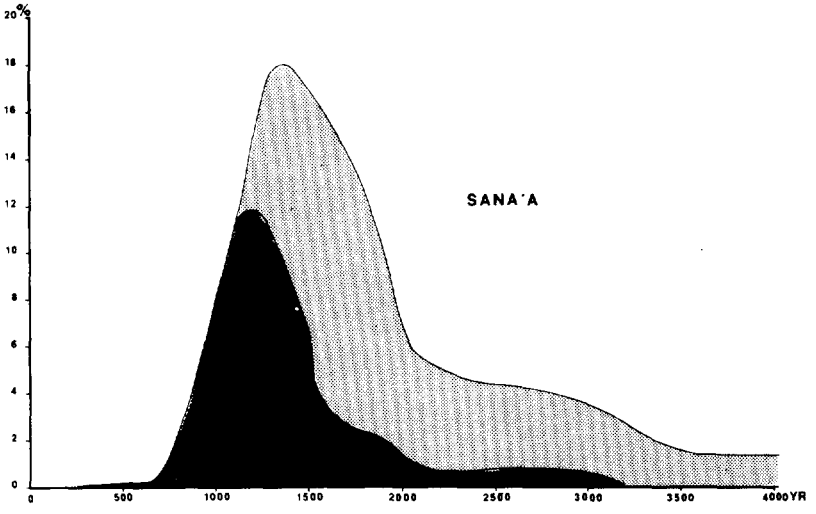
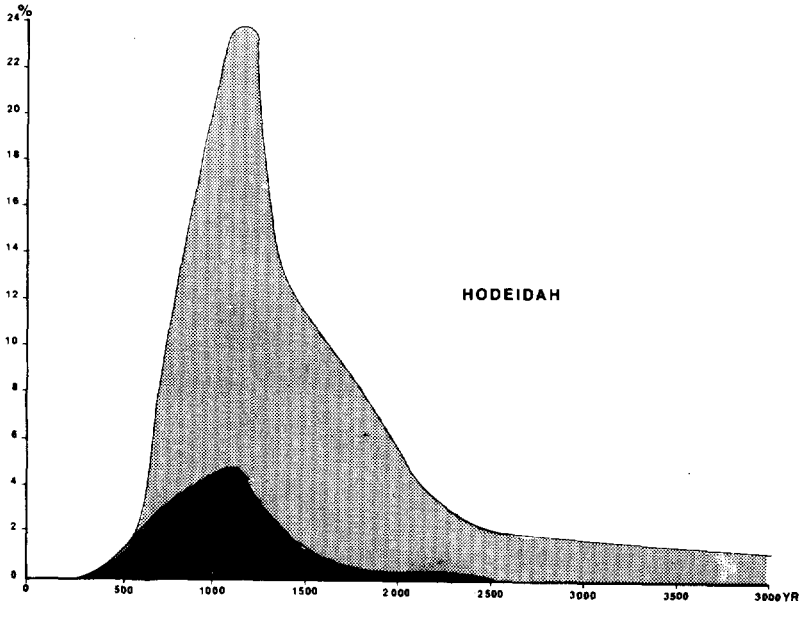
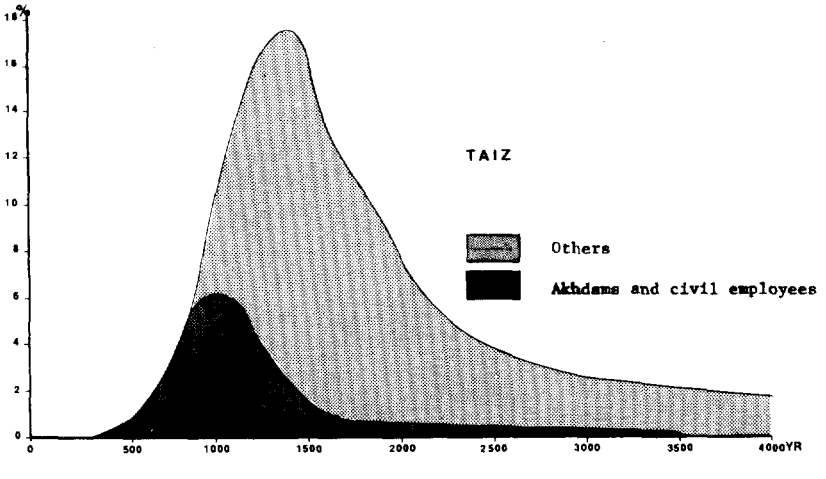


