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CENTRE FOR MIDDLE EASTERN
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**URBANISATION
IN THE
ARABIAN PENINSULA**

by
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PREFACE

The rapidly rising oil revenues in the oil-rich states of the Arabian Peninsula have had a number of repercussions. A major consequence is the increasing concentration of economic wealth and power in specific social and spatial groups which have created 'core' regions of economic development. Employment opportunities resulting from this rapid development have been the major "pull" for people in areas peripheral to the core regions. This process has created a rapid urbanisation of the populations in the Arabian Peninsula, spatially manifested by growing urban centres in the core regions. (The A.R. Yemen differs from this trend as it has had a much slower rate of development, and the P.D.R. Yemen has experienced urban decentralisation since independence after a period of extreme urban concentration under the British mandate). A number of problems have arisen from this rapid urbanisation, especially water and housing provision. In the long term, the urbanisation process may break down the traditional human and natural ecological structures within the Arabian Peninsula.

CHAPTER ONE

Introduction

The Developing Countries have undergone extremely rapid urbanisation in recent decades and now it is commonly asserted that the urban populations are growing twice as fast as those in the industrialised countries. Increases in urbanisation have been particularly rapid in the Middle East as the following figures for the oil rich states in the Arabian Peninsula show:

TABLE 1.1: % LEVELS OF URBANISATION

	1950	1970	1982
Kuwait	58	56	88
Bahrain	71	64	78
Qatar	50	68	57
UAE	25	52	62
Saudi Arabia	10	24	53

Absolute increases in urban populations can be even greater. For example, the absolute increase in Saudi Arabia's urban population between ~~1982~~¹⁹⁶² and ~~1962-3~~¹⁹⁸² has been estimated to be about 170 per cent (from 300,000 to 800,000 persons). Another feature of Middle Eastern urbanisation has been a proportionately high increase in the populations of the larger cities. Doha has 80 per cent of Qatar's population, a degree of concentration also experienced by Manama which now has over 40 per cent of Bahrain's population. Kuwait City has approximately 60 per cent of the State's population and in the United Arab Emirates more than 80 per cent of its people live in the capital cities.

It is important to understand the historical background to these developments as processes operating in the past provided the impetus for current urbanisation processes and patterns. Four closely inter-related processes are identifiable. Firstly, the increased political centralisation of Ibn Saud to expand his Kingdom in the early twentieth century emphasised urban rather

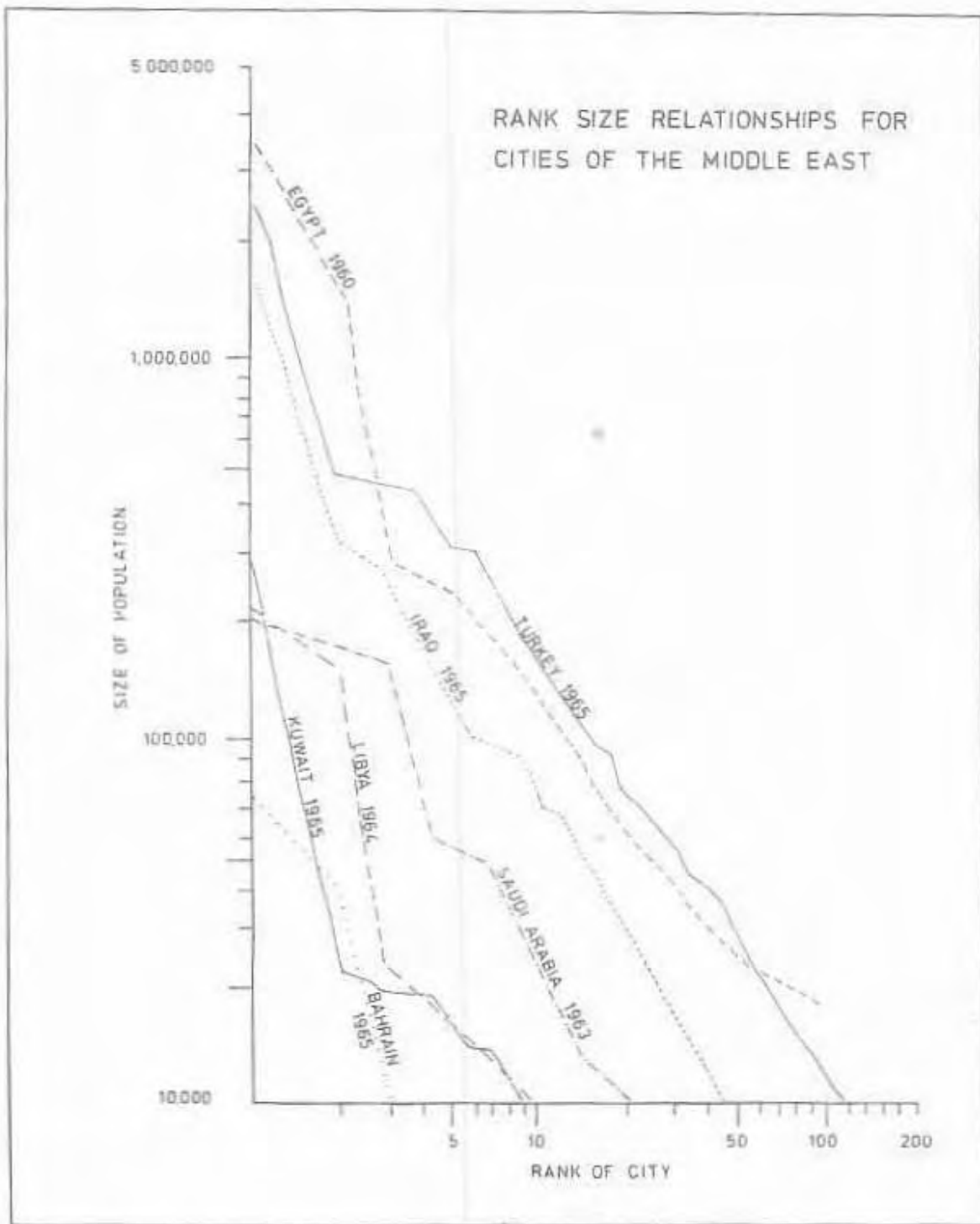
than rural development as it was through urban centres that he maintained his power. Secondly, political strife in the Middle East, originating partly from the European creation of the political map, aids urbanisation. For example, after the 1948 and 1967 Arab-Israeli wars Palestinian refugees fled their homeland, many to the urban centres of the Gulf States where rapid economic development was necessitating large influxes of labour. In Kuwait, Palestinians comprise about one-fifth of the expatriate population. The third identifiable process has been changing trading patterns which for the Arabian Peninsula has intensified development and expansion of certain coastal regions - for instance the Suez Canal/Red Sea region and the Gulf. Fourthly, oil in the Arabian Peninsula has been developed by American and European oil companies and has effected new urban developments in location and form.

The latter process has been particularly influential. In the oil-rich states, migration to the urban centres¹ has been of great importance. It has been estimated by Doxiades¹ that 85 per cent of the household heads of Riyadh's population were born outside the city and over 70 per cent² of its annual growth rate is attributed to migration alone. Al-Shuaiby² has shown that nearly one-third of the population of Dammam and Al-Khobar is rural-urban migrants out of populations that are over 80 per cent immigrants. The proportion of immigrants in Kuwait's population has increased from 45 per cent in 1957 to 56 per cent in 1970.

The direct consequence of rapid urbanisation has been the spatial expansion of the urban area; since 1950 Riyadh has experienced ten times as much urban growth as in its entire history. Jeddah, in Saudi Arabia, has shown a tremendous growth of 49 times its previous size in the last ten years. Resulting planning problems are very apparent in these rapidly expanding cities - for example housing provision, integration of spontaneous settlements and the provision of an adequate water supply.

One of the results of this rapid urbanisation has been a marked urban primacy that is apparent in most of the Middle East countries and especially those of the Arabian Peninsula (Fig. 1). Indeed triplicity exists in Saudi Arabia, where Riyadh, Jeddah and Mecca comprise one-quarter of the total population. It is

FIGURE 1



debatable whether or not a situation is "unbalanced" and the major gaps in the hierarchy are a result of malfunctioning in the system. It would seem, however, that in the context of the Arabian Peninsula the scarcity of agricultural land has not provided the marketing conditions that existed in countries where the rank-size rule was generated, and, therefore, intermediate sized urban centres are not to be expected.

The catalyst for much of the urbanisation process in the Arabian Peninsula has been the discovery of oil (first struck in Bahrain in 1932) and the resulting oil revenues. In particular, oil reserves have

permitted higher imports, development schemes, improvements in the way of life or simply lavish expenditure by rulers, and the import of the Western industrialised way of life has brought prospects and problems. The oil industry has become dominant in all the Arabian Peninsula except the Yemens.

The increase in oil revenues for the states in the Arabian Peninsula is shown in Table 1.2.

The importance of these revenues may be seen in Qatar, where oil revenues comprise 97 per cent of total Government Revenues. Statistics are similar for the other oil-rich states. High amounts of these oil revenues are allocated to current expenditure and it has been estimated that for every 100 units of capital expenditure 10 units of current expenditure are required. The majority of capital and current expenditure has been in urban centres as it is in the core economic regions that development has been concentrated. An example of this is evident from the 1976 budget of Abu Dhabi, in which 32 per cent of the development expenditure was allocated to urban municipalities, whereas only 3.3 per cent was allocated to rural areas. Industrial expansion has also been concentrated within key urban regions; for example, 96 per cent of the industrial units in Saudi Arabia have been established in the nine largest urban centres, which have 31 per cent of the total population of the country.

The importance of oil revenues being utilised in urban areas is clear in Kuwait where, over the period 1950 to 1970/1, land

TABLE 1.2 OIL REVENUES (\$m)

	1971	1972	1973	1974	1975	1976	1977	1978	1979
Saudi Arabia	2 160	3 107	5 500	22 574	25 673	30 755	36 540	32 235	48 443
Kuwait	1 395	1 657	1 900	8 000	7 500	7 100	7 900	9 770	17 447
UAE	481	625	798	4 245	6 500	7 000	9 030	8 600	12 800
Qatar	198	255	409	1 362	1 690	2 092	1 994	2 000	3 800
Oman	115	122	177	857	1 231	1 340	1 390	1 325	2 157
Bahrain	25	26	36	178	287	457	485	415	530

Source: Economist Intelligence Unit, 1980

purchases represented 21 per cent of the total oil revenue allocations. Land purchase schemes became an important mechanism in the 1950's whereby prosperous Kuwaiti families (mainly Government officials) inhabiting the old town of Kuwait were encouraged by high compensation rates to move to the new low density suburbs. In fact, land prices in the capital rose 32 times between 1952 and 1960 and this type of oil revenue allocation was instrumental in creating social and spatial segregation in the city as well as increased urbanisation.

Halliday⁴ sees this process as intensifying the scale of economic divisions in the societies of the Arabian Peninsula, expressing itself spatially in the growth of core regions and corresponding areas of relative underdevelopment. As the city functions as a centre for the disposal of surplus product, these core regions are strongly identified with contemporary urbanisation. Employment opportunities have increased in these regions, intensifying the "pull" of the core areas in the Arabian Peninsula which, in turn, have become interlinked by an expanding communications programme.

The employment demands for the oil-rich states in the Arabian Peninsula can be illustrated by Table 1.3, which shows the increasing employment generated by various economic sectors in Saudi Arabia.

Oman provides a good example of how the oil-based economy has expanded the employment base. The number of Government employees in 1966 was 1,100; in 1970 the figure had only risen to 1,750, but by 1975 (after the start of the commercial development of the oil industry) the number had increased to 12,035.

Of particular relevance to the urbanisation process in the region has been the increasing number of foreign workers in the labour force. This fact is well-illustrated by Kuwait, as Table 1.4 demonstrates.

Birks and Sinclair⁵ estimate that the Gulf States will have 3.1m migrant workers in 1985 compared with the 1.7m in 1975. The Saudi labour Ministry Director estimates that 70 per cent of the 25m Saudi workforce needed to carry out the 1980-85 Development Plan will be expatriate. The increasing employment of migrants in Qatar is evident in the increase of work permits issued (8,960 in 1974/75 and 30,610 in 1977/78).

TABLE 1.3: SAUDI ARABIA : INCREASING EMPLOYMENT

	Number Employed	'000	% increase	% projected increase 1975-1980
	1970	1975		
Agriculture and Fishing	445.8	426.1	-4.4	-7
Mining - petroleum	120	19.2	60	
- other	13.7	26.4	100	35
Manufacturing	36.1	46.5	29	69
Utilities	12.1	18.3	50	57
Construction	141.5	314.2	122	88
Commerce	130.2	211.0	62	71
Transportation	62.1	103.2	66	58
Services	137.5	188.4	37	62
Government	112.7	158.8	49	
TOTAL	1103.8	1511.0	38	

Source: Metra Consulting, Saudi Arabia Business Opportunities; Financial Times 1976

SAUDI ARABIA : WORK PERMITS ISSUED

1964/65	4,768
1971/72	7,009

Source: 1973 Statistical Yearbook

TABLE 1.4: NON-KUWAITI SHARE OF EMPLOYMENT ECONOMIC SECTOR

	%
Agriculture/Fishing	47.0
Mining	63.4
Manufacturing	90.8
Construction	94.5
Public Utilities	72.1
Retailing	84.0
Communications	70.9
Services	51.5
TOTAL	70.9

Source: 1975 Kuwait Census

Rapidly increasing urban populations are a feature of most developing countries and have stimulated a number of reactions. Basically, such cities are seen either as parasitic enclaves surrounded by a hostile peasantry, or as beneficial centres of modernisation.⁶ The first view can be identified with Hirschman⁷ and Friedmann,⁷ who perceive growing cities in the Developing World as centres of economic development. An alternative view is provided by Frank,⁸ who perceives cities in the developing world to be capitalist structures decaying because of the inevitable decay of capitalism.

Both views need to be considered carefully in the context of rapid urbanisation in the Arabian Peninsula, because according to these views the strategy of urban concentration and urbanisation adopted by all the oil-rich states will either be beneficial to future development or its Achilles Heel.

The remainder of this study will focus on the process of population movements in the urbanisation process and will then consider the patterns and problems that are developing.

NOTES

1. Doxiades Associates, 1968
2. Al-Shuaiby, 1976
3. Economist Intelligence Unit, 1976
4. Halliday, 1974
5. Birks and Sinclair, 1980
6. Hirschmann, 1958
7. Friedmann, 1966
8. Frank, 1967

CHAPTER TWO

Population Movements : The Process of Urbanisation

Attention has been drawn to the importance of migration as a component of population growth and urbanisation in the Arabian Peninsula; this Chapter will analyse the phenomena of population movements in more detail. However, natural increase is another mechanism whereby urban areas are growing in size, and its contribution with reference to urbanisation in the Arabian Peninsula is not insignificant. Whilst migration is important, natural increase as a component of growth is not insignificant. For example, the birth rate for Kuwaitis increased from 37.5/1000 in 1958 to 58.6/1000 in 1966 and for non-Kuwaitis from 21/1000 to 39.5/1000 in the same period. Improvement in medical facilities has been dramatic in the last thirty years and no doubt accounts for a large proportion of the natural increase rate. Rates of natural increase, however, do not explain the population increases and rates of growth shown in Tables 2.1 and 2.2. These examples of Kuwait, Bahrain, Qatar, The United Arab Emirates and Saudi Arabia clearly illustrate the importance of migration as a component of growth. Migration to cities has been regarded as a

... demographic adjustment to changes in the spatial structure of economic and social opportunities that result from the major urbanisation processes ... the exercise of power, capital movement and innovation diffusion. Migration is a derived phenomenon, a symptom of urbanisation and not the thing itself.

As a community, migrants are now one of the largest population groups in the Arabian Peninsula. Saudi Arabia in 1969 had a population of 150,000 foreign workers, which had grown to approximately 500,000 in 1975. Now it is estimated that 70 per cent of the Saudi 25m workforce is expatriate. Official migration statistics (which are probably gross underestimates) indicated a 700 per cent increase in foreigners entering Saudi Arabia in the period 1962-72; and the Second Development Plan

TABLE 21:

a) KUWAIT : POPULATION INCREASE

	Kuwaitis	% annual growth rate	Non- Kuwaitis	% annual growth rate	% Non- Kuwaitis	Total
1957	113 622	-	92 851	-	45	206 473
1961	161 509	9.0	159 712	13.0	50	321 221
1965	220 059	9.0	247 200	11.0	53	467 259
1970	347 393	9.6	391 290	9.5	53	738 683
1975	472 068	6.2	522 749	6.0	52	994 817

Source: Planning Board, Census 1967, 1961, 1965 and Preliminary Results, 1975 Kuwait.

b) BAHRAIN : POPULATION INCREASE

	Bahrainis	% annual growth rate	Non- Bahrainis	% annual growth rate	% Non- Bahrainis	Total
1941	74 040	-	15 330	-	16.6	89 370
1950	91 179	7.6	19 471	1.8	15.4	109 650
1959	118 734	3.4	24 401	3.5	17.1	143 135
1965	143 814	3.5	18 389	9.6	21.0	162 203
1971	178 193	4.0	37 885	-0.2	17.5	216 078

Source: Finance Department Fourth Population Census - A Brief Analytical and Comparative study, August 1967 Population Census 1971

c) QATAR : POPULATION INCREASE

	Qataris	% annual growth rate	Non- Qataris	% annual growth rate	% Non- Qataris	Total
1970	45 039	-	66 094	-	59.5	111 133
1975	52 721	3.4	117 279	15.5	69.0	170 000

Source: First Population Census of Qatar 1970
Estimates from Sinclair, C. (1976) : obtained by personal communication

d) UNITED ARAB EMIRATES : POPULATION INCREASE

	1965	1973	1975	% Annual Growth rate 1962-75
Abu Dhabi	46 375	130 000	235 552	51.0
Dubai	58 571	110 000	206 851	31.4
Sharjah	31 668	50 000	88 188	22.3
Ras al Khaymah	24 387	30 000	57 292	16.9
Al Fujayrah	9 735	12 000	26 488	18.5
Umm al Qaways	3 744	5 700	16 079	43.9
Ajman	4 246	4 400	21 556	51.0
Total U.A.E.	180 226	342 100	552 936	32.7

Source: 1965 Population Census of Trucial States
MEED. (1977) in Special Report on U.A.E. : The Times, Tuesday 21 June 1977 p.1X

1975 Population Census of U.A.E.

TABLE 2.2 SAUDI ARABIA : GROWTH OF SELECTED CITIES

	1940's ¹	1965 ²	1972 ¹	1974 ³
Riyadh	30 000	169 185	420 020	666 840
Jedda	30 000	149 859	381 000	561 104
Mecca	80 000	158 908	274 000	366 801
Medina	20 000	71 998	100 000	198 186
Taif	5 000	59 954	105 000	204 857
Hofuf	30 000	30 000	74 000	101 277
Dammam	-	45 030	95 000	127 844
Al-Khobar	-	40 000	51 500	48 817

Source:

1. Schweizer, G. Chapter 3 in Saudi Arabien (ed) Blume, H. Tubingen 1976
2. Admiralty Intelligence Division Area Handbook for Peripheral States of the Arabian Peninsula
3. Economic Intelligence Unit Saudi Arabia Quarterly Economic Review Annual Supplement 1976

predicted an increase in the number of expatriates to 812,000 by 1980, which was exceeded by 60 per cent. Kuwait experienced rapid increases in its migrant population during the early 1950's; between 1950/51 and 1951/52 the number of migrants doubled, and doubled again in the subsequent year.² Foreigners now comprise over half (53 per cent) of the population and in 1976, whereas Kuwaitis increased by 7,763, non-Kuwaitis increased by 52,400. The 1975 Kuwaiti Census figures, however, indicate the Kuwaiti workforce to be 304,582 compared with 212,738 non-Kuwaitis. Migrants are even more dominant in Qatar where, in 1979, out of the total population of 210,000, 75 per cent were immigrants; furthermore, they constitute 83 per cent of the labour force. Doha's population is 66 per cent non-Qatari and that of Dukha (the oil centre) 71 per cent and, as Table 21a shows, the 1975 estimates for the population of Qatar indicate that the importance of immigrants has increased. They are dominant in a similar way in the UAE, where the expatriate community rose from being 56 per cent of the population in 1968 to 79 per cent in 1975.

For various reasons, Bahrain and Oman do not have such high proportions of their population classified as migrants. Bahrain has never experienced the same enormous oil production figures and revenues as many of the other oil-rich states, and her oil reserves have been declining for several years. As a result, the economy has not expanded to the same degree as that of some of the other states and so has not needed such large amounts of additional manpower to carry out development programmes. But, as Table 21b makes clear, the immigrant community in Bahrain is by no means insignificant and, in 1971, 37 per cent of the workforce was expatriate. Oman is a different case in that it has only recently experienced returns on its oil exploitation programme (owing to the ultra-conservative nature of Sultan Tamir before the 1970 coup). In addition, the size of the Omani population (700,000 approx.) is larger than that of some of the other Gulf States so manpower requirements are not so great. Most observers estimate the expatriate community in the country to be between 5 and 6 per cent. However, the fact that 65 per cent of the labour force is non-Omani indicates that the developing economy will require increasing amounts of manpower in the future. Birks

and Sinclair³ give the following estimates of migrant populations in the Arabian Peninsula States:

Saudi Arabia	1 565 000
UAE	456 000
Kuwait	502 485
Qatar	97 000
Bahrain	56 000
Oman	132 250
Yemen	5 450

The population structures of Kuwait, Bahrain, Qatar and Abu Dhabi are shown in Fig.2 and reveal the characteristics of a population with a high proportion of migrants: there is an excess of males over females as migrants are usually young and come without families. Several points emerge from these population structures. Firstly, the 1965 and 1970 structures for Kuwaitis indicate a growing number of people at the top of the pyramid, which is a reflection of the expansion of social infrastructure (such as health services) since the 1950's when oil revenue first became important to the economy. Secondly, the relatively broad base of the structures is readily apparent. For example, in 1971 48 per cent of Bahrainis were under 15 years and in Qatar the proportion was 52 per cent. This explains the low proportion of Kuwaiti nationals of working age in Table 2.3. This youthfulness of the population is a result of excellent post-natal medical facilities and a high natural birth rate, but also of a migrant group from rural areas that tends to be young with families; this point is discussed below. The population structures of non-nationals clearly illustrate the uneven distribution of age groups with males of working age forming the majority of the population. However, the population structures for non-Kuwaitis in 1965 and 1970 reveal that the community is becoming more balanced, which emphasises the figures in Table 2.3 which show that the proportion of people aged 15-60 years is dropping. One result of this has been a significant change in dependency ratios (Table 2.3). This is particularly true for the Palestinian/Jordanian community, which changed from being fairly typical of a non-Kuwaiti community to one with an almost

FIGURE 2

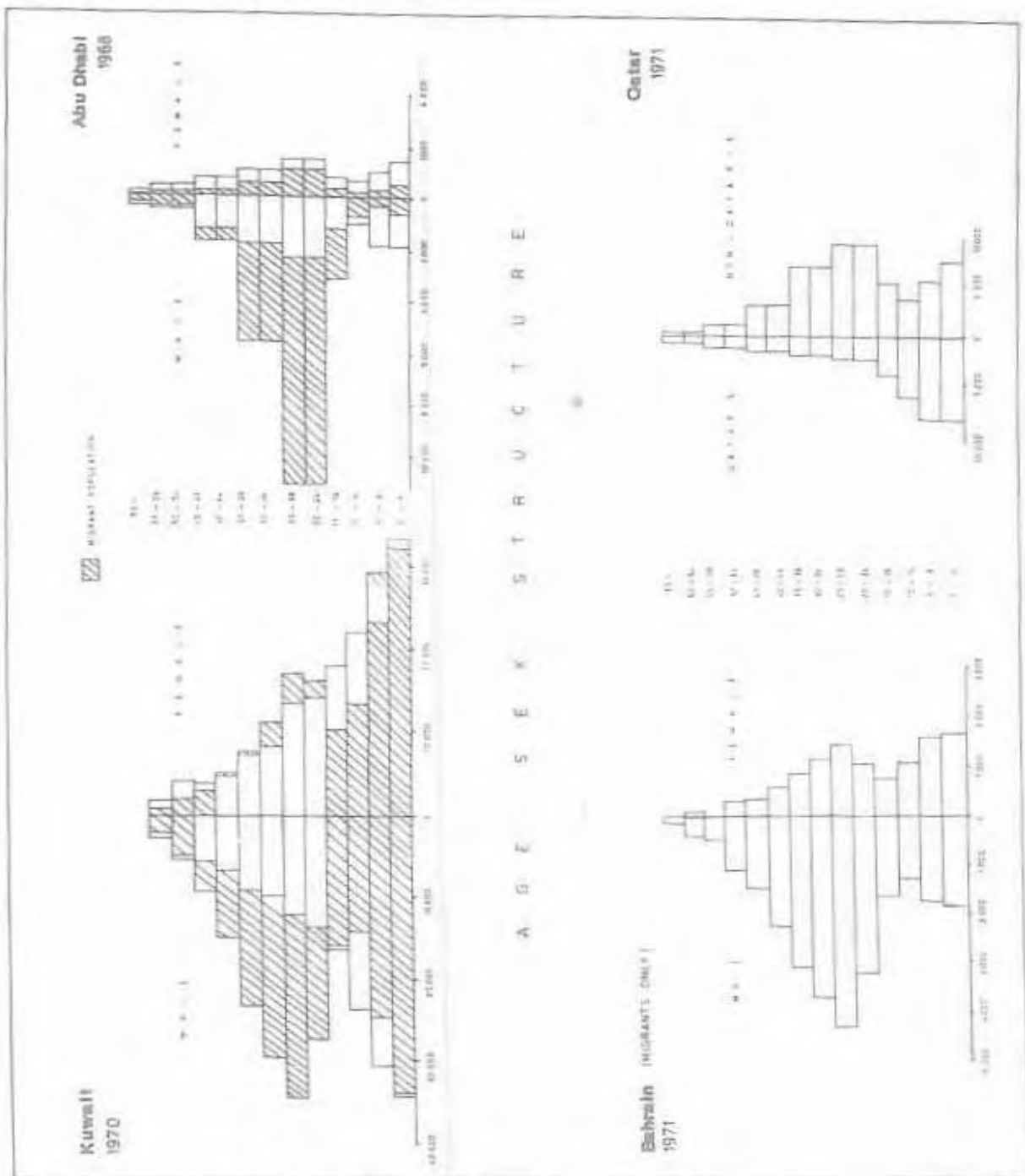


TABLE 23:

a) KUWAIT : PROPORTION OF PERSONS AGED 15-60 YEARS IN KUWAITI AND NON-KUWAITI POPULATIONS

	Kuwaitis	Non-Kuwaitis
1965	46.1	70.3
1970	45.5	61.4

b) CHANGING DEPENDENCY RATIOS : THE NUMBER OF DEPENDENTS PER 100 MALES OF WORKING AGE (15-64) IN KUWAIT

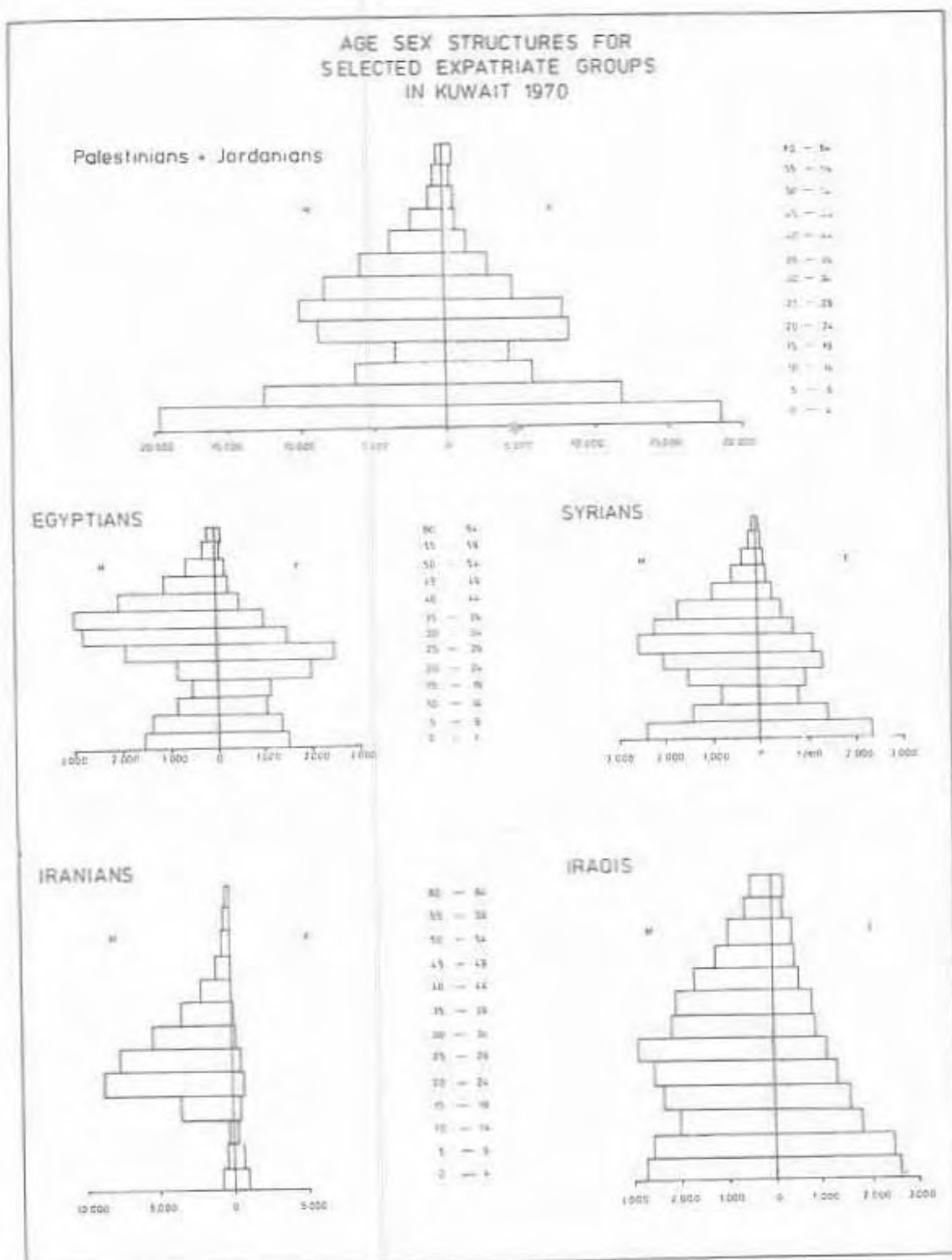
Expatriate Groups	1965	1970
Palestinians/Jordanians	119	256
Iranians	10	17
Syrians	72	120
Egyptians	177	125

Source: 1965 Population Census of Kuwait Table 23, p.204
 1970 " " " Table 42 p.347

proportionate number of women and children over the period 1965 to 1970. If this trend to families continues through other non-national groups of the population and in other oil-rich States of the Arabian Peninsula, then there will be a proportionate effect on various facets of urbanisation. For instance, the increasing number of people will place extra demands on social and infra-structural facilities such as water and housing, a point which is made in Chapter 4. At the moment, however, most of the migrants are of working age, as the population structures of selected expatriate groups in Kuwait shown in Fig.3 illustrate.

It will be useful at this stage to consider briefly the reasons for these high proportions of immigrants. Such motives can be conveniently discussed under the terms "push" and "pull". Perhaps the most basic factor pulling migrants to the urban areas of the oil-rich countries in the Arabian Peninsula is the lack of manpower in the expanding economies of the countries concerned. The countries concerned all have small populations with high proportions of their populations under 15 years of age. In addition to this, women, who comprise approximately half the national population, are not available for work under Islamic tradition. The recent nature of economic development in the oil-rich countries has not enabled an indigenous professional and technical élite to emerge, creating a manpower gap. In 1965 non-Saudis represented 40 per cent of industrial workers and 80 per cent of professional workers. Jordanians, Palestinians and Egyptians represent 60 per cent of all professional workers in Kuwait, and in Bahrain 54 per cent of professional workers and 82 per cent of all technical jobs are staffed by expatriates. The proportion of expatriates in the labor force in Qatar is 83 per cent and in Abu Dhabi 81 per cent. In the construction industry there are extremely high levels of non-nationals - 85 per cent of Oman's construction workers are foreigners, a proportion similar to elsewhere in the Arabian Peninsula. As will be seen, Yemenis are almost dominant in the Saudi construction industry where . . .

FIGURE 3



At present the basic work of building Saudi Arabia into a modern state falls on the shoulders of a huge and so far uncomplaining Yemeni labour force of which there are various estimates of size - from 500,000 to perhaps more than a million.⁴

The nationality structure of Kuwait by economic sectors for Kuwait was shown in Table 1.4. Table 2.4 shows the nationality structure of Qatar's occupational groups to illustrate further the dominance of foreigners. As the previous Chapter mentioned, the expansion of employment opportunities is a result of the rapid growth of oil revenues and the employment generated is almost exclusively in the economically dominant urban centres. For instance, the dominance of foreign workers in the urban-based employment sectors of manufacturing, commerce, services and construction is illustrated in these Tables. In Table 2.5 the economic and occupational structure of the seven largest expatriate groups in Kuwait is shown for 1970, which illustrates how particular groups are concentrated in particular sectors. For instance, Egyptians in Kuwait are in the service sector. It is also apparent that, besides economic divisions between the groups, there are socio-economic divisions within each national group. For example, although 20 per cent of Palestinians/Jordanians are in the professional class, 40 per cent are in production processing. Another expression of this in-group diversity is the literacy rate summarised in Table 2.6.

The previous Chapter indicated how employment opportunities would probably increase along with the continuing expansion of the national economies. This tremendous "pull" of employment opportunities is made directly possible by the offer of social, medical and educational facilities and higher wages than in the home countries of the immigrants.

This is certainly the reason why large numbers of Yemenis, Indians, Pakistanis and Iranians migrate to the urban areas of the oil-rich countries in the Arabian Peninsula. Implicit in this fact is one of the major "push" reasons for migration. Areas outside the core areas of economic development (i.e. the main urban centres) in the Arabian Peninsula, and a number of

TABLE 24: QATAR : OCCUPATION BY NATIONALITY, 1970

	Total Employed	% non-Qatari
Agriculture etc.	2 070	96
Manufacturing	5 242	65
Construction	7 785	97
Oil	2 209	43
Trade	7 885	89
Banking	302	97
Transport	3 226	80
Government	6 172	77
Services	13 499	86
Professional	2 900	81
Clerical and related	4 585	72
Sales workers	3 775	81
Road transport drivers	3 711	65
General labourers	9 292	87
Domestic servants	3 524	89
Other service workers	3 590	90

Source: (First Population Census of Qatar April/May 1970)

TABLE 25: KUWAIT : ECONOMIC AND OCCUPATIONAL STRUCTURE OF
SELECTED NATIONALITIES, 1970

	Country of Origin							
	Iraq	Jordan/ Palestine	Lebanon	Oman	Syria	Yemen P.D.R	Egypt	Kuwait
% of total labour force	7.2	17.6	3.6	4.5	5.4	29	7.5	25.5
Number	16,877	41,046	8,367	10,411	12,548	6,842	17,514	59,393
% employed in:								
Agriculture	2.2	2.2	0.3	2.3	1.3	3.7	0.7	1.3
Mining	8.2	3.2	2.4	3.5	0.6	1.0	0.3	2.8
Manufact- uring	14.5	19.6	22.9	6.2	22.2	10.3	7.4	10.3
Construc- tion	24.3	10.9	20.9	2.9	21.6	6.6	24.0	3.7
Electricity etc.	2.3	6.4	1.1	3.6	2.2	2.8	1.5	3.6
Commerce	11.2	15.3	20.3	8.7	21.9	13.4	5.5	12.3
Transport etc.	4.2	6.5	6.4	3.0	4.8	5.1	2.5	4.0
Service	33.1	35.9	25.7	69.8	25.4	57.1	58.1	52.0
TOTAL %	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Number	17,094	41,299	8,419	10,483	12,659	6,898	17,714	59,861
% classed as:								
Professional	4.2	20.1	12.0	0.8	6.8	0.7	37.7	6.2
Managerial	0.3	0.7	2.4	-	0.5	-	0.8	1.0
Clerical	6.5	18.1	10.4	4.4	4.7	11.4	7.3	19.2
Sales	6.1	8.2	14.5	3.8	16.6	22.0	1.7	11.0
Services	23.6	10.3	11.1	55.6	12.8	40.0	16.0	36.8
Agriculture Production processing	3.0	2.4	0.2	2.4	1.2	1.0	0.5	1.4
TOTAL %	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Source: (Calculated from: Planning Board 1970 Population Census of Kuwait
Part 1 Tables 21 and 53).

TABLE 26: KUWAIT : ILLITERACY OF FOREIGN POPULATION

	% illiterate
Iranian	70.1
Iraqi	56.4
Saudi Arabian	48.4
Syrian	24.6
Egyptian	23.4
Jordanian and Palestinian	16.9
Lebanese	13.0

Source: Planning Board, 1970 Census, Kuwait, Table 48, p.367 (Arabic)

countries outside the Peninsula, have depressed economies vis-à-vis these core areas.

When the attraction of these latter areas reaches a critical limit, people who have the ability to do so will migrate. Many of these migrants are from rural areas; Hill⁵ states that, in 1964, 68 per cent of Jordanians were from rural areas and almost all Iranian immigrants were from rural backgrounds. Political factors have also contributed to substantial migration flows. Ever since the State of Israel was proclaimed in 1948, many Palestinian and Jordanian refugees have come to Kuwait where, in 1970, they represented 38 per cent of the foreign population. The independence of India in 1947 was another political factor that occurred at the time when the countries of the Arabian Peninsula were experiencing rising oil revenues. Not included in these groups of migrants is the group of professional Europeans and Americans who are contracted in by the national governments and international companies to give particular advice or to run surveys which the indigenous population is not capable of doing.

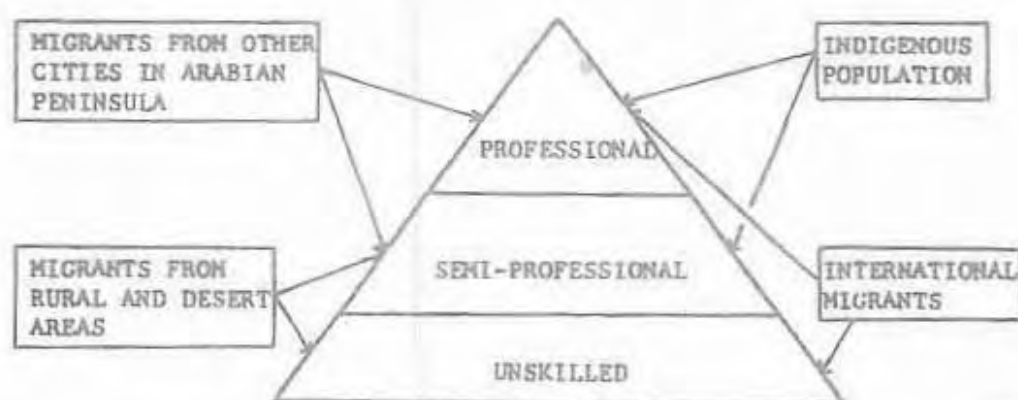
This discussion has so far focussed on the dominance of expatriate groups in the Arabian Peninsula and their importance in the various economic sectors and urban areas, and has summarised the reasons for migration. It is possible to put forward the schematic model shown in Figure 4 to illustrate the population flows under discussion.

Saudi Arabian cities will be used as examples to show the significance of the population movements in the urbanisation

process in the Arabian Peninsula. The growth of selected Saudi towns since the 1940's was shown in Table 22; such growth cannot only be due to natural increase alone. Migration is an important component of the growth of these cities; Table 27 and Fig. 5 show the

FIGURE 4

FLOW OF MIGRANTS INTO THE OCCUPATIONAL STRUCTURES
OF THE URBAN AREAS OF THE ARABIAN PENINSULA



proportion of migrants in the cities' populations (both Saudi and foreign-born). This demonstrates the importance of international and internal migration in their expansion. The age structure of selected cities is shown in Table 28, and is similar to the other strong migrant populations discussed above. To illustrate the position more fully, the cities of Al-Khobar, Dammam, Riyadh and Medina will be looked at in more detail.

Al-Khobar and Dammam are two cities that have grown directly as a result of the oil industry in Saudi Arabia and, as Table 22 demonstrates, have experienced rapid growth. Eighty-five per cent of the family heads in Dammam and Al-Khobar are migrants (Table 29) and 65 per cent of these come from within Saudi Arabia. The age structure of the populations of Dammam and Al-Khobar is represented in Figure 6, and emphasises how the population is dominated by migrants.