Table 6: MONTHLY HOUSEHOLD INCOME DISTRIBUTION IN THE THREE MAJOR CITIES OF YAR IN 1979 (FREQUENCY DISTRIBUTION)







Source: Mission Estimates

Annex 3

Table 7: ABSOLUTE POVERTY LEVEL WORKSHEET, 1978

A. Typical Daily Food Basket Per Capita

Food Item	% of Total Consumption	Amount (Grams)	Calorie Value[1/]	Protein Value	Price[2/]
1. Wheat	43.0	400	1,320	55.6	1.5
2. Broad Beans	16.0	150	516	35.3	0.9
3. Fenugreek	16.0	150	510	-	0.45
4. Cabbage	21.0	200	52	3.4	0.93
5. Eggs	4.0	40	70	-	0.5
TOTAL	100	940	2,468	94.3	4.28

Size of Urban Household

5.3

Per Capita Cost/Year

YR 1,540 (in 1977)

YR 1,848 (in 1978)

1/ Calorie requirement/day/head of population in the near east: 2,450 calories.

2/ 1977 Price Index.

B. Non-Food Requirements Per Household

Item	Cost/Month (YR)[1/]
1. Rent	400
2. Utilities	100
3. Others	50
TOTAL	550

Size of Urban Household

5.3

Per Capita Cost/Year

YR 1,245 (in 1978)

1/ In 1978.

Absolute Poverty Level in 1978

- per capita/year = YR 3,093 (US$687)
- per household/month = YR 1,365 (US$304)

Population under the absolute poverty level in the three main cities in YAR:

- Sana'a = 20%
- Hodeidah = 45%
- Taiz = 30%

Annex 4

HOUSING

A. DISTRIBUTION OF RESIDENTIAL TYPES IN SANA'A

Sana'a residental areas have been subdivided into seven types corresponding to different housing and land use standards. These types can also be correlated with the socio-economic characteristics of the population which inhabits them.

Table 1 shows the physical chracteristics of each type and the percentage of the total housing stock it represents.

Types A, B and C correspond to the area occupied by the city before the Revolution of 1962. Most of the houses in type A and C and about one-third of B are more than 50 years old. These traditional downtown neighborhoods have not been absorbing many migrant families from rural areas as indicated by the relatively low densities.

Types D, E, F and G have been developed since the Revolution and have absorbed the largest part of urban growth. The large majority of the lowest income groups have found shelter mostly in neighborhoods of type E which contribute 40 percent of the total housing stock. Type G areas are the only ones with extremely low physical standards. The drop in standards between types E and G is not due to a large difference in income but rather to socio-cultural factors. Type G, however, represents approximately only one percent of the total housing stock.

According to mission estimates, out of the 9,800 households who have an income below the 30th percentile:

78 percent are living in residential area of Type E

11 percent are living in Type C

8 percent are living in Type A

3 percent are living in Type G

B. SANA'A RESIDENTIAL LAND USE

Taking into account that most buildings are multi-storied, residential densities are remarkably low: this is due mostly to the relatively large plot sizes encountered in nearly all housing types. At the same time, the areas developed most recently are far from being completely densified. In the lowest income areas, the vacant plots correspond to approximately 300 hectares, or enough to accommodate three times the present number of households presently living in them.

Annex 4

The space use for circulation in traditional neighborhoods (Types A, B and C) is rather low. It varies from 12 to 15 percent, but circulation problems are alleviated by the fact that densities are also low and traditional neighborhoods are surrounded by a relatively good network of primary roads following the ancient city walls.

Opportunities and constraints resulting from present residential land use characteristics are:

a) The potential for densification of existing neighborhoods is important, in low-as well as in high-income areas.

b) The provision of urban services will be costly in areas which are not yet densified. The lack of cadaster and recorded property titles preclude the use of a land tax as an incentive for densification of developed areas.

c) The continuation of the present land development system results in uneconomical layouts in both low- and high-income areas.