TABLE 27: SAUDI ARABIA : ORIGINS OF POPULATION IN
SELECTED CITIES, 1972

	% Saudis	% Non-Saudis	% born in city	% migrants
Jedda	57.9	42.1	11.8	88.2
Mecca	73.4	26.6	41.4	58.6
Medina	82.7	17.3	35.8	64.2
Taif	75.0	25.0	16.1	83.9
Yanbu	93.6	6.4	72.7	27.3
Hofuf			78.9	21.1
Al Mubarraz	94.5	5.5	89.3	10.7
Dammam			7.8	92.2
Al Khobar			4.0	96.0
Qatif			86.1	13.9

Source: Regional Planning Authorities in Jeddah and Dammam
from: Schweizer, G. Chapter 3 Saudi Arabien (ed) Blume, H.
Tubingen, 1976.

TABLE 28: SAUDI ARABIA : AGE STRUCTURE OF SELECTED CITIES, 1972

	Population	% 14 yrs.	% 15-44 yrs.	% 45-46 yrs.	% 65+
Riyadh	420 000	46.3	44.3	7.3	2.1
Jedda	381 000	46.2	42.6	8.8	2.4
Mecca	274 000	46.1	39.8	11.1	2.9
Medina	100 000	49.2	36.9	10.0	3.9
Taif	106 000	48.9	41.4	7.8	2.2
Hofuf and Al Mubarraz	111 000	50.3	35.6	10.2	3.9

Source: Regional Planning Offices of Central, East and West Regions
From: Schweizer, G. Chapter 3 Saudi Arabien (ed) Blume, H.
Tubingen, 1976.

Figure 5

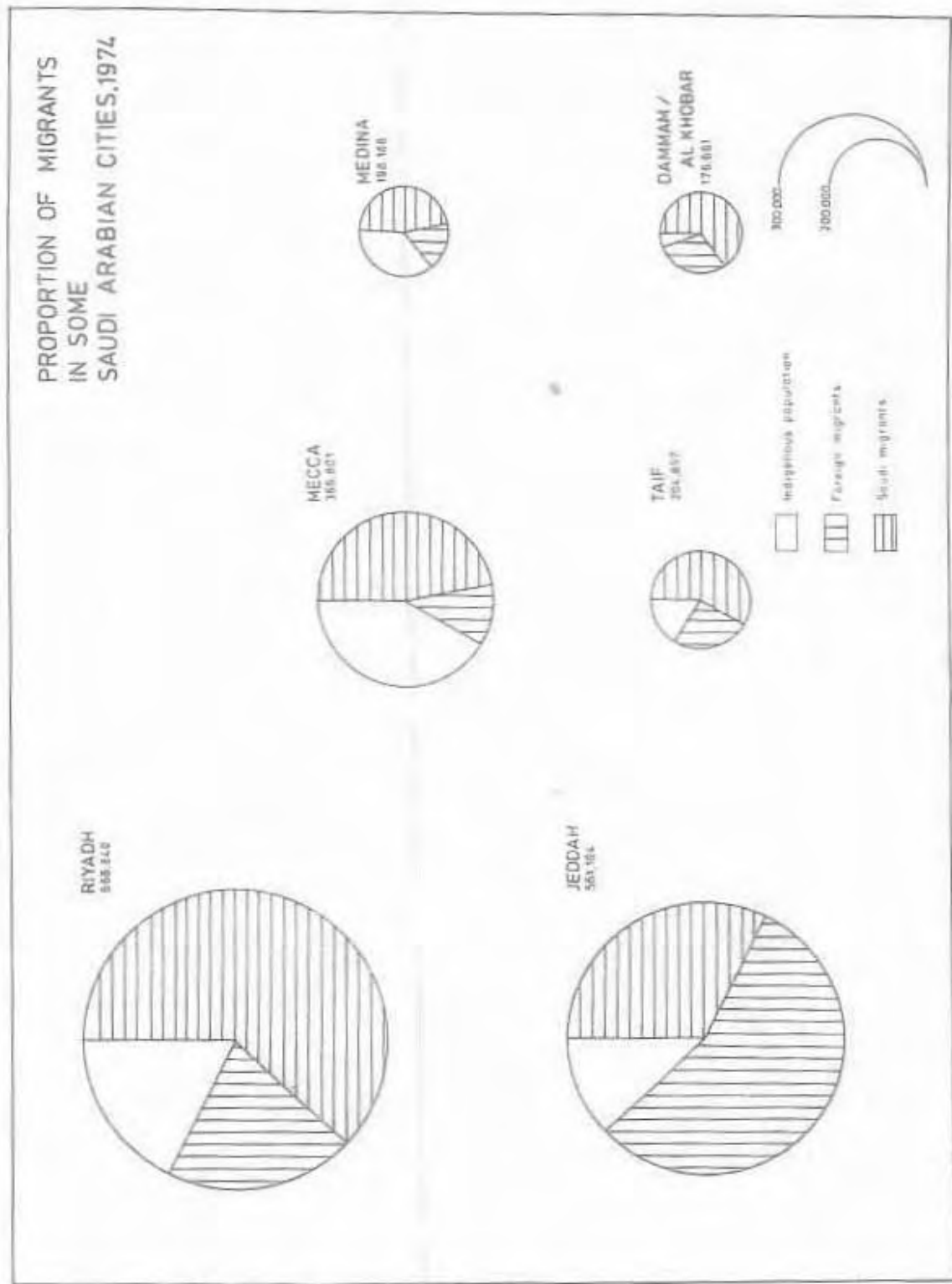


TABLE 29: DAMMAM AND AL-KHOBAR : ORIGIN OF FAMILY HEADS

<u>origin</u>	<u>%</u>
born in Dammam/ Al-Khobar	10.5
migrants within Eastern Province	29.6) 65% within
Saudi migrants outside province	35.8) Saudi Arabia
foreign born migrants	19.1

Source: Al-Shualby, 1976

Riyadh lies at the centre of the 'development axis' in Saudi Arabia, and according to the 1968 Sample Survey carried out by Doxiades Association⁶, 85 per cent of the city's household heads were migrants. The origin of these migrants is shown in Table 2.10a and Figure 6 shows the age structure of the population. Another major city on the 'development axis' is Medina which, in 1972, had 65 per cent of its household heads classed as migrant (see Table 2.10b).

These examples of Saudi Arabian cities make it clear that population movement has represented an important factor in urban growth and urbanisation and that the cities which are growing fastest by migration are within the 'development axis' across the Arabian Peninsula. The earlier part of this Chapter illustrated the importance of migrants in the populations of the other oil-rich countries of the Arabian Peninsula and, as the majority of these populations are in a few urban centres, migration plays an important part in their growth. It is suggested here that migration, being a symptom of the spatial concentration of power, capital and surplus production in economic core areas, is a highly important component of the contemporary urbanisation process within the Arabian Peninsula. This Chapter will conclude with a proposed model of this migration process and will look at the movements more closely.

The model of population movement presented here is that urbanisation is occurring largely because of:

- a) international migration;
- b) migration between countries within the Arabian Peninsula;
- c) internal migration within the countries concerned.

FIGURE 6

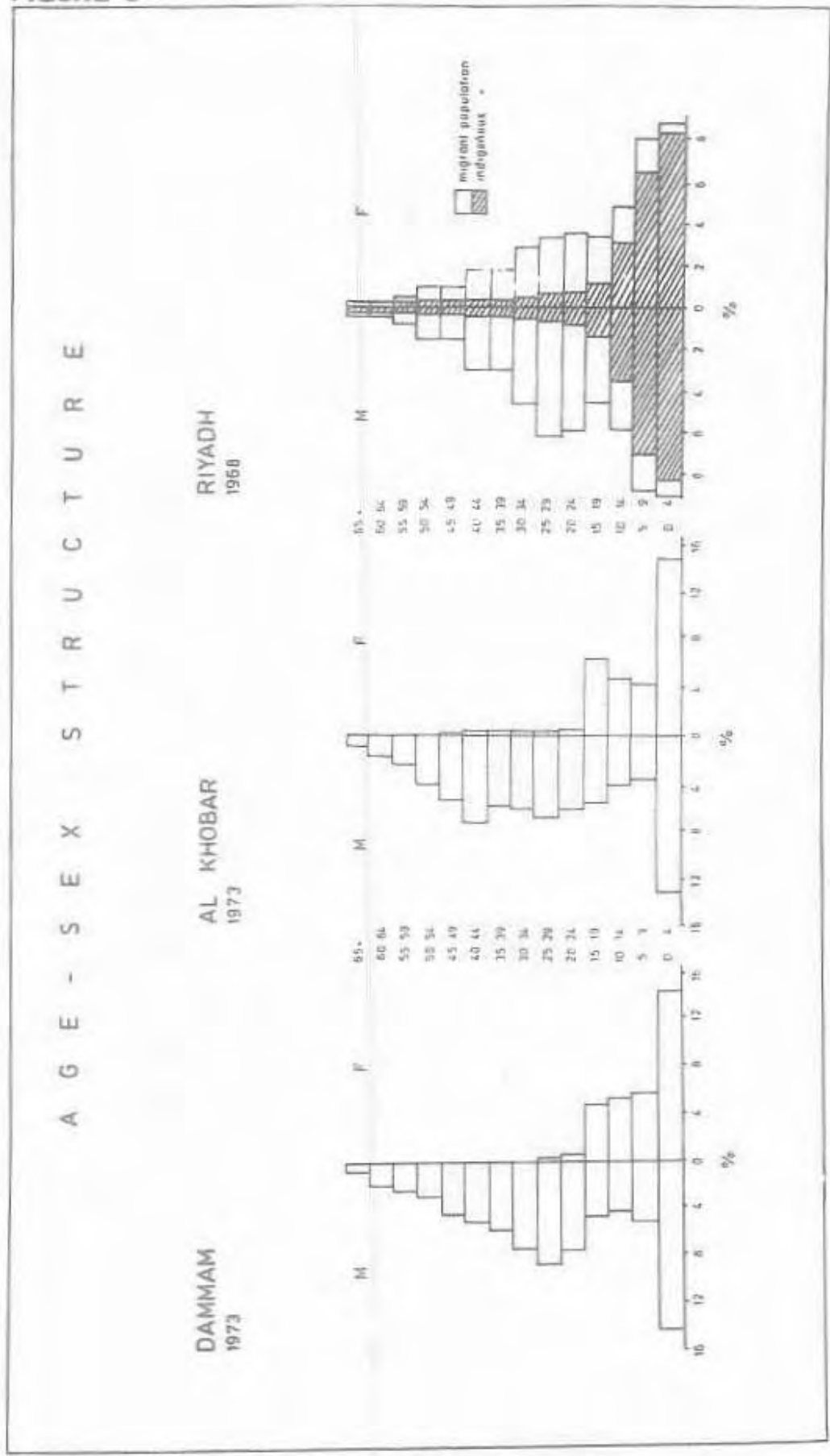


TABLE 210:

a) RIYADH : ORIGIN OF FAMILY HEADS, 1968

<u>origin</u>	%	
Saudis born in Riyadh	15.0	
others born in Riyadh	0.1	
from other Saudi cities	21.0) 41% rural-
from Saudi villages	36.8) 62% within) urban
Saudi nomads	4.5) Saudi Arabia) migrants
other Arabs	21.2	
non-Arabs	1.4	

Source: Doxiades Assoc.(1968) Riyadh : existing conditions
Riyadh

b) MEDINA : ORIGIN OF FAMILY HEADS, 1972

<u>origins</u>	%
born in Medina	35.8
born outside urban area	10.2
born in rural areas	15.4
born in other Saudi cities	26
foreign-born	35.9

Source: Matthews, R. (1972) Al Haikal Al-Iklimi Ministry of the
Interior Municipalities Affairs (1) Riyadh p.18. quoted
in Mecci

These movements are taking place because of core-periphery relationships that have become increasingly apparent since the advent of oil revenues.

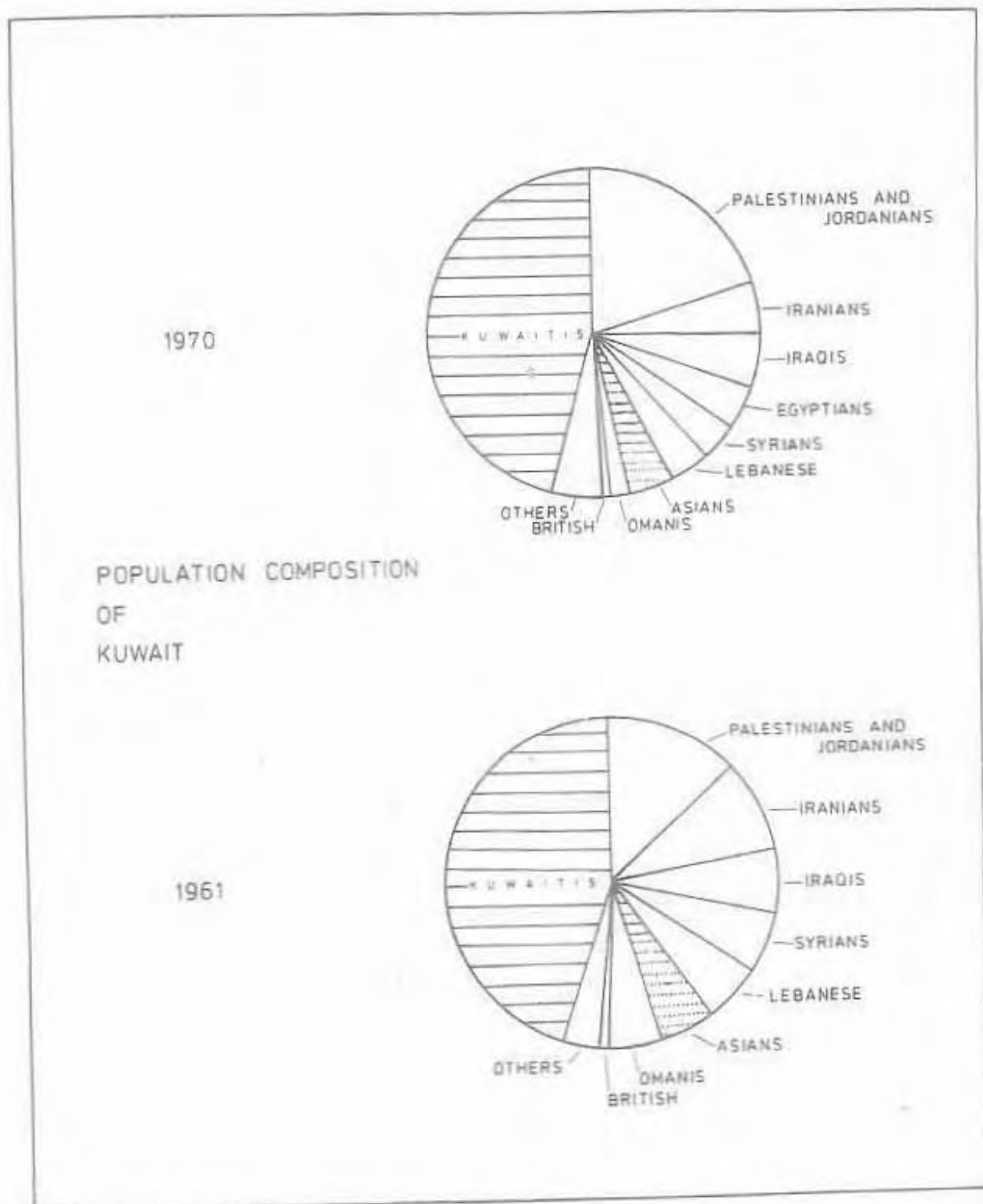
International migration to the Arabian Peninsula is the most important migration flow to urban areas in terms of quantity. The origins of migrants to Saudi Arabia, Kuwait, Qatar, Bahrain, Abu Dhabi and Oman are summarised in Table 211 and the changing proportions of the main migrant groups in Kuwait are shown in Figure 7. Four principal flows emerge from these figures. Table

TABLE 2.11: SUMMARY OF MAJOR INTERNATIONAL MIGRANT GROUPS

	Levanti/Egypt immigrants		Iran/Iraq		Asians		Europeans/Americans		Total immigrants	
	No.	% total	No.	% total	No.	% total	No.	% total	No.	% total
Kuwait	270 487	69	78 195	20	32 048	8	3 552	1	391 266	98
Qatar	10 780	19	17 638	31	18 530	33	974	2	56 211	85
Bahrain	2 237	6	5 180	14	12 214	32	3 474	9	37 885	61
Abu Dhabi	N.A.		20 000	11	50 000	27	5 000	3	185 000	41
Dubai	N.A.		15 000	10	50 000	35	5 000	3	145 131	48
Oman	N.A.		N.A.		5 599	35	N.A.		15 919	35
TOTAL	283 504	34	135 013	16	168 391	20	18 000	2	831 412	72

Sources: Calculated from Tables 5.15 to 5.21

FIGURE 7



2.11 reveals that migrants from the Levant and Egypt are the most important in the Gulf, comprising 34 per cent of all immigrants. However, it is only in Kuwait, where they constitute over two-thirds of all immigrants, that they represent a majority; in all the Gulf States the Asians form an important group in the foreign populations. It is interesting to note that, in Kuwait, Palestinians and Jordanians represented 38 per cent of the foreign population in 1970, and Indians and Pakistanis only 8 per cent. Conversely, in Qatar the proportion of the latter group was 31 per cent while Palestinians and Jordanians were only 14.5 per cent of the foreign community. This may suggest that the attraction of the oil states is to some extent related to politics (Kuwait has been far more sympathetic to the Palestinian cause than Qatar) and geographical position (Asians are more important in the southern Gulf States than in Kuwait, and Iranians and Iraqis are most prominent in Kuwait).

Saudi Arabia does not have these major migrant groups as Yemenis are the most important. However, foreign migrants comprise;

- 42% of Jeddah's population
- 36% of Medina's population
- 23% of Riyadh's population
- 19% of Dammam/Al-Khobar's population

The origin of foreign migrants to Dammam and Al-Khobar can be seen by referring to Table 2.12.

TABLE 2.12 DAMMAM AND AL-KHOBAR : ORIGIN OF FOREIGN MIGRANTS

Origin	Number	%
Gulf countries	163	25.9
Other Arab countries	435	69.2
Non-Arab countries	31	4.9
TOTAL	629	

Source: based on a survey carried out by Al-Shuaiby (1976)

The data suggest that over two-thirds of the foreign migrants come from Arab countries other than the Arab Gulf states; unpublished immigration figures show that, in 1972, Yemenis represented 59 per cent of the foreign-born in Dammam and Al-Khobar. However, migrants from Asia are becoming increasingly important in Saudi Arabia; for example in 1974 there were 400 South Koreans in the country and in 1973 this had increased to 40,000. Many of these are air-lifted on a contract basis - for example, a shortage of refuse disposal workers during the 1976 Hajj season led the Saudi government to sign a contract with Pakistan to supply 15,000 street cleaners.

The second major migration flow under consideration is between the countries of the Arabian Peninsula, and Table 2.13 summarises the major flows in the form of a matrix. In this matrix it is the high number of Yemenis which stands out. The Yemenis are in every sense peripheral regions of the Arabian Peninsula, and, since the British withdrew from Aden in 1967 and the Suez Canal closed in the same year, with a resultant decline in employment and prosperity, many thousands of Yemenis have migrated to the booming economies of the oil-rich states to work as labourers. In A.R. Yemen the 1970 civil war coincided with the beginning of the massive building boom in Saudi Arabia and consequently many Yemenis migrated north for work. In 1974 there were 250,000 North Yemenis working abroad and the number increased in 1977 to 540,000. Remittances in 1976 equalled \$900m, - an important source of national income. The number of Yemenis in Saudi Arabia is probably at least 500,000, but there is considerable difficulty in arriving at precise figures as many Yemenis are in Saudi Arabia illegally.

The Yemenis constitute the most important migration flow within the Arabian Peninsula but, as the matrix indicates, Omanis are well represented too. Before the revenues from oil production were used for the development of the country on a large scale, Omanis were an important source of service and construction labour in the Gulf States, which explains the numbers there today. Many of the Omani migrants were from rural areas and, when they returned from a period of work abroad, the majority did not re-enter the agricultural sector. Instead, they migrated to the growing urban area of Muscat-Muttrah where

TABLE 213: MIGRATION WITHIN THE ARABIAN PENINSULA

To: From:	Saudi Arabia (1973)	Kuwait (1970)	Qatar (1970)	Bahrain (1971)	U.A.E.* (1975)	Oman (1973)	Yemen
Saudi Arabia	-	10 897	2 042	1 322	n.a.	-	n.a.
Kuwait	50 562	-	35	41	n.a.	320	n.a.
Qatar	27 906	-	-	146	n.a.	111	n.a.
Bahrain	32 717	966	686	-	n.a.	190	n.a.
U.A.E.	1 255	-	2 243	770	n.a.	495	n.a.
Oman	5 166	14 670	3 271	10 785	n.a.	-	n.a.
Yemen	72 845	8 604	2 285	1 538	9 000	54	-

*Abu Dhabi and Dubai only

employment opportunities were expanding. From a sample survey carried out in Dhahira in Oman, 80 per cent of adult males had worked abroad.⁸ The effect of this migration has been to depress agriculture (some evidence is provided by a decline in the maintenance of falags) and exacerbate rural-urban migration within Oman.