C. SANA'A HOUSING STOCK: HOUSING STANDARDS

Space Standards. As can be seen in Table 1, the housing space standards are very high for the majority of the inhabitants of Sana'a. In Type E structures, where 78 percent of the households below the 30th percentile are living, the average floor area per house is around 67 m^2, giving a norm of 3 rooms per house (35 percent of the floor area is usually used for a staircase, corridor and toilet). If traditional living patterns are maintained, the three-room house is a necessity: One room is used for male members of the family and their guests; one room for female members and their guests; the third room is the kitchen. 1/ It is clear that with rising construction and land costs, an increasing number of households cannot afford to keep up with the requirements of the traditional house. But instead of reducing housing space to standards they can afford, they choose to keep their families in their original rural areas where traditional housing standards are still affordable. In many occurances, only adult males in a family will stay in the city living in the "bachelor dormitories", whereas the female members, children and elderly will stay in the villages where housing space is cheaper and minimum housing requirements can be met. This arrangement, of course, creates a strain on family life and in the long-run might adversely affect the social cohesion of the country.

1/ In the plateau region, open space such as courtyards or patios are never used for entertaining friends nor for cooking. Besides sex segregation is an obligation.

Annex 4

In all residential types other than Type E, space standards are usually much higher, particularly in the oldest housing stock (Types A and B). It is interesting to note that, in the old city, space standards are better than in the newer areas whose households average higher incomes. It confirms the social and cultural importance of house space in traditional Yemeni life.

Improvement, structural maintenance, and enlargement of existing houses is a continuous process which can be observed in all parts of the city irrespective of prevalent income. The incremental growth of a house is a well established system and is well accepted by all, providing that the "starting cell" is large enough to accommodate the traditional way of life.

Table 1: SANA'A HOUSING TYPOLOGY (1977)

Type	Description	Typical Monthly HH Income Range (YR)	Total Area (ha)	No. of Households	%	Average Density (p/ha)	Saturated Density (p/ha)	Ave.Plot Size (m^2)	% Circul.	% Pub. Open Spc.	% used Soc.facil.	Vacant Plots (ha)	Ave. Roof Size (m^2)	Ave. No. Floors	Ave. Floor Area 1/ (m^2)	Ave. No. Rooms 2/	% of House Rented
A	Old City, multi-story one family traditional bldg. practically no private garden or yard - stone and bricks	1,250 - 3,500	118	7,750	26.5	350	350	100	12	14	25	0	80	2.5	140	6	27
B	Bir el Azeb - 2-3 story one family traditional bldg. large private garden stone and bricks	2,000 - 4,000 +	130	2,150	7.0	87	90	350	18	15	5	0	120	2	168	8	39
C	Gha el Oloufi - 2-3 floors no garden. Mud blocks. built before the revolution.	750 - 2,000	21.5	1,550	5.0	380	380	100	15	0	1	0	70	1.5	73	3	33
D	Safia - villas, outskirts of city smooth cut stone walls traditional or concrete roof built after the revolution	3,000 - 5,000 +	750	5,700	19.5	40	125	250	31	4	2	325	120	1.5	126	5	28
E	Mouzaik - townhouses outskirts of city - mud blocks or roughly cut stone or concrete bricks built after the revolution	750 - 2,500	643	11,800	40.0	97	340	100	28	2	2	312	80	1.2	69	3	32
F	Abdul Moghni St. concrete walk-up apartments	2,000 - 3,000	9	300	1.0	188	-	-	-	-	-	-	-	3	-	-	33
G	Akhdams Squatter Settlements	500	6.5	300	1.0	754	-	30	-	-	-	-	15	1	-	-	N.A.
	TOTAL		1,688.0	29,550	100.0												

1/ Average roof area x 0.7 x Average number of floors

2/ including kitchen. Average floor area x 0.65 x 1/14
(0.65 coefficient to take staircase, toilets and corridors into account. 14m^2 average room size = 3 x 4.6)

Source: Mission Estimates, 1979

TABLE 2

HODEIDAH - HOUSING TYPOLOGY

Type	Description	Area (ha)	No. of Hshlds.	% of Total	Ave. Density (p/ha)	Ave. Plot Size (m^2)	Ave. House Size (m^2)	Circul.+ Open Spc.	Hshlds. in rd.huts (%)	Hshlds. in rd.huts (no.)
A	Old City	13	550	3.1	230	70	80	18	5	30
B	Villas and Walk-up Apartments	120	3,750	21.7	175	300	80	30	0	0
C	Government Housing	35	800	4.7	130	115	35	70	0	0
D	Squatter Settlement Consolidated	51	2,500	14.5	270	120	30	35	25	847
E	Squatter Settlement in process of consolidation	187	6,850	39.6	200	150	25	40	53	3,671
F	Squatter Settlement incipient	152	2,850	16.4	100	250	10	50	35	2,703
	TOTAL	568	17,300	100.0	168					

Source: Mission Estimates, 1979.