This latter phenomenon in Oman is now an important migration flow contributing to the growth of the urban core area of Muscat-Muttrah. It has occurred while emigration of Omanis to other areas in the Gulf has declined. Rural-urban migrants are important elsewhere in the Arabian Peninsula and are contributing to urbanisation and urban growth. In Kuwait about 25 per cent of the population live in shanties and, in 1970, 81 per cent of their inhabitants were Kuwaitis who had migrated in from rural areas. The importance of rural-urban migrants in the populations of Saudi Arabian cities is evident from Table 2.10; for example, 41 per cent of Riyadh's household heads are from rural areas. These have come to Riyadh because employment opportunities are superior to those of the rural areas; there was also a large influx after the serious 1957 drought in Saudi Arabia which lasted for approximately seven years. The figures in Table 2.14 illustrate the decline in the nomadic population over this time:

TABLE 2.14: DECLINE OF NOMADS IN SAUDI ARABIA

	1958	1964
Camels	100 000	1 565
Cows	660 000	8 296
Sheep & Goats	270 000	28 467

In 1970 there were 445,800 persons in the agricultural labour force in Saudi Arabia or 40.4 per cent of the total labour force, which declined⁹ to 422,100 or 28.0 per cent of the total labour force in 1975.

Another form of internal movement within the countries of the Arabian Peninsula is seasonal movement. In some instances these are bedouin (al-Artawiyah's winter population of 16,000 is augmented by 24,000 bedouin in summer) or tourists escaping the

heat of the lowland cities (Taif has a summer population of 150,000 compared with a winter one of 75,000). This 'temporary urbanisation' is epitomised by the growth of Mecca and Medina during the Hajj season. This is an important migration flow as, for example, the pilgrims in 1976 numbered about 2m. These extra numbers place increasing strains on the infrastructural facilities of the cities concerned. The increasing number of pilgrims is illustrated by Table 2.15 and the projected number of pilgrims in 1991 is 3m. Pilgrim movement within Saudi Arabia is also considerable. Yemeni pilgrims represent the largest movement with the Peninsula, comprising 13 per cent of the total number of foreign pilgrims.

TABLE 2.15: PILGRIMS ON THE HAJJ

	Non-Saudi Pilgrims
1945	37 630
1950	107 562
1955	232 971
1960	253 369
1965	283 319
1970	431 270
1971	479 339
1972	645 182
1973	607 755
1974	918 777
1975	894 573
1976	719 040

Source: Shirreff, 1976

Rural-urban migration is by far the most common internal migration movement occurring and, in order to illustrate how it relates to the core-periphery model described above, the example of migration from Al-Hasa oasis in Saudi Arabia to the oil towns of the Eastern Province will be used. Al-Elawy¹⁰ undertook a survey to identify "push" and "pull" reasons in migration, the results of which are set out in Table 2.16. Low income from

TABLE 2.16:

REASONS FOR IMMIGRATION TO OIL CENTRES ("PULL" REASONS)

	Offered a Job	Looking for a Job	Moved or Started a Business	Family Relations	Other	Total
Number	44	53	6	1	4	108
%	40.7	49.1	5.6	0.9	3.7	100

REASONS FOR LEAVING AL-HASA AREA ("PUSH" REASONS)

	Low Income from Agriculture	Gardens affected by sand & salinity	Poor Living Conditions	Other	Total
Number	89	11	5	3	108
%	82.4	10.2	4.6	2.8	100

Source: Al-Elawy, 1976.

agriculture, the traditional economy of the area, was by far the most important "push" factor which corresponded with employment opportunities in the oil centres being the major "pull". Al-Elawy concluded that Al-Hasa had been forced to concede power to these expanding oil centres as it was in the latter that power and wealth were vested. As an example of this, the percentage increase in commercial establishments from 1967 to 1971 was 2.9 per cent for Hofuf, 31 per cent for Dammam and 1050 per cent for Al-Khobar. Thus, the higher purchasing power was in the oil centres. Industrial establishments were being concentrated in the core region of the oil centres too : the percentage change in these from 1967 to 1971 was - 5.1 per cent for Hofuf, + 3.2 per cent for Dammam and + 18.9 per cent in Al-Khobar. Furthermore, the penetration of the capitalist mode of production into Al-Hasa from the economically dominant oil centres is inducing social and spatial change. New roads have been built connecting it with the core area, the old Sunni/Shi'a division in the community is being replaced by an economic one, and periodic marketing is declining with the introduction of Western-style market centres.

This example of a changing rural area serves to illustrate how the polarisation of power and capital in core areas of development has created peripheral areas. These areas are not cut off, but have relationships with the centres of 'modernisation', which enable these core areas to maintain their economic supremacy. It is the migration process which is the spatial manifestation of this structure of the economy, and it is by the process of population movement that the Arabian Peninsula is being rapidly urbanised. Having looked at the processes leading to urbanisation, the next Chapter will consider some of the resulting patterns.

NOTES

1. Friedman & Wolff, 1976
2. Hill, 1969
3. Birks & Sinclair, 1980
4. Hobday, 1976, VII
5. Hill, 1969
6. Doxiades Associates, 1968
7. Al-Shuaiby, 1976, 126 (Table 4.56)
8. Birks, 1976
9. Economist Intelligence Unit, 1976
10. Al-Elawy, 1976

CHAPTER THREE

Patterns of Urbanisation

The processes discussed so far have resulted in a pattern of urbanisation that is by no means uniform. This Chapter will look at the diversity of patterns in a way which will create an understanding of the regional networks operative in the Arabian Peninsula. Although the core areas of regional development have many common characteristics (i.e. large numbers of migrants, ostentatious public and private buildings, key social services) there are considerable varieties within. For instance, in the Saudi Arabian core region, Jeddah has the role of port and Dammam that of oil centre, while Riyadh is the administrative centre and political capital. As previous chapters have mentioned, the urbanisation process in the Arabian Peninsula can be spatially identified by the growing urban centres; so, using this premise, the variety of patterns can be studied by categorising the expanding urban centres in the following way:

- (i) traditional cities that have expanded owing to the direct influence of oil;
- (ii) traditional cities that have expanded owing to the general expansion of the economy rather than of the oil industry per se;
- (iii) new cities that have been created either because of oil, or to alleviate overcrowding in the growing traditional cities.

Owing to the paucity of data regarding urban centres in the Arabian Peninsula, much of the information used in this chapter comes from planning consultants' reports and theses on particular cities. There is also much areal variability in the data available; while Kuwait is relatively well covered, the U.A.E. and Oman are not. Representative case examples of the three major categories mentioned above will be examined,

What is most characteristic of the urban growth in the region is the rapidity of change. For instance, Shiber notes that old and new in Kuwait are very close to each other in

spatial terms, and what took Europe 150 years to accomplish took Kuwait 10 years on account of rapidly rising oil revenues. The example of Kuwait City's expansion will be used as representative of the first category of urban expansion² - a traditional city expanding directly as a result of oil. Stephens² describes the growth and change of Kuwait in the following way:

"Although there was little historic sentiment or architectural merit attached to the old city, its destruction and replacement by a new motorised city covering twenty times the former area meant also a blow at the traditional way of life of a closeknit community which had been like that of a medieval town.

The whole question of change³ in Kuwait has been covered in a polemical way by Shiber³ who states that,

From a lagsadaisically busy and Gulf city of beautiful urban aspects ten years ago, Kuwait has exploded, spilling over miles of scorching desert sand.

This tremendous urban explosion is a clear expression of urbanisation as, prior to 1950, the majority of Kuwait's population lived within the 700 ha bounded by the mud wall built for defence purposes in 1918. The principal urban features were the dhow harbour, the main market place and souk, and the larger houses on the seafront inhabited by the pearling merchants. However, in the early 1950's Kuwait City became a focus of increasing population, government and commercial activity. One of the first British planners to visit Kuwait in the post-oil era was Macfarlane,⁴ who in 1953 wrote:

Prosperity is bringing great changes. Fleets of showy American cars, buses and huge ex-army lorries, throng the streets, imposing an almost unbearable strain on narrow roads more suited to the camel and donkey . . . The number of shops, warehouses and cafes in the town is rapidly increasing and many houses

are being converted to garages and motor repair shops

... It is clear that vast changes are coming to Kuwait, and compressed into the space of a few years are developments which elsewhere have taken centuries.

In 1954, the Minopiro, Spencely and Macfarlane Plan⁵ was commissioned by Shaikh Abdulla Al-Salim Al-Sabah to deal with these changes. The basis of the Master Plan was a 250m 'cordon sanitaire' around the old wall. Inside the wall the old street pattern was dramatically changed by the introduction of a new pattern of wide roads to cope with the increased numbers of vehicles. The major axis of development was Fahad Al-Salim Street, around which the new commercial core was built. To make way for these developments, the Government introduced a scheme of property acquisition in 1952 by which Kuwaiti owners of land or property were enticed by generous compensation money to move to new neighbourhood units on the other side of the 'cordon sanitaire'. Between January 1952 and April 1971, a great deal was spent on this property acquisition scheme - 50 per cent more than on public capital expenditure; as a result of this, land prices rose thirty-two times between 1952 and 1960. To the south of the city, four concentric roads were laid out with radial roads at right angles to these. A 'superblock system' was created (Figure 8) with each neighbourhood block having approximately 900 houses. Each neighbourhood unit was to have a local centre comprising shops, a mosque and school. The land uses in a typical neighbourhood are shown in Table 3.1

The Minopiro, Spencely and Macfarlane Master Plan was meticulously followed but continuing growth of population necessitated a review. In 1967 the Municipality Development Plan was adopted which extended the broad layout of the earlier plan. Two more rings were added to the neighbourhoods and the commercial core of the old city continued to be expanded. Secondary centres expanded, often around industrial nuclei. These can be seen in Figure 8 and include Abraaq Khitan and Farwaniya in the south west, and the east coast ribbon development as far south as Fahahil. The latter development includes the oil refinery and industrial estate created at

FIGURE 8

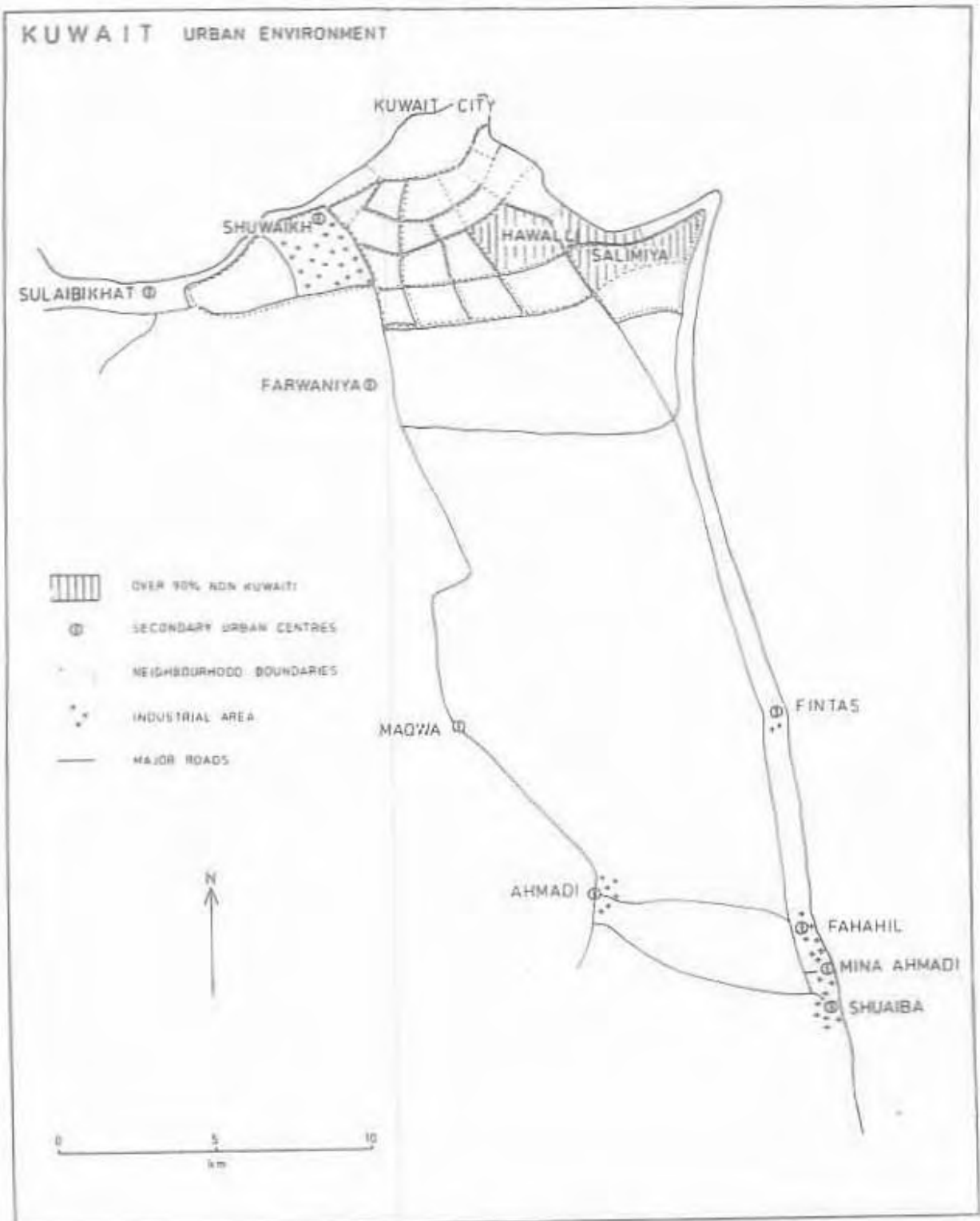


TABLE 3.1: KUWAIT : LAND USES IN A TYPICAL NEIGHBOURHOOD

	%
Residential	33
Educational	10
Commercial	3
Roads	23
Public open space	6
Other uses	3
Vacant land	22
Total	100

Source: Buchanan, C. and Partners Report on Kuwait Vol.1, p.40.

Shuaiba in 1961, and the new town at Ahmadi; this is the area that has grown rapidly since the industrial diversification policy in the 1960's when these towns became development foci. To the west of Kuwait City, the Shuwaikh industrial area has been created, linking the city with Sulaibikhat. The result of these developments has been a city that has expanded very rapidly as can be seen in the stages of growth shown in Figure 9. Such stages of physical expansion are closely related to the population increase. Indeed, since the early 1950's Kuwait's population has quadrupled and the city has expanded five-fold.

As a result, Buchanan and Partners were contracted to produce a new Master Plan in 1970; their conclusions were that future development should be concentrated along the coastal zone linking Kuwait city with Shuaiba. The urban concentration in Kuwait that was a development of the urbanisation process can be identified in 1965 and the Lorenz Curve shown in Figure 10 emphasises this feature.

With Kuwait's expansion, considerable social and economic segregation has developed. This phenomenon has been noted by Hill when he concludes that,

A traditional society, organised on the basis of kin grouping but without any pronounced

FIGURE 9

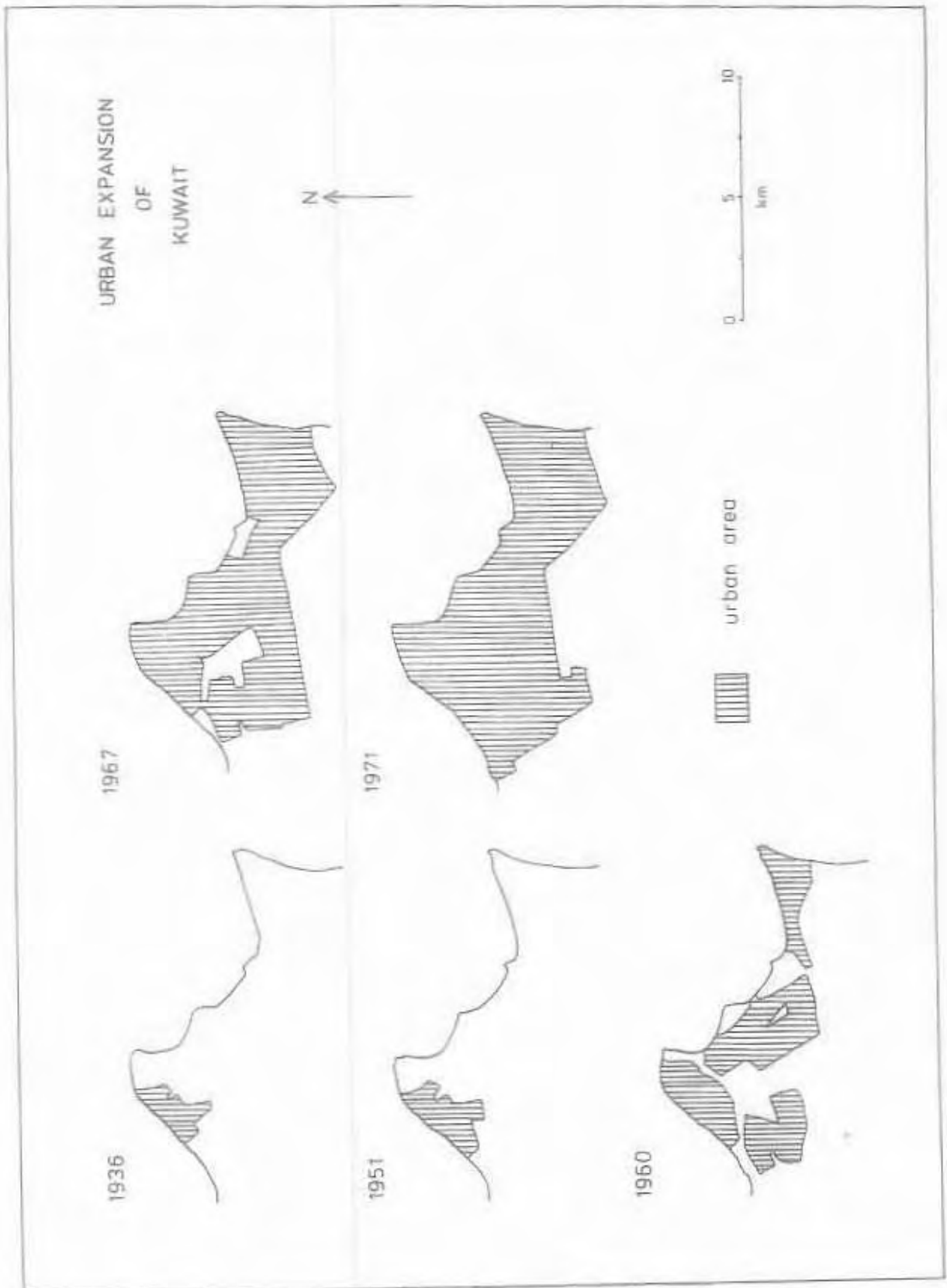
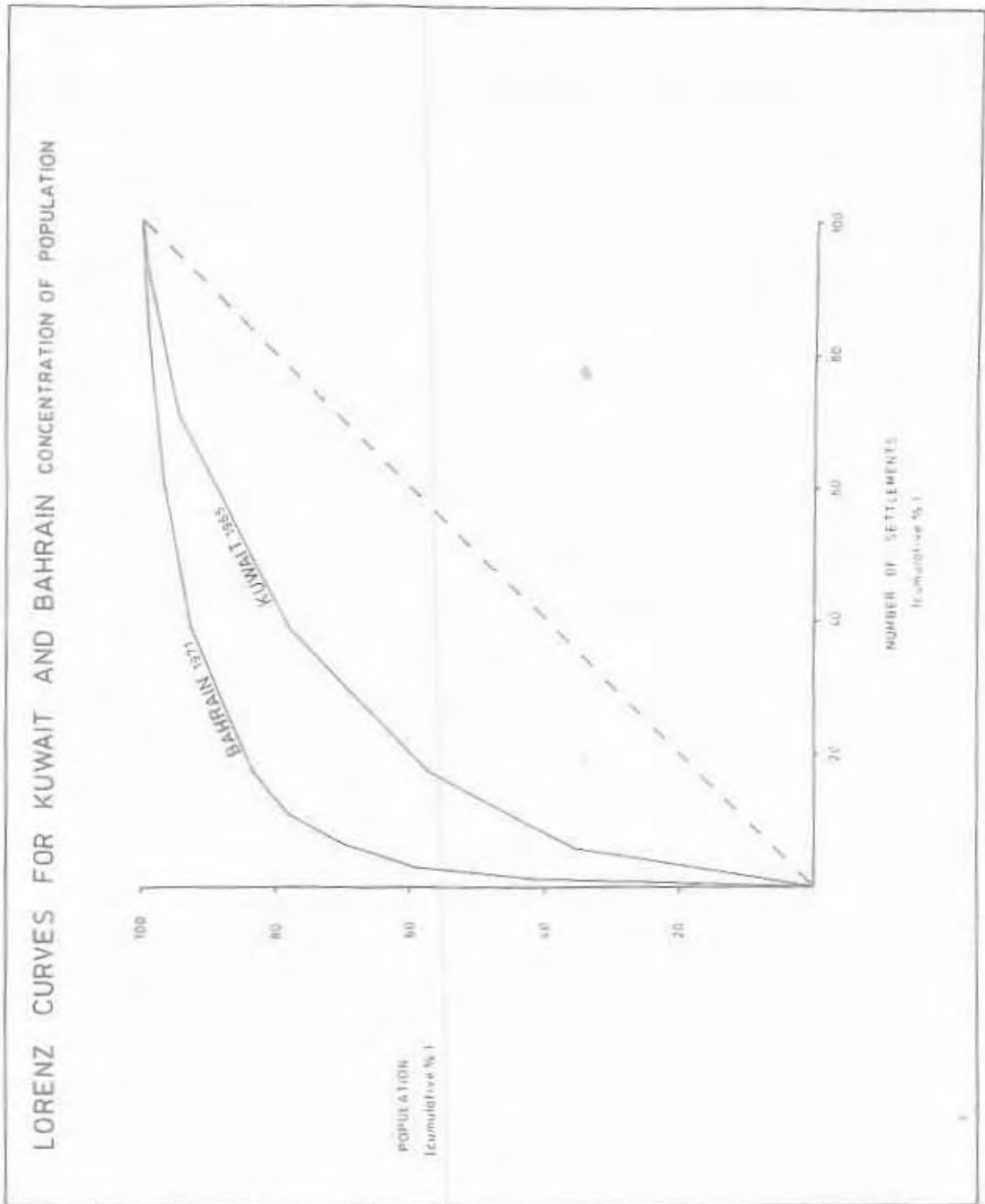


FIGURE 10



ranking of its sub-groups, has been transformed into a highly structured community based on the economic and political positions occupied by the Kuwaitis . . . the spatial effects of an explicit policy of discrimination on the basis of citizenship are wide ranging, for not only has the policy created a highly segregated city structured in a form quite novel in Arabia, but it has also brought about contrasts in the pattern of movement of the various national groups comprising Kuwait's total population.