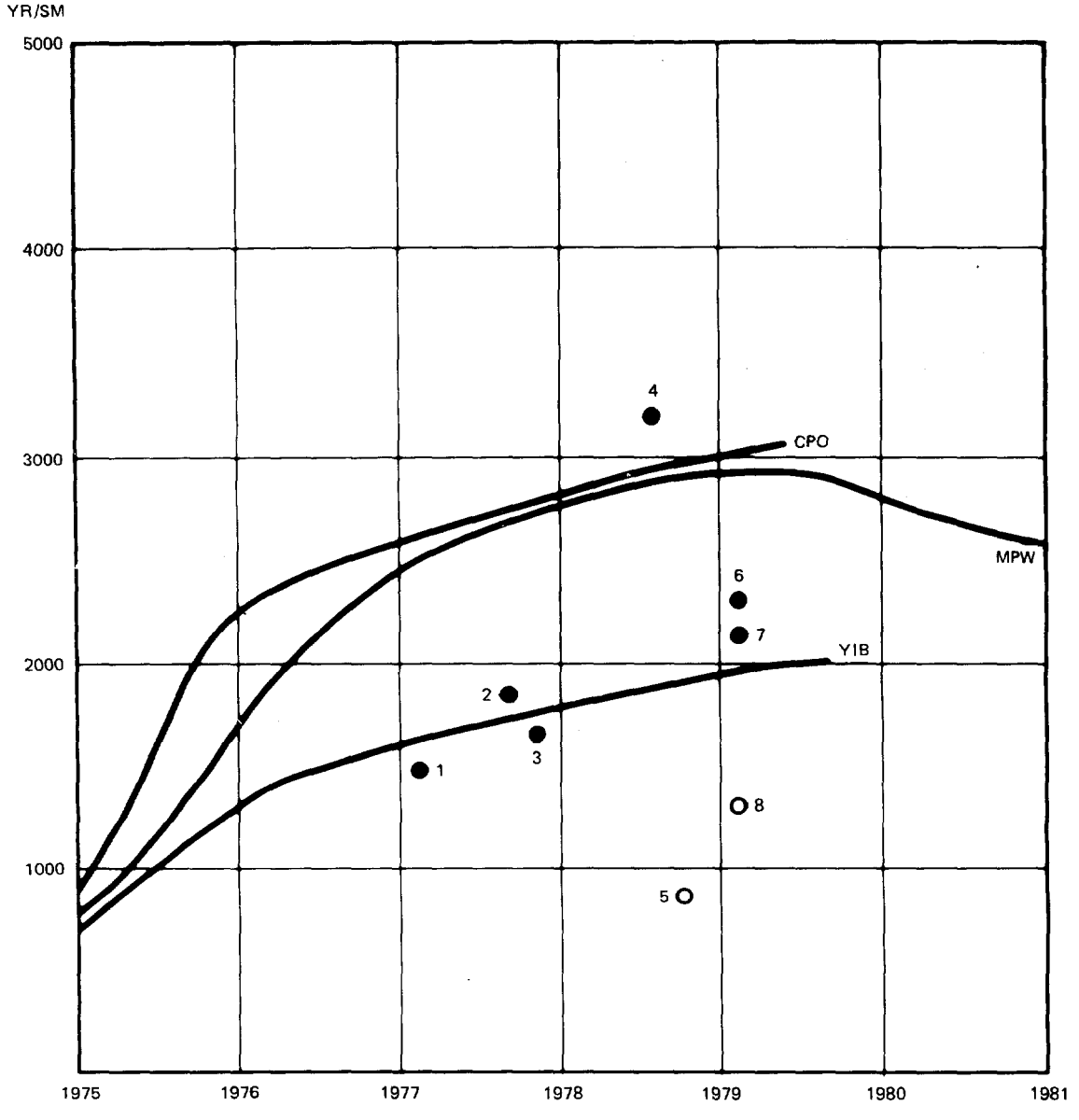
Annex 5

BUILDING MATERIALS

Tables

Annex 5

Table 1: RECENT CONSTRUCTION COST TRENDS
(YR/Square Meter)



Trend lines represent various estimates by YAR Government sources. Dots represent actual bids ●, or estimates ○, of below average building costs (1) Education Project 1, (2) Military Housing, (3) Al Hamdi New City, (4) Large Private Building in Taiz, (5) An owner-built house in Hodeidah, (6) Professors' Housing Project, (7) Recent Education Project Bid, (8) An owner-built house in Sana'a. In (5), the owner fabricated his own concrete block. In (8), the owner purchased concrete block at 3,700 YR/1000 units, despite the fact that mud blocks were also available at 1,200 YR/1000.

Source: Mission Estimates.

World Bank – 22493

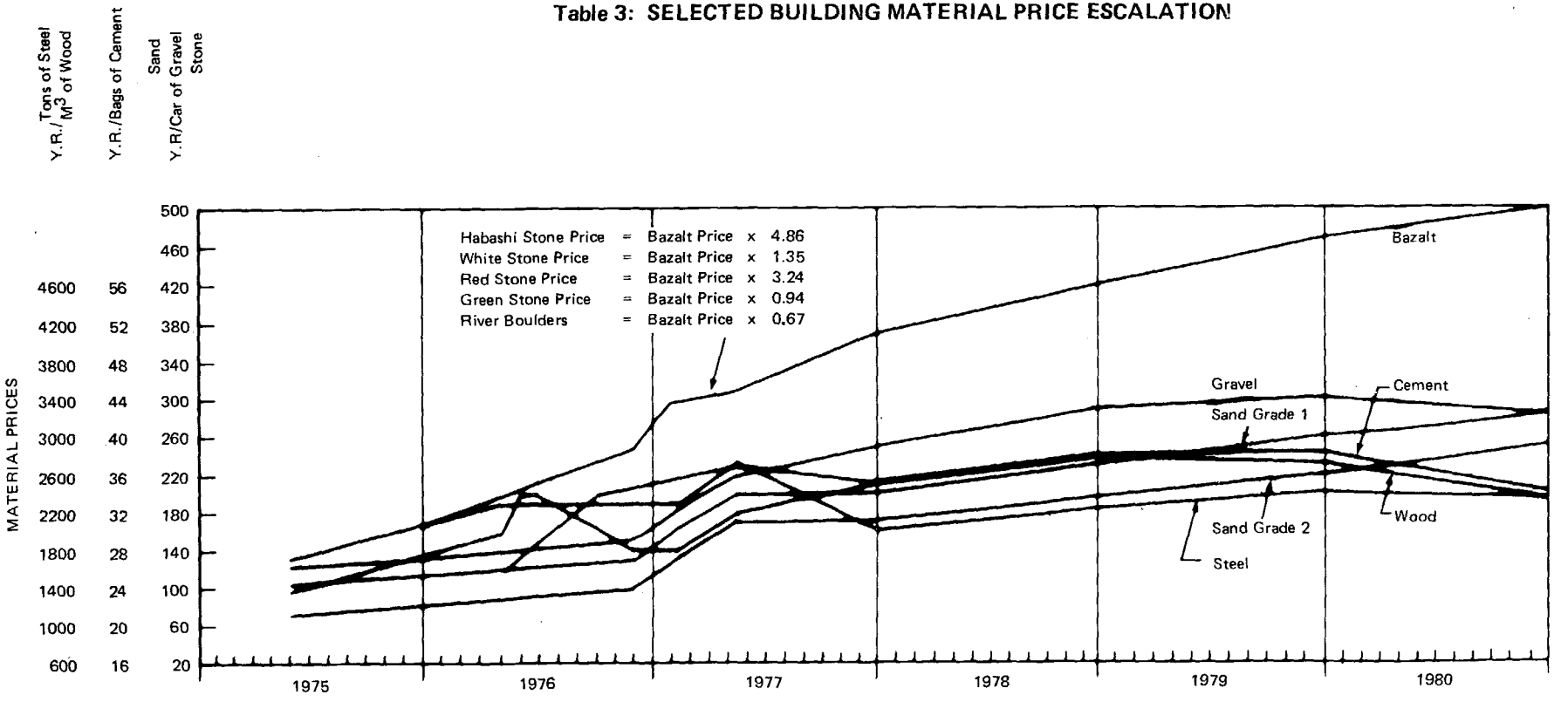
Table 2: DETAILED BUILDING MATERIALS PRICE ESCALATION