Non-Kuwaitis are now the dominant group in the old city as they moved into the houses vacated by the Kuwaiti citizens who were able to buy property in the suburbs. The following figures show the number of Kuwaitis within the old city walls over the period 1957 to 1970; during this time the total population remained at between 80,000 and 100,000, indicating an increasing dominance by non-Kuwaitis:

1957	Kuwaitis in old city	59,579
1965	" "	29,269
1970	" "	21,452

(figures from 1957, 1965 and 1970 Censuses of Population, Kuwait).

Kuwaitis are dominant in the majority of the residential suburban blocks except for Hawalli and Salimiya districts, which are approximately 90 per cent non-Kuwaiti. The non-Kuwaitis tend to be concentrated around the major industrial complexes, and this is where the squatters are (see Chapter 4).

This study of Kuwait has shown how the physical expansion of the city is a reflection of the urbanisation process, and that oil has provided prosperity for the Kuwaitis and employment for non-Kuwaities, both of which have induced large-scale population movement to, and within, the city. Kuwait was a traditional city that became an economic core in the Arabian Peninsula and the analysis of segregation here has indicated that distinct core-periphery relationships also occur within the city. The

expansion and urbanisation of Kuwait as a result of oil is mirrored by other examples in the oil-rich states of the Arabian Peninsula.

Bahrain shows the same degree of population concentration as Kuwait (Figure 10). In addition the population growth has been rapid as Chapter 2 discussed.

Traditional urban centres in the Peninsula that have been directly affected by oil show extremely rapid spatial changes as the example of Kuwait has shown. For example, in Qatar:

Doha . . . a decade ago it was a sleepy fishing village; now it is a thriving town with wide and well lit streets crowded with traffic, modern air-conditioned shops, parks and gardens, and numerous public buildings and mosques. The speed and totality of this transformation exemplifies all that has happened in Doha in recent years. Areas of old houses have been swept away against payment of generous compensation and allocation of alternative sites in new peripheral suburbs.

Doha had an estimated population of 180,000 in 1976, a number which will increase with the building of New Doha to the north (ultimately to have a population of 60,000) on 800 ha of land reclaimed from the sea. Umm Said is an industrial town 40 km south of Doha centred on a port with an industrial area comprising a large steel and fertiliser works behind. The urban growth and transformation of other cities has been just as rapid. As previous Chapters mentioned, the growth in oil revenues in the small Emirates of the UAE was extremely rapid. Urban growth has been rapid too and reflects the other patterns already discussed in that the capital grows most by population increase connecting it with subsidiary centres. Certain centres of a specialised nature, such as Al-Ain oasis in Abu Dhabi which is important as an agricultural centre, grow because of their close relationships with the core area.

The Urban developments tend to be of a linear nature (Kuwait City - Shuaiba, Doha - Umm Said, the capital cities of the UAE

which are merging with one another), concentrating the urbanisation process in core areas. This is true of Oman, where recent expansions in Muscat and Muttrah are creating the beginnings of a unified metropolitan area. The problems of such urban concentration will be covered in the next chapter. Those urban centres growing as a result of the urbanization process in the Arabian Peninsula, but not directly attributable to oil, will now be discussed. Riyadh, Medina and Jeddah will be used as case examples for, although they are not directly connected with oil as are Kuwait, Doha, and Muscat, they have experienced very rapid change. This change has occurred as they are within the core axis of development in Saudi Arabia.

In the case of Riyadh,

The exploitation of the rich oil fields in the eastern region brought a boom in the economy of the country raising the standard of living and creating a strong impetus for urbanization for commercial exchanges, manufacturing activities and a need for more consumer goods. Significant growth was witnessed particularly in the capital city of Riyadh which, from 1950 onwards, experienced a tremendous increase in its population, reversing the existing patterns and bursting outside the, up to that time, fairly static limits of the City.

With the demolition of the old town wall in 1950, Riyadh entered a new phase of development, and certain factors created an expansionist environment. The construction of the Dammam-Riyadh railway in 1951 linked the city with the oil centres of the East and new highways to Jeddah and Dammam augmented this linkage. In 1953 the importance of the city was established with the transfer of the Ministries and other government services from Jeddah to Riyadh. The increasing centrality of Riyadh within Saudi Arabia was made possible by significant water discoveries that became especially important during the drought years of 1957-1964 as rural migrants were attracted to the city.

The importance of the migrant component of Riyadh's population was emphasised in the previous chapter. These high levels of migration have created extremely rapid rates of population growth, reaching 8.2 per cent per annum (Fig.11), resulting in the expansion of the city in spatial terms, this expansion has been of two basic types, either a coalition of surrounding villages or a natural expansion dictated by particular man-made locations. In the south and east of Riyadh are a number of annexed villages such as Meakal, Munfoha and Otaiga. This area is also characterised by various ruralised suburbs (e.g. Hillat Al-Otban and Hillat Al-Qusman) which are:

Similar to what Abu-Lughod found in Cairo, the housing in these ruralised districts is grouped mainly in small village-like clusters, and the buildings are primarily one or two stories in height and are made of bricks or mud-bricks. In fact, these districts resemble Arabian villages more than they resemble the modern section of Riyadh in their physical and socio-economic features.

In these areas the railway terminus and industrial sector of the city create additional attraction for migrants. Much of the contemporary urban growth is occurring in the north of the city following the axis of the Matar Road towards the airport (Fig.12). This axis of development owes its importance to the new government ministries and commercial establishments sited along the Matar Road and the establishment of the new royal palace at Nassiriyah. Associated with these areas are the high class residential districts of Murabaa and Malaz on the west and east side of the Matar Road.

Reference was made in Chapter 2 to the growing numbers of pilgrims to Saudi Arabia. This reflects a continuing concern by the Saudi government and their increasing allocation of public expenditure to improve pilgrim facilities (in the Development Plan period 1975-80 the government allocated £280m. per annum to the Hajj) and the changing character of the pilgrimage. In 1975 more than half the pilgrims came by air. Such a change is

FIGURE 11

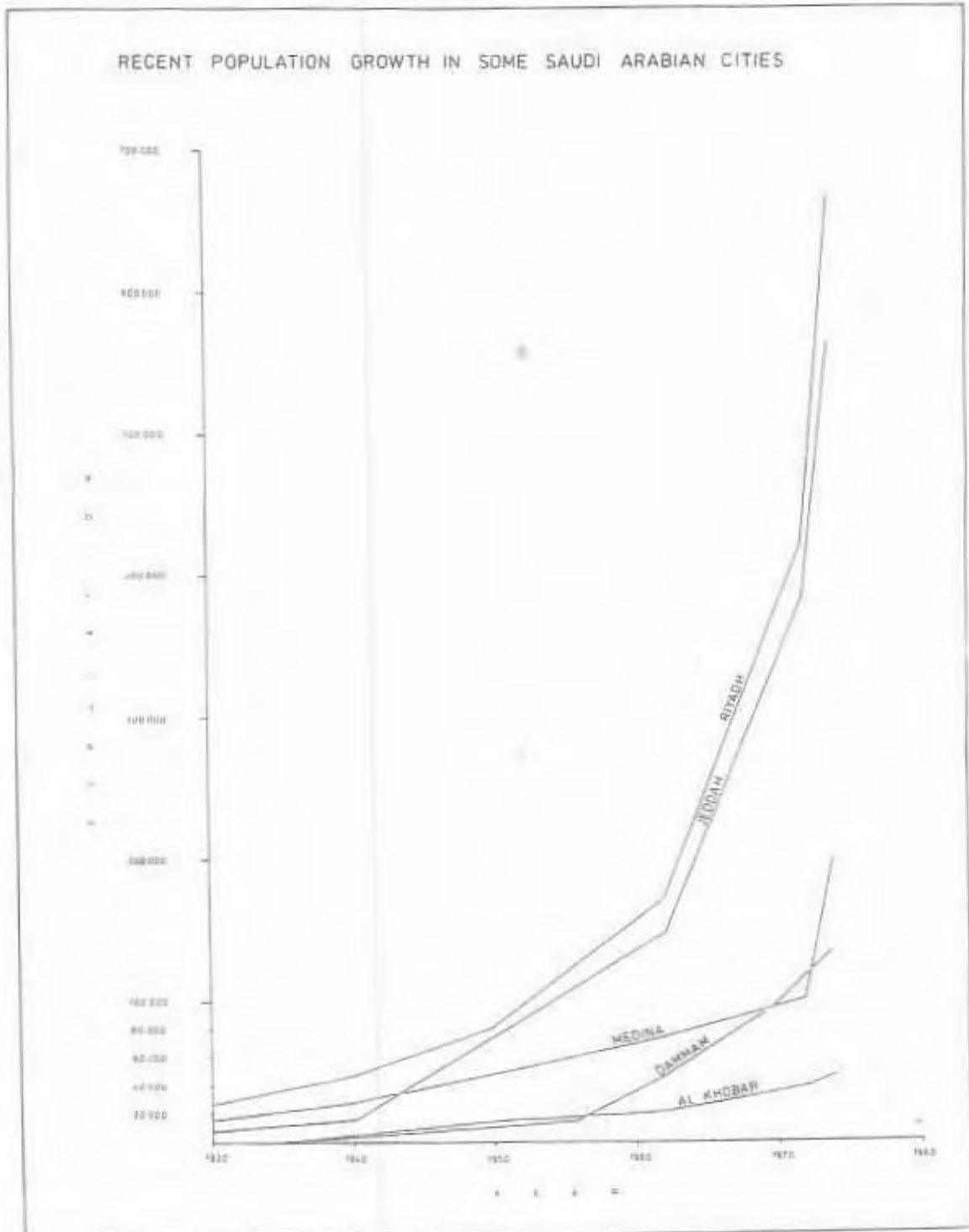
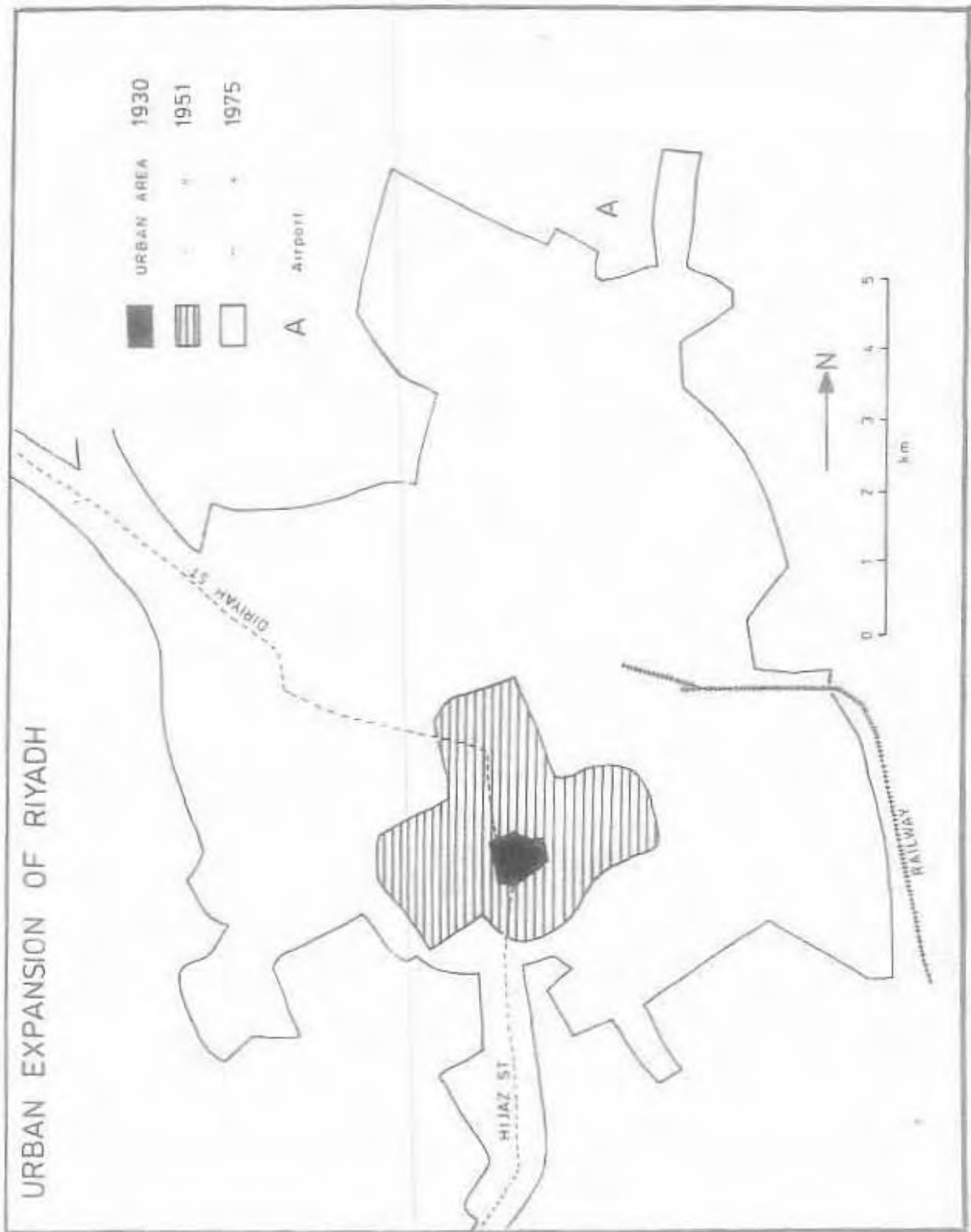


FIGURE 12



undoubtedly related to the rising oil revenues in the country. Increasing revenues also enabled Abdul Aziz to enlarge the central mosque in 1946; Schweizer¹⁰ argues that this decision signalled the modern development of Medina. In 1972, Medina received 958,040 pilgrims, which was equal to seven times the normal population of the city; as well as pilgrims, each Hajj season sees an influx of Saudis who came to be guides, taxi-drivers and street pedlars. The increase in Medina's population shown in Fig.11 is heavily dependent upon migration (Chapter 2). The Hajj, therefore, makes the city not only a spiritual focus but an economic one too; as such the city is closely integrated in the Saudi axis of development. The physical expansion of the city has been rapid and is closely associated with the urbanisation process - Figure 13 shows the growth of Medina up to 1972.

Jeddah, up to 1947 when the old city wall was destroyed, relied almost exclusively on the pilgrim traffic. The town expanded to the east, where the pilgrim hostels were located, and to the south east, which was the centre for Sudanese and other African pilgrims. In the years that followed 1947, the growth of Jeddah was rapid (Fig.11). This growth was associated with the expanding economy of Saudi Arabia, due to increasing oil revenues, for Jeddah became the main port on the Red Sea for imports. The increase in Jeddah's population is almost entirely a result of migration. Within the rapidly expanding Saudi economy, Jeddah became an important centre for commerce, imports and transport. Improvement in communications intensified this role as it became linked with the other growth regions of Saudi Arabia. The massive building boom that resulted in the physical expansion of the city (Fig.14) began in the 1950's. Suburban ribbon development occurred along the Mecca road to the east and the Medina road to the north. Industrial expansion occurred south of the city where the large migrant squatter areas of Sabeel and Gholeal are situated. This expansion was complemented by rapid development in the centre of Jeddah with the creation of many new roads and buildings. The airport has become a factor restricting developments in the north-east (Fig.14).