Description	Average Material Price at Mentioned Dates in Yr.			
	1st Jan. 1978	1st Jan. 1979	1st Jan. 1980 /1	1st Jan. 1981
Sand (gr. 2)	170/Car	195/Car	220/Car	250/Car
Sand (gr. 1)	200/Car	230/Car	260/Car	280/Car
Gravel	250/Car	290/Car	330/Car	280/Car
Cement	35/Bag	38/Bag	41/Bag	34/Bag
White cement	75/Bag	85/Bag	95/Bag	75/Bag
Wood	2500/m^3	2800/m^3	3100/m^3	2200/m^3
Rfg. steel	2000/Ton	2250/Ton	2500/Ton	2300/Ton
Stone-Habashi	1800/Car	2034/Car	2268/Car	1200/Car
Stone-White	500/Car	567/Car	635/Car	600/Car
Stone-Red	1200/Car	1360/Car	1524/Car	900/Car
Stone-Basalt	370/Car	420/Car	470/Car	500/Car
Stone-Green	350/Car	400/Car	445/Car	400/Car
River Boulders	250/Car	285/Car	318/Car	350/Car
Plaster	1600/m^3	1849/m^3	2030/m^3	2030/m^3
Glazed tiles	50/m^2	55/m^2	60/m^2	60/m^3
Mosaic tiles	75/m^2	85/m^2	95/m^2	n.a.
Mosaic tiles with marble chips	90/m^2	102/m^2	115/m^2	n.a.
Marble	300/m^2	340/m^2	380/m^2	n.a.
Cement tiles	50/m^2	55/m^2	60/m^2	n.a.
Insulation	10/m^2	11/m^2	12/m^2	n.a.
Bitumine	400/barrel	450/barrel	500/barrel	n.a.
Ceramic tiles	300/m^2	340/m^2	380/m^2	n.a.
Plastic tiles sq.	35/m^2	40/m^2	45/m^2	n.a.
Plastic tile sheets	40/m^2	45/m^2	50/m^2	n.a.
Plastic paper	20/m^2	22.5/m^2	25/m^2	n.a.
Plastic paint	40/m^2	45/m^2	50/m^2	

/1 Education Project Estimates, possibly on the high side.

Sources: Education Project (1978, 1979, 1980).
World Bank Mission (1981). Comparability between the 1981 and earlier estimates is limited for products with wide quality and grade variations.

Table 3: SELECTED BUILDING MATERIAL PRICE ESCALATION



Source: Education Project.

World Bank -- 22494

Table 4: LOW-COST HOUSING CONSTRUCTION LABOR AND BUILDING MATERIALS COST BREAKDOWN

(in percent)

	Labor	Local Materials	Imported Materials	Sub-Total
Foundations	11.0	5.0	--	16.0
Title Floors	2.0	10.0	2.0	14.0
Earth Block Walls	11.0	15.0	--	26.0
Branch Roof	2.0	7.0	--	9.0
Windows, Doors	--	12.0	1.0	13.0
Interior Finishes	6.0	5.0	--	11.0
Plumbing	1.0	--	8.0	9.0
Electricity	1.0	--	1.0	2.0
Total	34.0	54.0	12.0	100.0

Source: Alain C. Bertaud, Working Papers (Unpublished), 1972-74.

Annex 6

THE HOUSING CREDIT BANK

Tables

Table 1: INTEREST RATE STRUCTURE IN YAR AS OF NOVEMBER 1979

Lending Rates (maximum)

Institutions	Rates
Commercial Banks	15%
Specialized Banks (including HCB)	
Short term (up to one year)	12%
Longer term (over one year)	11%

Deposit Rates

Types of Deposit	Rates
Savings	10%
Three months	10%
Six months	11%
Nine months	12%
Twelve months	13%

Source: Central Bank of Yemen, 1980.

Table 2: HCB-LENDING ACTIVITIES FOR THE PERIOD JULY TO DECEMBER 1978

Types of Loans

	Building	Finishing	Expansion	Total
Number of Loans	102	181	19	302
Number of Building Units	102	181	19	302
Total Loans Granted (YR)	7,612,550	11,844,034	338,748	20,195,332
Average Loans per Building (YR)	74,633	65,437	38,881	
Area in square meters	9,545	20,181	698	30,424
Average Loans per sq.m. (YR)	798	587	1,058	

Source: Housing Credit Bank (1979).

Table 3: HCB-DISTRIBUTION OF LOANS DURING THE PERIOD JULY 15, 1978-DECEMBER 15, 1978 ACCORDING TO THE DIFFERENT SECTORS

(In Yemeni Rials)

Sector	Number of Loans	%	Amount of Loans	%
Government	145	48	10,159,000	50.3
Mixed Sector	15	5	1,081,750	5.4
Security and Armed Forces	61	20.2	3,060,075	15.1
Private Sector	43	14.2	3,231,050	16
Others[1/]	38	12.6	2,663,469	13.2

1/ Including handicraftsmen, peasants, workers, household wives, employees of the private sectors and grocers.

Source: Housing Credit Bank.

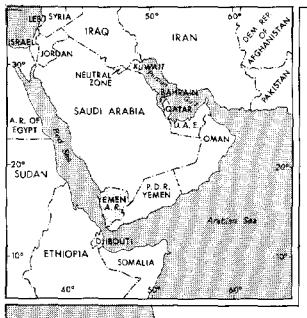
Table 4: HOUSING CREDIT BANK

Balance Sheet as of June 30, 1978

(In Yemeni Rials)

ASSETS			LIABILITIES		
CASH IN HAND AND WITH BANKS			CREDITORS AND OTHER CREDIT BALANCES		
Cash in Hand	2,728		Jordanian Housing Bank	6,263	
Central Bank C/A	159,118		Shares	974	
Yemen Bank (Shares)	285,743		Employees	266	7.503
	447,589		Due expenses		4,800
Deposits with Banks	25,292,333	25,739,922	Audit fees		25,000
Debtors		400	Share Capital		
Stationary		30,798	Authorized Capital:	70,000,000	
Payments in advance		83,334	700,000 ordinary shares of		
Insurance		500	100 Rials each.		
Fixed Assets			300,000 Preference shares of		
Actual value as of 6/30/78	180,725		100 Rials each.	30,000,000	
Less: Depreciation	13,049	167,676		100,000,000	
Establishment expenses		336,773	Issued and fully paid:		
			250,000 ordinary shares of		
			100 Rials each	25,000,000	
			1,322,100 preference shares of		
			100 Rials each	1,322,100	26,322,100
Balance as of 6/30/78		26,359,403			26,359.403

Source: Housing Credit Bank.



YEMEN ARAB REPUBLIC

MAJOR URBAN CENTERS OF THE YEMEN ARAB REPUBLIC

(1975)

SAUDI ARABIA

URBAN CENTERS (Circles graduated according to the populations shown in parentheses.)
TOWNS (Populations less than 3,500.)
PRIMARY ROADS
OTHER ROADS
ELEVATIONS IN METERS:
0
500
1500
greater than 1500
WADIS
INTERNATIONAL BOUNDARIES

0 20 40 60
KILOMETERS

To Abu Ar Ruus
To Abu Ar Ruus
To Abu Ar Ruus
Kitaf
SA'DA (4,39
Suq al Iman
Mahil
Markaz al Marashi
Harad
Al Hayrah
Al Harf
Midi
Huth
Al Hazm
Al Ghayl
Abs
HAJJAH (3,558)
Bani Abd
Wadi Al Jawf
Hajjah
Mabyan
Wadi Mabyan
Az Zuhrah
Al Luhayyah
HARAD (13,733)
Ibb
Al Khawbah
Hababah
Al Makwri
Marib
Az Zaydiyah
Al Mighlaf
Al Munirah
Al Maruaiyan
Ad Dahi
Wadi Sardud
Wadi Jawban Marib
Mainakhah
Bajil
Hams
Wadi Simam
Mayawrah
Athin
Mabar
Al Jumah
Risabah
Al Mansuriyah
Turayhimi
DHI
(20
Kharabar Afiq
Rida
T. EL FAQIH (12,703)
RED SEA
Wadi Rima
Wadi Zabid
Yarim
Rihab
Zabid
At Turaybah
As Sad
Suq at Itnain
At Tahayta
Zamar Hubaysh
As Saddah
Al Haymam
Uban
Al Udayn
Hays
Jibl
Gatabah
Dhi as Sufal
Al Khawkhah
QAIDAH (5,709)
Wadi Risgan
PEOPLE'S DEMOCRATIC REPUBLIC OF YEMEN
Ar Rahidah
Al Mukha
Wadi Mawza
Mawza
At Turbah
ETHIOPIA
GULF OF ADEN
DJIBOUTI