The expansion of these Saudi Arabian cities in terms of population and area has been contemporaneous with the creation of

FIGURE 13

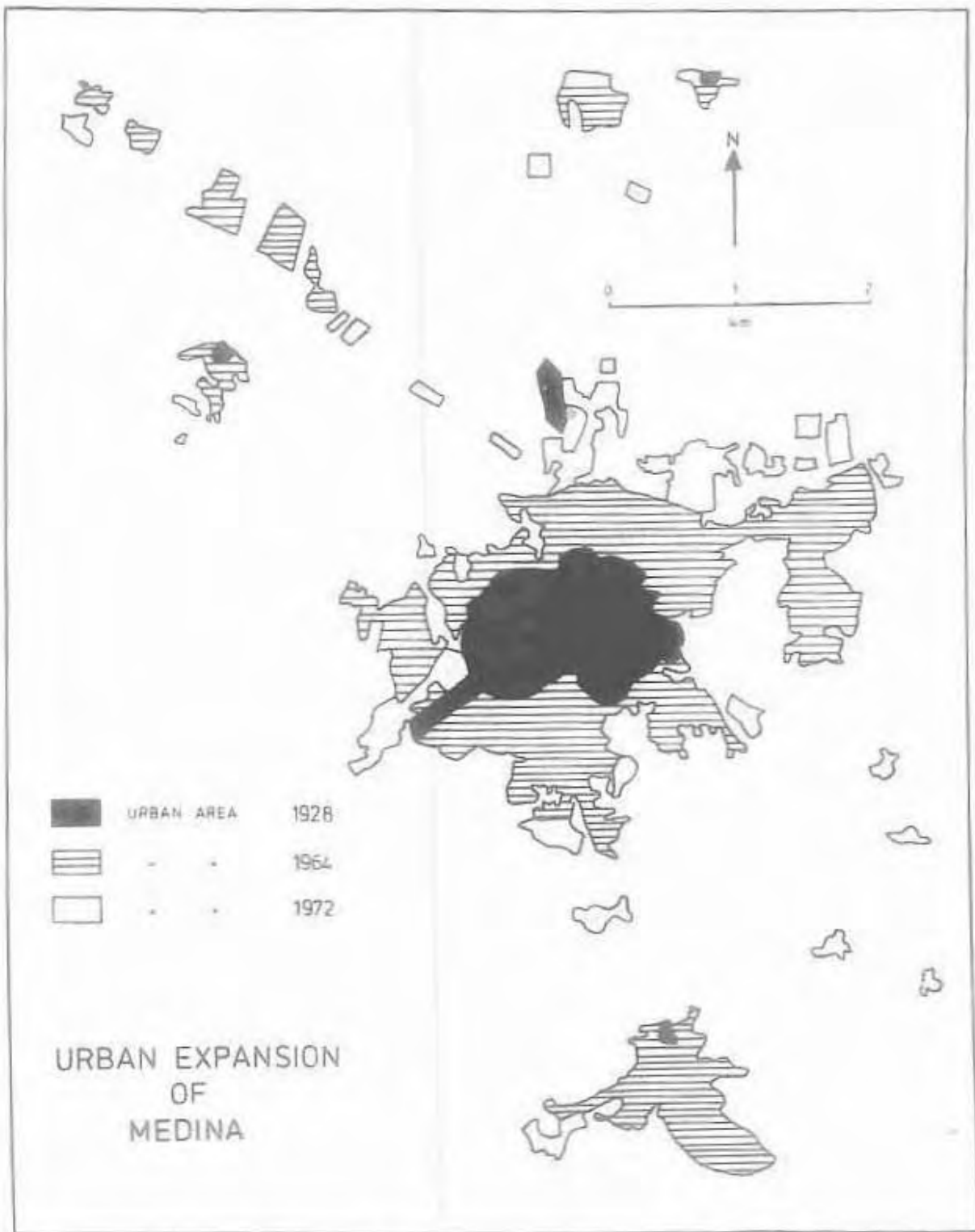
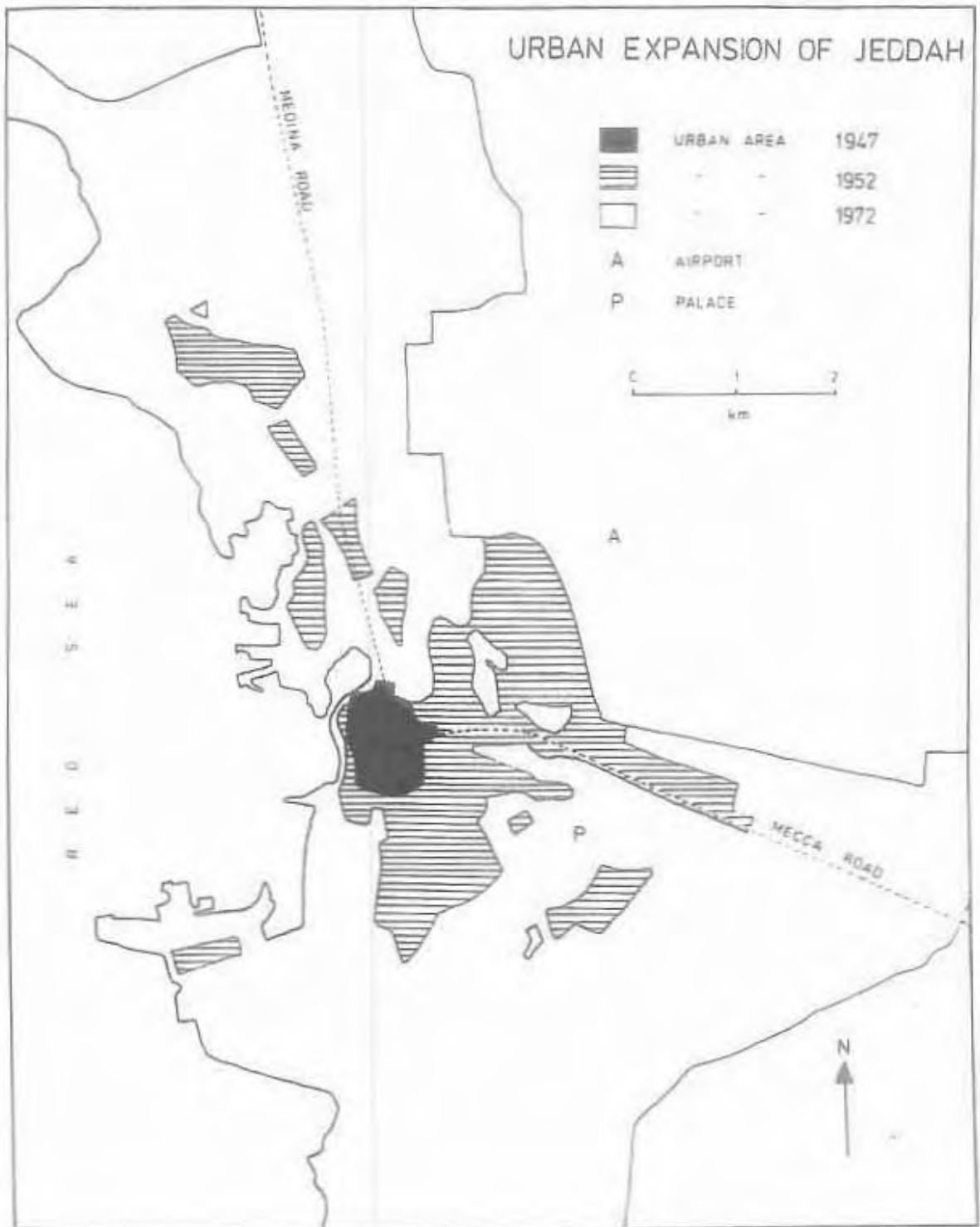


FIGURE 14



a 'development axis' of economic development across the country. As a result, urbanisation has been concentrated within these cities, leading to social and spatial segregation within them. This is analogous to the situation in Kuwait discussed above, as is the increasing urban concentration in Saudi Arabia (Fig.15). The higher urban populations in the East, West and Central provinces of Saudi Arabia compared with the other provinces in the country can be seen in Table 3.2.

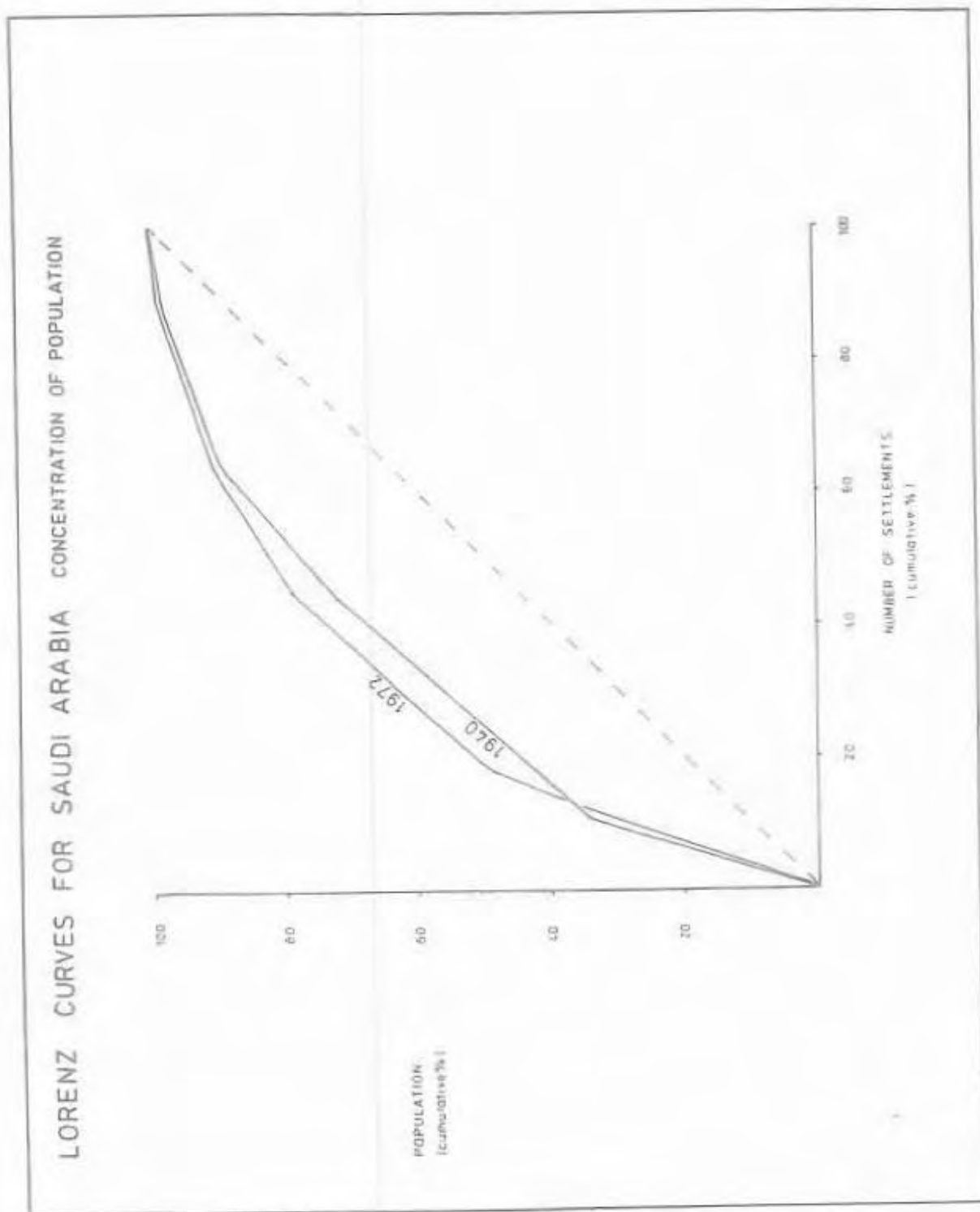
TABLE 3.2 SAUDI ARABIA : 1972 URBAN POPULATIONS

	Total Population	Urban Population	% Urban
Central Province	1 223 000	579 000	47
Western Province	1 370 000	910 000	66
Eastern Province	552 000	340 000	62
Northern Province	509 000	136 000	27
Southern Province	1 346 000	135 000	10
Total	5 000 000	2 100 000	100

Source: Schweizer, 1976

Another spatial manifestation of urbanisation in the Arabian Peninsula has been the creation of new urban settlements. There are two principal kinds: settlements created for oil industry activities and those built to alleviate congestion in rapidly growing capital areas. Examples of the former types can be found in the Eastern Province of Saudi Arabia where, in 1934, Hofuf was the only large town, Dammam was a small fishing village and Al-Khobar did not exist. The rapid growth of these two settlements is illustrated in Fig.11. Owing to the location of the oil and the need for coastal outlets for oil exports, the new settlements expanded in areas distinct from existing communities. Dammam expanded in 1950/51 with the construction of a port and railway extension to Riyadh, and in 1953 the removal of the government's Provincial Office from Hofuf to Dammam indicated its importance in the Eastern Province. In 1947 a grid-iron plan for Dammam was

FIGURE 15



initiated by the government and by 1952,

... the village that had occupied less than 170 acres five years previously extended over an area of 525 acres, not including the 400 acres that was subdivided. The population was 25,000.¹¹

The grid-iron layout was similar in Al-Khobar's development. These two cities and various other new towns in the area (e.g. Rahimah Community) were essentially Aramco company towns related to employment opportunities that were mushrooming in the region because of oil. The importance of migrants in the communities discussed previously is often expressed spatially. In Al-Khobar, for instance, Thuqbah is a suburb consisting of squatters and Rak'ah a community of 600 nomads.

The growth in the economy creating the impetus for urbanisation was the principal *raison d'être* of these settlements,

The new settlements founded since the discovery of oil in the region were created to fulfil the demand for residential areas near the industrial zone and their location was not governed by the availability of water or any other single natural factor. Dammam, Al-Khobar, Dhahran, Abqaiq, Ras Tannura, Ruhaimah and Al-Udhiyia are all examples of such settlements.¹²

Employment generation because of economic growth was the principal reason for the development of Shuaiba in Kuwait (see above) and in Abu Dhabi, Jebel Dhanna is the site for a new petrochemical complex that will involve the creation of a new town; also in Abu Dhabi, Ruweis is another planned industrial town that involves \$2,000m development investment and will accommodate between 40,000 and 80,000 inhabitants. The creation of new ports in the Arabian Peninsula to meet increasing import and export demand was mentioned in Chapter Two - they include

Jebel Ali in Dubai, Khor Fukkan in Sharjah and Jubail in Saudi Arabia. Garden City is a new luxury residential town in Sharjah.

Another category of new town is that designed to alleviate overcrowding in the capital area. Isa Town, in Bahrain, was created in 1964 to aid decentralisation of population from Manama. The population at present is 15,000 but 35,000 is the figure planned for, although this is scarcely large enough to help stop overcrowding in the capital region. In Oman, the physically-restricted capital of Muscat necessitated expansion into the Ruwi Valley. It is in this Greater Muttrah region that urbanisation is focussed and the area will become the dynamic core of the capital region. Madinet Qaboos is part of the 'Greater Muttrah Linear City' and provides high class accommodation for expatriates. The total population of the capital region is estimated at over 60,000 people.

Many of the urban developments discussed above were planned by Western-trained planners and have given rise to a number of reactions. MacFarlane (one of the first planners in the Gulf) thought that planning in Kuwait

... is a town planner's dream. To drive along a splendid dual carriageway-road, which only a year before was a line on paper, is an experience given to few in this country ... Blessed by ample money, space unlimited and ambitious people and a wise ruler, Kuwait will be a model to the Middle East - and to other countries also - of how wealth can be used to meet the needs of common man.¹³

A criticism of the Western type of planning carried out in Kuwait and elsewhere in the Gulf was made by Shiber¹⁴, who called it 'bastardised architecture', as he believed most of the planning had little feel for Kuwaiti society and culture. Jamal¹⁵ criticises the plans for Kuwait as he claims they did not regard physical planning as a continuous process but rather as a once-and-for-all project. Jamal also attacks the Buchanan team which recruited planners with little working experience in Middle Eastern urban environments.

The polarisation of economic wealth and power in the core areas of the Arabian Peninsula has created population movements from peripheral areas to create urbanisation. This process is spatially manifested by expanding cities in the core area in which, although different patterns are identifiable, similar processes operate. A common phenomenon visible in these cities is the high number of prestigious and ornate buildings (both private and public) as the following examples show:

Development of Doha itself is impressive. The town is a rapidly planned exercise with wide tree-lined boulevards . . . Landmarks include the Great Mosque . . . the national museum. The waterfront is a clean, wide-laned corniche on which are a number of Government buildings and, from which, on a gentle rise, emerges the incredible Emiri Palace.¹⁶

To the west of Muscat, there is a growing hinterland of futuristic architecture that almost defiantly discards the building styles of the past . . . there is the dart-shaped beach-house, like a space-age plane, built for the Sultan's uncle.¹⁷

Similar urban fabrics could be found in any other rapidly expanding Arabian Peninsula city (see Schweizer 1976). Such a phenomenon confirms:

. . . the city functions as a locus for the disposing of surplus product. Monumental architecture, lavish and conspicuous consumption, and need creation in contemporary urban society, are all different manifestations of this same phenomenon.¹⁸

So far this study has concentrated on the origins, processes and patterns of urbanisation in the Arabian Peninsula; the next Chapter will consider some of the problems that have been created.

NOTES

1. Shiber, 1968
2. Stephens, 1976
3. Shiber, 1964
" 1968
4. Macfarlane, 1954
5. Minopiro, Spencely and Macfarlane, 1952
6. Hill, 1973, 133, 139
7. Gerard, 1972, 154
8. Doxiadis Associates, 1968, xxxix
9. Malik, 1973
10. Schweizer, 1976
11. Shiber, 1964
12. Al-Shuaiby, 1976
13. Macfarlane, 1954
14. Shiber, 1964, 1968
15. Jamal, 1973
16. Davis, 1976
17. Ashworth, 1976
18. Harvey, 1976

CHAPTER FOUR:

Problems of Urbanisation

Many Third World countries in recent decades have experienced high rates of urbanisation which have resulted in a variety of problems. The main problems identified have been either human (poverty, housing deprivation, unemployment) or physical (overcrowding, inadequate services such as water and sewerage). The 1976 Habitat Conference on Human Settlements held at Vancouver was an international response to the problems resulting from the rapid urbanisation of Third World populations, and Ward¹ summarises many of these problems. Geographers have for some time been conscious of the problems with either a regional or systematic bias. For example, Dwyer² has reviewed the problems of urbanisation in Hong Kong and south-east Asia, Pullen³ in Nigeria and Abu-Lughod⁴ for the Middle East. Housing, as a systematic problem, has been covered by Drakakis-Smith and Fisher⁵ for Turkey, and in a comprehensive way by Dwyer⁶ for the entire Third World.

Regarding problems of urbanisation it has been said that:

It is reasonable to expect, therefore, that, if other developing countries attain the same pace of economic growth as that experienced in Hong Kong, their problems of urbanisation, far from becoming more amenable to solution, will be compounded. . .

This comment can be verified as the economic growth rates experienced by the oil-rich states of the Arabian Peninsula are faster than Hong Kong's growth rate, and more problems resulting from urbanisation are tending to appear. The increasing numbers of vehicles in the countries of the Arabian Peninsula are creating traffic congestion despite road widening; motor accidents are now a major cause of death in the urban centres.

The shortage of raw materials for the growing urban centres is presenting a serious problem. In Kuwait, the cost of building materials doubled from spring 1974 to mid-1976 a result of the

building boom and congestion of the ports. The shortage of land and scarcity of raw materials have created highly-inflated land prices in the city centres, (the price of land in Kuwait City centre fetches over £500 per metre² and it was reported in MEED (1980) that a 3-bedroomed villa in Saudi Arabia would cost \$35,000 a year to rent. General inflation in all the countries is high; in Saudi Arabia it reached between 30 and 40 per cent. The growing number of people concentrated in urban areas have created a rising demand for food - this problem is exacerbated by the abandonment of farms by rural-urban migrants. A result of this has been to intensify agricultural production.⁹ The implication of growing urbanisation and industrialisation in creating increased demands for manpower has been discussed and the converse of this is the extreme under-employment of many nationals in the urban populations.¹⁰ These are a selection of the numerous problems resulting from urbanisation in the Arabian Peninsula, some of which will be considered in a wider context in the following chapter. The rest of this chapter will concentrate on two of the most pressing problems of social provision that have arisen as a result of rapid urbanisation - water and housing availability.

Water is a vital commodity for human existence and, under Islamic law, it is held as a common resource.¹¹ The provision of water in the Arabian Peninsula has always been a considerable problem owing to the scarcity of the resources; the scarcity is a result of low rainfall which is highly variable, and very high temperatures which cause evaporation rates to be correspondingly high. Table 4.1 shows the total water resources available, including current and projected needs.

The growing demand for water in Kuwait is shown in Figure 16. Commenting on this demand, Buchanan and Co. stated:

In a country where national water supplies are so meagre, it is conceivable that the problems of satisfying a rapidly rising demand could limit the rate of future urban growth more than any other single constraint.¹²

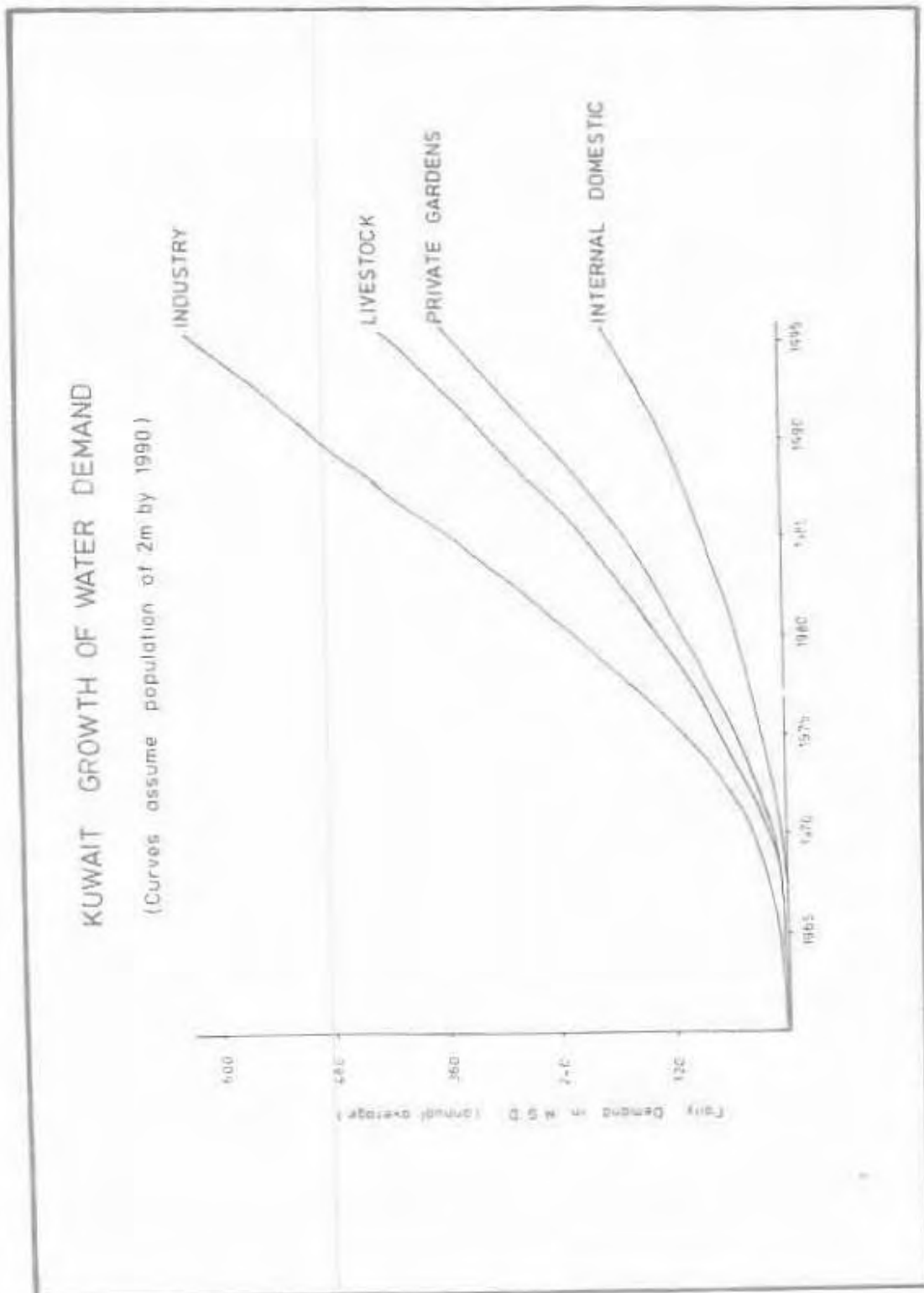
Such a situation is common to the other oil-rich states of the

TABLE 4.1: WATER RESOURCES AND DEMAND

	WATER RESOURCE POTENTIAL (million cubic metres)			WATER DEMAND (million cubic metres)			FUTURE WATER DEMAND (million cubic metres)			Year
	Surface	Ground	Desalinated	Agriculture	Domestic	Industry	Agriculture	Domestic	Industry	
Bahrain	-	199	8.3	166	20	13	126	41	15	
Kuwait	-	130	102.9	130	75	8	1 150	1 730	50	1995
Oman	10	665	2.0	420	10.0 6.0		n.a.	n.a.	n.a.	
Qatar	-	50	10.4	44			55		20	2000
Saudi Arabia	2 200	1 723	17.8	13 500	830	150	32 400	250	1 048	1990
UAE	160-270	270	2.0	331	31.3 25.0		408		42 n.a.	
Yemen PDR	1 500	350	n.a.	1 900						
Yemen AR	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	

Source: UN Economic Commission for Western Asia quoted in MEED
Water Special Report, 29 April 1977, p.14.

FIGURE 16



Arabian Peninsula, and has come about owing to increased demands from growing populations, increasing per capita demands as the standard of living rose, and increasing demands from industry. In Kuwait as the population expanded rapidly in the 1950's, water capacity (desalinated) rose accordingly, from 27,280m³/day in 1965 to 282,000m³/day in 1975. The rising standard of living in the country has increased personal consumption of water from 75 litres/day/person in 1953 to 225 litres/day/person. Bahrain has a similarly high per capita consumption of 270 litres/day/person, and Saudi Arabia's water demand is increasing at 10 per cent p.a. The water consumption of Sharjah increased by 80 per cent from 400,000 gall/day in 1967 to 735,000 gall/day in 1968 as a result of oil finds in the UAE. The increased consumption rates for Bahrain, Abu Dhabi and Oman are shown in Table 4.2.

TABLE 4.2: WATER CONSUMPTION

	Bahrain	Abu Dhabi	Oman
1968	3.9 m.g.d.	20 m.g.d.	
1969	4.2 "	20 "	
1970	4.6 "	3.8 "	14 m.g.y.
1971	4.7 "	4.4 "	85 "
1972	5.1 "	5.1 "	171 "
1973	5.5 "	6.0 "	219 "

Source: Water Supply Directorate, Statistical Abstract 1972, 1973, 1974, Bahrain; Department of Water and Electricity, Abu Dhabi, 1973; Ministry of Development, Statistical Yearbook, Second Issue, 1393 A.H. 1973 A.D. Oman

These demands for water provision are likely to increase rapidly in the future as populations will keep rising and will be increasingly concentrated in urban areas, standards of living will increase and industrial expansion is inevitable. For example, in Saudi Arabia urban water demands are increasing by approximately 10 per cent p.a., and public supplies are expected to increase by about three times for the six largest cities of

Riyadh, Jeddah, Mecca, Medina, Taif and Dammam. These six cities showed an increase in their demand for water from 211,000 cu. metres/day to more than 545,000 cu. metres/day, or an increase of 150 per cent over the period 1975 to 1980. In addition, the main industrial use for water (oil-well injection) will increase from 1,100,000 m³/day to 2,400,000 m³/day in the same period. The new industrial complexes at Yanbu and Jubail required an additional 100,000 m³/day in the period 1975-1980. In Kuwait, the Ministry of Electricity and Water estimated demand would increase by 20 per cent in 1976 and there were plans for a 100m. gall capacity by 1980. The projected water needs for urban and industrial uses for individual countries in the Arabian Peninsula can be seen by referring back to Table 4.1. The estimated increases in water demand are shown for Saudi Arabia in Table 4.3.

TABLE 4.3: SAUDI ARABIA: PRESENT AND FUTURE WATER DEMANDS
(000 m³/d)

	Present Supply	Forecast Demand
	1974	1980
Riyadh	57	163
Jeddah	57	142
Mecca	19	74
Taif	6	41
Medina	22	35
Dammam*	50	90
Sub-total	211	545
Jubail Industrial Complex	-	76
Yanbu	-	19
Sub-total	-	95
Oil-well injection	1 100	2 400
Agricultural irrigation	5 370	7 060
TOTAL	6 681	10 100

* +Dhahran, Al-Khobar, Satwa and Qatif

Source: Metra Consulting, Saudi Arabia : Business Opportunities
Financial Times 1975

The deficit between a low supply of water relative to the increasing demands has been met by the creation of new supplies of water (i.e. by new finds or desalination) or conservation of existing supplies and different allocations of water. The former method has so far been the principal means of reducing the gap between supply and demand of water, as the increasing oil revenues made it possible to invest in expensive desalination plants. Kuwait was the first country in the Arabian Peninsula to install a sea-water desalination plant; in 1951 this produced 80,000 galls per day. Production of potable water for Kuwait City in 1972 was 27m galls per day, and 90 per cent of the state's daily consumption of 60m galls is desalinated. The absence of large quantities of sweet well water in Kuwait is the reason for this heavy reliance on desalinated water; a similar situation exists in Qatar, where natural well water can only supply one third of the daily water used for private consumption and industry. The first desalination unit was located near the capital at Ras Abu Aboud complex. Together with well water production (approx. 3.2m galls), that in 1977 amounted to 11m galls per day; it was enough to meet the present demands of private consumption and industry of 10,500,000 galls per day. However, in view of the increasing population and demands of industry, a planned water production in excess of 39m galls per day has been aimed for and this will involve improving the original plants and creating a new complex at Ras Abu Fantas. Similar increases in demand have forced the UAE to rely on desalinated water for 90 per cent of its needs. 70 per cent of Doha's residents still obtain water from tankers. The city needs 40m galls/day - the Fantas desalination plant will give 32m galls/day.

The largest producer of desalinated water in the Arabian Peninsula is Saudi Arabia, which in 1975 produced 50,000 m³ a day. In the 1975-1980 Development Plan period, SR 34bn. was devoted to water and desalination projects, bringing the total fresh water production from desalinated plants to more than 400,000 m³ per day. This was achieved by an expansion of the Jeddah plant by 38,000 m³ per day in 1977 and by an additional 76,000 m³ per day by the end of the Development Plan period. The Al-Khobar plant expanded by 190,000 m³ per day and the Khafji

plant by 19,000 m³ per day. A major new plant will be constructed at Yanbu with a water production capacity of 19,000 m³ per day. By 1982 Saudi Arabia should have 412m galls of desalinated drinking water per day. The world's largest desalination plant is at Jubail and, during the Plan period 1980-85, eighteen desalination plants will be completed, adding 1.4m m³/day. In the course of 1981 the desalination plant at Jubail produced 35m galls/day - this reflects the increased demand of a city that was expected to grow from a population of 27,000 in 1978 to 180,000 by the end of 1981.

These examples illustrate that the principal increases in demands for water are occurring in the major urban centres, and it is therefore in these centres that the major desalination plants are situated. Prospecting for groundwater sources is being carried out in the Arabian Peninsula but, as Table 4.1 made clear, the potential amounts are minimal. Saudi Arabia and Oman probably have the largest quantities available but more pumping will decrease the finite supply. In Oman, the growing urban concentration in the Muscat-Mutrah region caused a rapid expansion in well-drilling which severely lowered the water table and increased salinity. This was one of the main reasons why a decision was made to construct a desalination plant which now produces 6m galls per day.¹³ Use of both desalinated water and groundwater means using a finite resource. The groundwater available is a finite amount, and higher demands brought about by population growth and increasing per capita demands will eventually deplete this resource, while desalinated water requires high levels of energy input, besides which the working life of desalination plants is approximately 15 to 20 years and replacement costs are high. The countries of the Arabian Peninsula will only be able to afford desalinated water as long as oil revenues are high, which will not be forever. Therefore, the increasing growth rates of population, standards of living, and industry that are inevitably occurring in the major urban centres will have limits imposed on them by the amount of water available. There are two principal responses open to the countries of the Arabian Peninsula.

The first is to conserve available supplies. This will be difficult in countries where, although per capita incomes are as

high or higher than the USA, the amount of water consumed per capita is far less. However, advances in industrial efficiency may reduce the amount of water needed by this sector, as may water recycling. A suggestion by Roberts¹⁴ is the use of traditional storm-water reservoirs and the introduction of the dry toilet which uses only one-third of the water of a conventional system at 50 per cent of the cost.

In addition to a conservation policy, a reconsideration of water allocations is needed. In all of the countries in the Arabian Peninsula, agriculture consumes three-quarters of all available water (Table 4.1), and whether the societies in the region can, in the long run, support high urban populations as well as the intensive agricultural schemes in operation, is an important question. An FAO mission to the Middle East¹⁵ has suggested that countries in the arid regions reconsider pastoral nomadism in the agricultural sector, one of the reasons being the reduced water required. It is vital then, if urban areas are to increase, that national water allocations be reviewed. More stringent control over water allocation in urban areas is also clearly needed, for instance: restricting water available for private gardens and other cosmetic uses; the introduction of a water metering system in all countries of the Arabian Peninsula would be necessary in all policies requiring conservation and changes of allocation.

An additional problem is the bureaucratic system dealing with water provision; Saudi Arabia has, for example, three major ministries directly concerned with water (Ministry of Agriculture and Water; Municipalities Department; Water Desalination Department). Clearly, the arid countries of the Peninsula have much to learn from the concept of a national water policy that Israel has adopted¹⁶ if urban areas are to maintain their current growth rates. Saudi Arabia is to develop its first national water plan in the plan period 1980-85.

Rapid rates of urbanisation in the Arabian Peninsula have also created a serious housing problem. The rapid population growth within the urban areas has tended to outpace the building of houses; Bahrain will be used as an example here. A relatively high proportion of her population has been classified as urban since 1941 because of oil discoveries in the 1930's and is now 77

per cent urban. Population growth in the whole island has been rapid but, as Table 4.4, shows the increase in the number of homes has not been as fast, and so there has been a deficit in the housing stock.

TABLE 4.4: BAHRAIN: POPULATION AND HOUSING 1941-1971

	Population	% increase p.a.	Houses	%increase p.a.
1941	89 970	-	14 382	-
1950	109 650	2.35	16 274	1.40
1959	143 135	3.00	22 630	3.70
1965	182 203	4.10	26 300	2.50
1971	216 078	2.90	31 045	2.80
Average		3.00		2.60

Source: Ministry of Housing (1976) A Dynamic Approach to a National Housing Problem, State of Bahrain

Although the proportion of the population classified as urban in Bahrain was high in 1941, the absolute growth has been significant: for example Manama's population increased by 27,059 or 44 per cent over the period 1959-71. The population growth and increasing number of houses for Manama and Muharraq since 1951 can be seen by referring to Table 4.5 showing the increasing housing shortage in the capital area. The other oil states of the Arabian Peninsula show a trend similar to Bahrain, and in many instances the housing deficit is greater, as population increases are more rapid.

When oil revenues began to accrue to the producer states much of the private and public expenditure went on house-building for nationals - this was particularly true for Kuwait. Gradually, far less was spent on housing but more on public buildings, social infrastructure and industries, so that housing construction lagged even further behind population growth. Table 4.6 illustrates this trend in Kuwait. In most of the countries in the Arabian Peninsula, housing has increased at a slower rate than population, with the result that these countries are experiencing an acute housing problem.

TABLE 4.5: POPULATION AND HOUSES: MANAMA
AND MUHARRAQ 1941-1971

MANAMA				
	Population	% increase	Houses	% increase
1941	27 835	7.3% p.a.	4 649	6.7% p.a.
1971	88 785		13 965	
MUHARRAQ				
	Population	% increase	Houses	% increase
1941	21 439	2.5% p.a.	3 317	2.4% p.a.
1971	37 732		5 670	

Source: Finance Department (1969)

Fourth Population Census of Bahrain - A Brief Analytical
and Comparative Study

Statistical Bureau Population Census of Bahrain 1971

TABLE 4.6: KUWAIT: POPULATION AND HOUSING 1957-71

	Population	% increase p.a.	Houses	% increase p.a.
1941	200 000	17%	33 740	14%
1965	467 000		72 464	
1971	739 000	10%	94 000	5%

Source: Author's calculations based on figures given in Metra
Consulting (1976) Business Opportunities in the Gulf,
Financial Times

This problem is expressed in a number of ways, the most obvious being an absolute shortage in housing units. According to the Housing Minister, Kuwait will need to build 136,000 homes before 2000 AD; the 1980-85 Plan will build 28,000 homes. The government of Bahrain estimated in 1976 that 15,000 units were needed, with an approximate annual increase in housing stock of 1,000 houses thereafter.¹⁷ About 1,000 houses are completed each year in Qatar which will have to be increased by 10 per cent p.a. to keep up with population increases; it is in the urban core areas that demand is greatest as over the next twenty years it has been estimated that of the 17,000 new houses needed 15,000 will be in Doha. Demand for houses far exceeded supply in Saudi Arabia where, between 1970 and 1975, there was an estimated demand for an additional 154,000 housing units, while only half that number (75,000) were built. The housing shortages are geographically concentrated in the core urban areas:

Numerically, the greatest shortages are in the Eastern Region, as a result of vigorous industrial growth, and in the West, owing to equally vigorous commercial expansion. Riyadh, however, in the Central Region, as the rapidly growing capital and centre of government is suffering an equally severe shortage, in relative terms.¹⁸

In the period 1975-1980, Saudi Arabia's housing need will be approximately 329,000 units including the following:

Central Region	:	54 000 in Riyadh
Eastern Region	:	125 000 plus in the coastal zone cities resulting from government-induced industrial growth
Northern Region	:	5 200 units
Western Region	:	129 000 plus units
South West Region:		9 000 units

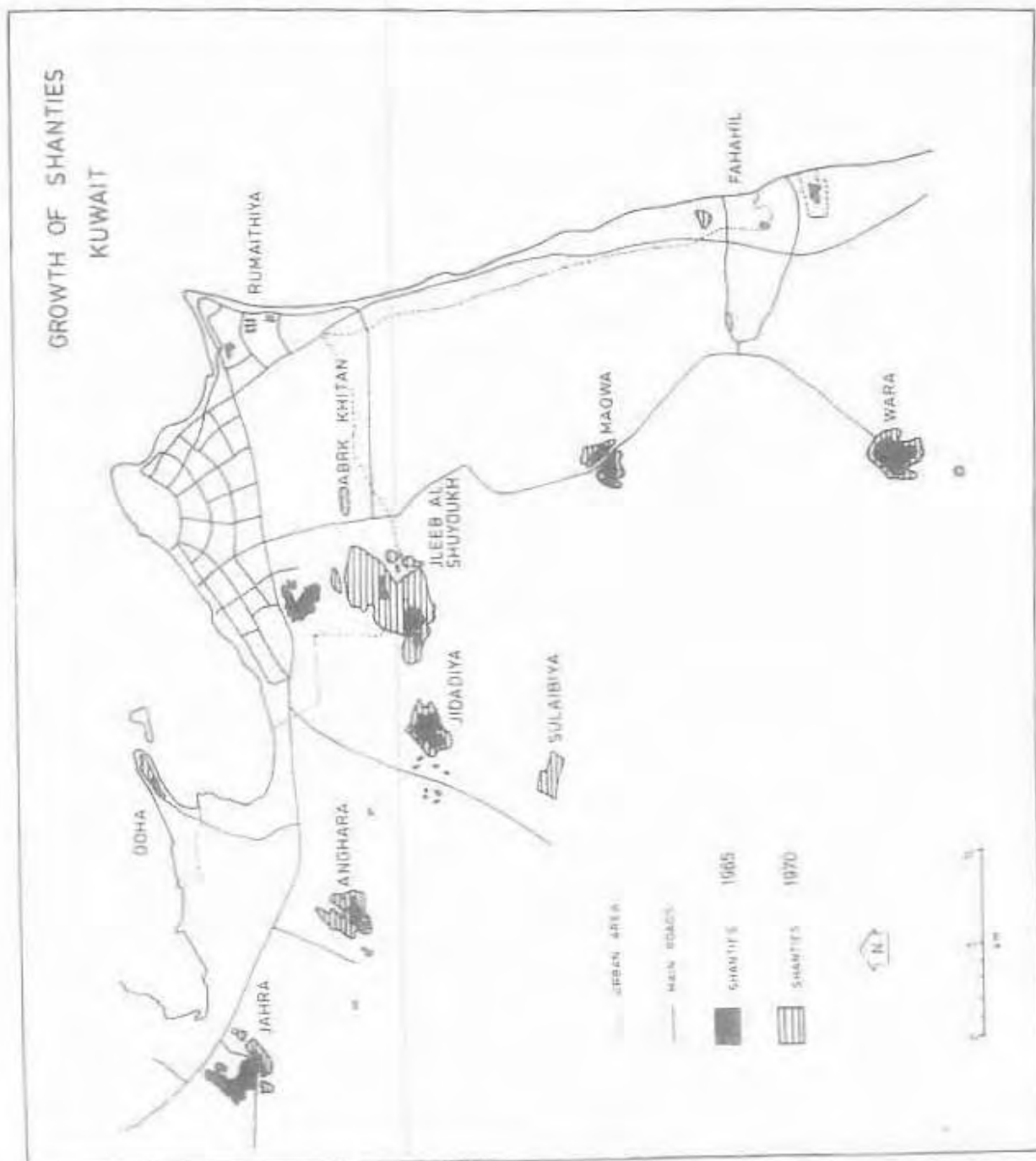
The importance of the central development axis in the country is evident from these figures.

The shortage in quantity of houses is complemented by a shortage of quality. In Saudi Arabia, of the 1,100,000 dwelling units, 117,000 can be classified as substandard or improvised.¹⁹ In Bahrain, 72 per cent²⁰ of the existing housing stock is in need of physical improvement and many of the new houses built before 1955 in Kuwait are having to be replaced. Poor-quality housing is often a result of overcrowding : the 1965 Census of Kuwait revealed that eight per cent of households (46,000 people) had accommodation with an average of less than a quarter of a room per person, and 41 per cent of households (172,000 people) had less than half a room per person. The Census also showed 53,000 men (virtually all non-Kuwaiti) to be living in group or hostel accommodation, often of a poor standard. The 1975 average occupancy ratio in Bahrain was 2.6 persons per room but ten per cent²¹ of the population were at densities above 5.0 persons per room.

A visual expression of the inadequacy of the housing supply in the oil-rich countries of the Arabian Peninsula is the development of spontaneous settlements. The importance of these in the Middle East and rest of the Third World has been alluded to previously and, whether a positive or negative attitude is taken, the inhabitants of these settlements ("squatters") are where they are because there is a shortage in the supply of homes they require. Many of the immigrant workers occupied the traditional houses in the old city centres that were vacated with the migration of nationals to detached villas in the suburbs but, as the supply of these was limited, many established themselves in spontaneous settlements.

The growth of spontaneous settlements in Kuwait is represented in Fig.17; the number of 'shanties' in 1965 being 11,649, which grew in 1970 to 20,400. In 1970, 113,000 people inhabited shanty accommodation and 81 per cent of these were Kuwaitis; the majority of the inhabitants are Bedouin who have either full-time or seasonal jobs with the government or oil industry. The shanty dwellings (which represent about 25 per cent of all dwellings) are geographically located near to employment opportunities and the provision of services such as hospitals; for example Maqwa and Wara shanty areas serve the industrial centre of Ahmadi. While the majority of shanties are

FIGURE 17



situated close to employment opportunities, Doha is an exception, being a government-planned shanty area. In 1970, three development projects were started by the government to improve accommodation for squatters at Mina Abdulla, Jahra and Ardiya. But, as the annual rate of inflow to shanty areas is estimated at 17,000 p.a., for every two people who leave to live in government-provided homes, five take their place.

The problem of urban expansion by the growth of spontaneous settlements in Kuwait has been excellently surveyed by Jamal²² who claims that differences exist between old and new squatter areas; the latter are usually temporary settlements associated with construction sites and are the most poverty stricken. Jamal criticises the government schemes for rehousing squatters and bedouins as they do not take into account the causes of the settlements in the first instance. For example, in 1979 the authorities bulldozed a bedouin shanty town and provided some new homes at a rent of £72/month. Furthermore, he maintains that a government housing programme cannot be successful without the participation of all the people.

The same problem is also evident in Bahrain. The number of barastis (the principle type of housing in spontaneous settlements in Bahrain) is given in Table 4.7. The higher proportion of Barastis in the capital area is a result of the urbanisation process being concentrated in this core region. In Qatar poor housing occurs, as MEED reported in April 1977, where

... the most casual visitor cannot fail to notice the sharp contrasts between areas of new construction and areas of poor housing, where not all the benefits of social advance are obvious.

TABLE 4.7: BAHRAIN: NUMBER OF BARASTIS

	Barastis	% total houses	% Barastis in Manama
1959	3976	18.1	23.2
1965	2770	10.5	9.5
1971	1524	4.9	5.0

Source: 1959, 1965, 1971 Census of Bahrain, Manama

The development of spontaneous settlements is a growing problem in Saudi Arabia where (apart from the 'pilgrim cities' on the edge of Mecca and Medina which are special temporary spontaneous settlements) as much as ten to fifteen per cent of dwellings in the main towns are of this category. The shanties are

... typically of ironed-out drums, softwood slats, or palm branches according to availability. They are often quite neatly and sturdily built, and appear to form the basis of a substantial local industry.

Spontaneous settlement are also a feature of the UAE and Oman.

The response to poor housing, spontaneous settlements and the housing shortage in general has been a rapid rise in rents of available property. In Kuwait, KD 200 (£415) a month was a normal price for indifferent accommodation in 1976; now it is £1500; annual rents in Dubai can range from 40,000 dirhams (£6,000) for a one-bedroomed flat and 130,000 dirhams (£19,500) for a three-bedroomed villa in the most desirable suburb. Abu Dhabi rents are approximately ten or fifteen per cent higher than in Dubai. Clearly, the majority of the rents asked for are out of each for many national and immigrant groups as this example for Oman shows:

In 1972 a second class two-bedroom apartment in Muscat would cost RS 300 per month. ... the average take home pay of an unskilled workers is RS 30 per month, a heavy duty lorry driver receives RS 45 per month.

In Oman a squatter settlement has developed near the existing boundaries of the built-up area. The government response to the housing shortage has been the erection of low-cost housing units. In 1976, 40 per cent of the UAE's housing budget was to go on low-cost housing to provide 5,000 new homes, and this year the Amir of Qatar waived 1,872 outstanding housing loans, offered 659 free homes and approved the construction of 640 more. In 1977 QR 80m has been set aside for 600 low-cost homes and Khalifah

Town is to become a Doha suburb exclusively for low-cost houses. Saudi Arabia awarded many contracts for housing schemes for people with middle-to-low incomes, and in early 1977 a \$540m high rise building programme was begun in Dammam.

In the summer of 1976, the Kuwaiti government outlined a scheme to build 52,000 low-cost homes by the end of 1981; part of this programme is the construction of a number of satellite villages south of Kuwait. This housing scheme is identical to the others within the Arabian Peninsula in that it is geared to the national population - all the states assume almost no responsibility for housing expatriate workers. Although the governments' housing projects will ease the pressure on housing, a reconsideration of the position of the states' responsibility to expatriates (especially the poorer ones) is needed. There appears to be a trend in the oil-producing states to ensure that foreign companies awarded contracts are to be responsible for housing their own workers. In Kuwait, India supplied 300,000 tons of cement, 7,000 tons of steel and 6,000 skilled and semi-skilled workers for a recent housing scheme; Korea is also becoming involved in this type of scheme. Thus, to deal with the housing shortage with respect to low- and middle-income nationals, the governments in the Arabian Peninsula are contracting manpower and raw materials from Asian countries; this has the advantage of overcoming the scarcity of manpower and resources without having to provide homes for additional expatriates. However, as the housing schemes and low interest rates from banks do not affect the existing expatriate population, discontent within this group will undoubtedly rise. Expatriates with the ability to do so will move from poor housing to better-quality housing, as gaps are created by nationals who move into new homes provided by the government. This situation is evident in Kuwait, where the shanty areas have a constantly changing population. The problem is compounded by the trend towards families becoming increasingly important in immigrant groups, thus creating greater pressure on facilities.

The various schemes adopted by the governments in the Arabian Peninsula to deal with a housing shortage have created a group of urban poor, as examples of Oman and Abu Dhabi show. First, in Oman a government publication discussing unskilled

workers states:

Around Muscat and Mutrah an observer sees many such people, living by the side of the road, under trees, or in the most primitive "shanties". Unless this trend is halted, it is possible to envisage the growth in a few years of a new class in Oman, a poor, often unemployed, rootless, industrialised urban proletariat; a class in which the seeds of violent political change would find fertile soil.²⁵

In order to keep this group under control, the Royal Omani Police Force were given some of the best houses in the Ruwi new town because,

It is recognised that to maintain an efficient and healthy police force, good housing is essential, and the very morale of the present members of this much admired force is in part due to the excellent standard of housing provided for all ranks.²⁶

The second example comes from an architect who has spent some time in Abu Dhabi:

... The poor in Abu Dhabi are very poor. Without a job and the necessary work permit, any immigrant can be deported. There is no security and subsequently no stability in the very poor conditions of urban blight. There are no gardens in the ghettos, so sitting on the central traffic reservation on the grass is very popular. Status for the shack dweller is not connected with garden size but with how new is his bicycle, or how many tapes of Indian minstrels he has for a portable

cassette player, or what kind of bed he owns. Measures of success vary a great deal between the immigrant groups, but the motivation is the same : money. Money is readily available to those with the skills, and the tenacity to pursue it makes the Middle East operate.²⁷

The problems of allocating water and housing in the urban areas of the Arabian Peninsula emphasise the limits imposed by urban growth, and both questions need to be considered as top priorities by the governments concerned if the urban areas are to survive in both the short and long term. Both the problems of water and housing availability result from the process of creating core urban areas in the Arabian Peninsula, which are distinguishable by the accumulation of economic surpluses within them. The differential allocation of this surplus among the social groups in the urban areas has resulted in spatial inequalities, of which the housing problem is a symptom. The problems of urbanisation in the region have arisen from the wider process of development and modernisation that is strongly capitalist in nature, rather than the problems of urbanisation per se.²⁸ The following chapter will review the problems and prospects of urbanisation in a wider perspective.

NOTES

1. Ward, 1976
2. Dwyer, 1968
" 1971
3. Pullen, 1966
4. Abu-Lughod, 1972
5. Drakakis-Smith, and Fisher, 1975
6. Dwyer, 1975
7. Dwyer, 1968
8. Deaths from motor accidents in Kuwait rose by 78 per cent in the period 1961-71 and in 1971 motor accident deaths accounted for 5 per cent of all deaths: Central Statistical Office, Statistical Abstract 1972, Kuwait.

9. see a)Shireff, 1976, p.VIII; b)Stevens, 1976
10. Some aspects of this are considered in: Al-Kuwari, 1978
11. Caponera, 1973
12. Buchanan & Co, 1970
13. Milmo, 1977
14. Roberts, 1977
15. FAO, 1974 Near East Mission on Marginal Lands, Geneva
16. for an explanation of the Israeli water planning see Wiener, 1972 'Comprehensive Water Resources Development Case History : Israel pp.401-411 in Wiener, 1972
17. Bahrain, Ministry of Housing, 1976
18. Metra Consulting, 1976a
19. ibid
20. Bahrain, Ministry of Housing, 1976
21. ibid.
22. Jamal, 1974
23. Metra Consulting, 1976, op.cit.
24. Oman National Statistical Dept., 1975
25. Oman National Statistical Department, 1975 op.cit.
26. Omani Embassy, 1975 'Housing Associations in the Sultanate of Oman' in Oman National Day Issue 1975 London
27. Fowkes, 1976
28. Abu Lughod, 1972

CHAPTER FIVE

Problems and Prospects

The polarisation of economic development has been a recurrent theme in this study and it has been hypothesised that the creation of 'core' economic regions has induced migration. The importance of migration to urbanisation in the Arabian Peninsula has been stressed and some of the problems resulting from the contemporary urbanisation process were considered. Many of the processes and resulting patterns and problems of urbanisation in the region were seen to be similar to other Third World situations.

Many of the discussions on Third World urbanisation have considered the question of whether the phenomenon of urban and economic concentration is desirable to the development of the society concerned; such a discussion of the problems and prospects of urbanisation relating to the Arabian Peninsula is therefore necessary. There are two principal viewpoints that may be relevant to the region. Firstly, there is a school of thought which regards the dominant urban centre as symbolic of a dynamic *expanding economy*; migration to the growing urban centres is regarded as a healthy indicator for economic growth and should be planned for and not suppressed. Abu-Lughod¹ has put forward this view in the Middle Eastern context and, although economic growth in the Arabian Peninsula has produced considerable social and spatial segregation, the processes of urbanisation have not been in operation long enough to reject or accept it.

The second major viewpoint regards the creation of dominant urban centres in the Third World as structural defects in a rational hierarchical system of central places, and suggests that spatial reconstruction² is necessary for the redistribution of resources. Johnson² partly bases his acceptance of this view on the fact that he has calculated that the ratio of villages to central places is lower for Europe than for the Middle East. According to these spatial strategists, 'urban balance' needs to be established in the Arabian Peninsula by creating medium-sized urban centres. This strategy, however, does not consider the particular environmental and cultural qualities of the region and

is in opposition to Abu-Lughod who sees no logical reason why cities in the Arabian Peninsula should be made to demonstrate spatial balance.

Perhaps a more beneficial explanation relating to the problems and prospects of urbanisation in the Arabian Peninsula is a consideration of how the urbanisation process is altering the stability of ecological structures in the region; this perspective is useful to geographers whose field of study can be considered to be located at the nexus of the human and physical environments. For ease of explanation, the human and physical ecological structures are considered separately here, but in reality they are symbiotically connected.

Stability in the human ecological structure in the region is best considered in terms of its traditional components of nomad, villager and urbanite and the relationships between them. This concept³ of 'ecological trilogy' was put forward by Paul Ward English³ who considered contemporary processes in the Middle East to be breaking down the traditional structures within it:

... an entirely new cultural and social geography is emerging in this region - the quantitative and qualitative growth in urban life and urban power, the secularisation of critical social classes, the destruction of pastoral tribes, and the integration of village communities into national societies.

This has relevance for the Arabian Peninsula, where the process of urbanisation has been occurring at a rapid rate, due in part to the catalyst of oil revenues; this has enabled the urban component of the trilogy to achieve unprecedented dominance. Conversely, the nomadic and rural elements of the trilogy are being diminished.

The decline of nomads has already been discussed. In the United Arab Emirates, bedouin represent as much as 30 per cent of the population⁴ and are considered to be a divergent population group in an urban dominated society. This is because, in a country which is deficient in manpower, it is considered intolerable that one-third of the population should be

unproductive to the industrialised urban economies. Many bedouin have been induced to move to the towns by employment opportunities and higher and more stable economic rewards than pastoral nomadism provides. In the UAE; the government has distributed land to low-income citizens so that many bedouin find themselves owners of land in the city centres.⁵ In Kuwait many bedouin are squatters in the city (Chapter four), and the government is promoting a policy of bedouin resettlement in new villages (a similar strategy was carried out in the UAE; these new settlements are dependent on the urban areas for main services and support.⁶ The erosion of nomadic life is evident in Oman where Birks⁶ has observed that many male bedouin are temporary migrants to the oil centres; the average yearly cycle of movement has been cut and now the only bedouin who take part in long movements are lorry-drivers.

Bedouin are now becoming so integrated into the urban economy that their customs and traditions are being preserved in museums in Qatar, and camel-owners in Abu Dhabi receive a subsidy of £145 per camel (the camels are used for camel racing and camel safaris). This decline in the traditional element in the ecological trilogy has removed a traditional source of food to the urban dwellers - camel and goat meat. The increasing proportion of a non-food producing sector of the population in the countries of the Arabian Peninsula has affected the rural component of the ecological trilogy. Many traditional oases are now becoming intensive agricultural centres (e.g. Haradh in Saudi Arabia, Al-Ain in UAE) and rely on high amounts of energy input for survival. The stability of these new rural centres is almost totally dependent upon the available market in the urban areas and the available oil revenues to maintain energy inputs.

In contrast to these rural centres that are dependent upon the dominant urban centres, many villages are in decline. In Oman it is the temporary migration of men to work outside the village that is causing decline (68 per cent of males over fourteen years in 17,500 villages surveyed by the Durham University Oman Project were absent from their home village, and only 12 per cent of adult Omani men have not worked away from home for a period of six months or more).⁸ Birks and Letts⁹ claim that it is the introduction of an increased cash economy in the

rural areas of Oman that is causing the traditional socio-economic structures of the villages to disappear. Of particular importance has been the neglect of the village water supply (fala) system). Consequently, many villages have declined:

Two decades or more ago, the population of Muqayda was 56, and of Diqal about 275. Today the villages are mere vestiges of their former selves; in 1973 when the last family left Muqayda, the population of Diqal was 156. Their cultivated areas have also declined markedly to 100 square metres at Muqayda and 850 square metres at Diqal only 11 per cent and 37 per cent respectively of their former areas.¹⁰

In contrast to the decline of nomads and villages in the ecological trilogy in the Arabian Peninsula has been the increasing importance and dominance of urban centres. The problem of growing numbers of urban dwellers imposing limits on the various services and available space in the cities was discussed in the previous Chapter, and will undoubtedly remain a problem in the long term. The limits imposed by increasing numbers in the cities of the Arabian Peninsula are human and physical in character. Of immediate concern to the maintenance of a stable human ecological structure within the cities in the region is reconciling the values of Islam with a Westernised urban society. Additionally, the traditional position of women is beginning to change as employment opportunities such as nursing and teaching expand.¹¹ Saudi Arabia, however, has entrenched the values of Islam for a number of reasons. It is arguable that the stability and unity of the country are only possible with the common acceptance of Islam which would tend to support Harvey's assumption that:

Parasitic cities are vulnerable unless the urban elite has strong ideological, economic or military control over the surplus-producing population.¹²

A more long term human limit imposed by the rapidly urbanising populations in the Arabian Peninsula is the psychological strain imposed on the inhabitants who have experience a rapid change in their environment. Calhoun's work¹³ on urban densities and psychological stress indicates that the human personality has its own internal limits (see also the work of Milgram¹⁴); the limit of resilience of the Arab personality will have to be high to accept the change in built environment that has occurred since the development of oil revenues. For example, the high-rise blocks that Saudi Arabia is erecting in the Eastern Province are culturally very distant from the insular courtyard house of the Medinas. In the case of Saudi Arabia:

Very quickly there occurred a rupture with the values and concept of the past. In architecture, for example, the house plan which looked inwards to the courtyard was exchanged for a type which looked outwards into the street. Traditional house-design which safe-guarded against the severities of the climate was disregarded in favour of designs which were ill-suited to the environment and relied heavily upon compensating mechanical aids. Any semblance of traditional character and style in architecture rapidly disappeared.¹⁵

The contemporary urbanisation process in the Arabian Peninsula has begun to change the traditional ecology trilogy and will possibly create an unstable human ecological structure in the future. The physical ecological structure is also tending towards instability. Mention has already been made of the parasitic nature of cities being dependent upon inputs of food, water and power, and upon having their wastes removed (Simmons¹⁶) and attention here will be drawn to the unstable variety of ecosystems that rapid urbanisation has created. The basis of this argument is Odum's concept¹⁷ of ecosystem balance which claims that urban areas which depend on high inputs, and intensively-used biotic systems with high productivity (such as

the intensive agricultural settlements in the region that serve the growing urban demand for food) need to be balanced by energy-productive ecosystems. Example of the latter include multiple-use areas (e.g. pastoral nomadic ranges) and wilderness areas. In the Arabian Peninsula the urbanisation process that is creating rapidly-growing urban areas has developed a highly parasitic ecosystem that 'can only expand to certain limits, beyond which the protective systems cannot balance them' (Simmons¹⁸). Oman and Bahrain provide examples of how rapid urban growth resulting from urbanisation is creating an unbalanced physical ecological structure.

In Oman, urban and industrial expansion has severely depleted the wilderness areas (the balancing ecosystems for the urban regions) and several species have become nearly extinct (e.g. the white oryx). Additionally, the felling of trees and clearance of desert scrub has increased desertification in the areas near the major settlements. However, the Oman government is now giving attention to these problems and a number of species are protected and surveys are to be carried out on the existing flora and fauna.¹⁹ Urban expansion in Bahrain has tended to occur on the poorer land that was not used for agriculture, but this land was high in salinity, with the result that many buildings in the urban centres are slowly being eroded by salt weathering.²⁰ Consequently, present urban expansion is on non-saline land, which is the land best suited to agriculture, and this has resulted in a conflict of interests over urban expansion and agricultural use. These examples have shown how the urbanisation process and the resulting urban growth has had important ramifications in the wider physical ecological structure. The discussion has emphasised how the rapidly-growing urban regions that are resulting from the process of urbanisation in the Arabian Peninsula have tended to create instability in the human and physical ecological structures. The changing characteristics of these ecological structures is creating a different human geography of the Arabian Peninsula from that which existed before oil was discovered, and these structures are likely to become more unstable in the long term if contemporary trends continue. More important short-term problems are those of political sensitivity and the size of oil revenues.

The dependence of the urban centres in the oil-rich countries in the region on foreign migrants was made clear in earlier Chapters, and it is necessary to emphasise here that the economies of the cities are upheld by foreign labour. At present, the majority of these form minority groups in the sense that they do not have the same social, economic or political rights as do the national group. With the increasing trend for migrants to be family-based, the importance of these minority groups will probably increase. As yet, there has been no unified proletariat-based movement in the Arabian Peninsula, but it is a latent possibility and, if activated, would undoubtedly disrupt the social order in the large urban centres where migrants are concentrated. Towards the end of 1979 a violent demonstration took place by 6,000 construction workers on a building project at Ain Baghzi, Kuwait. A second major, short-term problem will be that oil revenues may decrease; this will happen either because of a decrease in reserves, or a reduced demand in oil by the major oil consumers. Clearly, the human and physical ecological structures that are apparent in the Arabian Peninsula are largely maintained by oil revenues - indeed the migration process leading to urbanisation is a result of oil revenues creating employment 'pulls' - and any decrease in them would severely alter the balance in the ecological structures. It is possible that the large-scale urban centres in the region could become unstable as settlement structures.

Therefore it would seem that, in the long term, the processes and patterns of urbanisation in the Arabian Peninsula will probably create an unstable settlement pattern dependent on oil revenue to provide high amounts of energy input and an amenable foreign labour force. The present-day urban system is the result of historical processes and, although urbanisation has precedents throughout the Developing World, the oil-rich countries of the Arabian Peninsula are seeing the urban proportions of their populations grow at very rapid rates. This growth is leading to the development of core-periphery relationships which are evident both within the region and within individual cities.

NOTES

1. Abu-Lughod, 1972
2. Johnson, 1970
3. English, 1973
4. Fyfe, 1977
5. Ibid.
6. Birks, 1976 point made at a Seminar on 'A Geographers View of change amongst nomads' 13 Nov. 1976, Dept. of Geography, Univ. of Durham
7. Fyfe, 1977
8. Birks, & Letts, 1977
9. Ibid.
10. Ibid.
11. Yousseff, 1974
12. Harvey, 1973
13. Calhoun, 1962
14. Milgram, 1970
15. Mousalli; Shaker; Mandily, 1977
16. Simmons, 1974
17. Odum, 1969
18. Simmons, 1974
19. Ashworth, 1976
20. The Middle East Magazine, 1977-

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